Dorsey Marketplace

Draft Environmental Impact Report

(SCH # 2016022053)

City of Grass Valley

Prepared by Dudek

March 2019

Dorsey Marketplace
Draft Environmental Impact Report

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EXECUTIVE SUMMARY

ES.1 PROJECT LOCATION

The project site is bordered by State Route (SR) 20/49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south, and the Grass Valley Terrace Apartments to the east. The site is located between the SR 20/49 off-ramps for Dorsey Drive and Idaho-Maryland Road. The project would be accessible from Dorsey Drive and from Spring Hill Drive, which accesses Idaho-Maryland Road.

The 26.8-acre site is located at approximately 39°13′41.3″N 121°02′33.8″W and contains three parcels, designated by Assessor's Parcel Numbers: 035-260-062, 035-260-063, and 035-260-064.

ES.2 PROJECT SITE CHARACTERISTICS

The project site was the former location of the Spring Hill Mine, which operated at the site intermittently during the late 1800s and through the 1940s. Abandoned mine features located on site include excavations, pits, remnants of building foundations, stockpiles of mine waste rock, and dry tailings ponds.

Topography and Soils

The native topsoil at the project site consists of clay, gravelly clay, and sandy clay. Beneath the clay layer is the bedrock consisting of diabase and serpentine rock. In the trenches that appear on the site, the diabase and serpentine rocks are moderately to severely weathered. In these trenches, the clay layer over the serpentine and diabase was 2.5 feet thick. As noted in the Removal Action Work Plan for the site, the Dubakella complex dominated the majority of the site's soil conditions. The site is a part of the ultramafic–mafic "basement" of the Lake Combie complex. The approximately 26.8-acre project site is relatively flat and gently slopes from the northern boundary to the southern and southwestern boundary and over a knoll in the north central area. The western and central portions of the project site contain significant abandoned mine features and the eastern portion of the project site is largely undeveloped. Surface conditions in the south-central and eastern portion of the site are generally obscured by dense manzanita. Existing elevations on site range from between 2,610 feet above mean sea level (amsl) at the southern boundary (where Spring Hill Drive currently terminates), 2,704 feet amsl at the highest point on the site, and 2,690 feet amsl at the northern boundary of the site along Dorsey Drive. Rock outcrop is present at several locations in the western, northern, and eastern portions of the property.

Vegetation

The communities identified on the project site are broadly classified, whenever possible, into alliances and associations as described in *A Manual of California Vegetation* (Sawyer et al., 2009

as cited in Appendix E). Five land cover types exist on the project site. A majority of the site is composed of whiteleaf manzanita (*Acrtostaphylos viscida*) chaparral and McNab cypress (*Hesperocyparis macanbiana*) woodland with smaller portions consisting of ponderosa pine (*Pinus ponderosa*) forest, Fremont cottonwood (*Populus fremonti*) woodland, and ruderal/developed lands (Appendix E).

Whiteleaf Manzanita Chaparral

Chaparral communities are located throughout the site including: along the southern boundary adjacent to the existing Spring Hill Drive; along the northeastern boundary of the project site adjacent to the Grass Valley Terrace Apartments; in the tip of the southeastern corner; and along most of the western portion of the site. The shrub canopy in the chaparral is dense and little vegetation grows under the shrubs (Appendix E).

McNab Cypress Woodland

McNab cypress woodland, a sensitive natural community, is located in the northeastern corner adjacent to Dorsey Drive and in the southeastern corner. McNab cypress woodland overstory on site is dominated by McNab cypress with minimal herbaceous vegetation in the understory. This canopy was generally short (less than 20 feet in height) and was either densely clustered or scattered with whiteleaf manzanita chaparral between trees. McNab cypress woodland is a fire-adapted species known to occur primarily on soils derived from basalt, conglomerate, gabbro, greenstone or serpentine substrates (Appendix E).

Ponderosa Pine Forest

Ponderosa pine forest is located in the central portion of the project site extending to the eastern boundary adjacent to the Grass Valley Terrace Apartments. Ponderosa pine trees are the dominant plant in this vegetation community and trees on site are tall and well-spaced allowing for the growth of a sparse shrub layer in the understory (Appendix E).

Cottonwood Forest

One patch of cottonwood forest is located on the project site in the western portion along the southern boundary. This area is the lowest point on the property and it appears that water runoff from the hillside collects there; although no standing water was noted during the site survey conducted by Dudek on March 4, 2016 (Appendix E).

Ruderal/Developed

Ruderal and developed land consists of a gravel parking lot and several cleared dirt access roads along the northern boundary of the site adjacent to Dorsey Drive extending south toward the center

of the project site and historic mining facilities including cement foundations and mine tailing depressions in the western portion of the project site bordering SR 20/49 (Appendix E). Ruderal and developed lands are areas that have been altered through human disturbance and may support a variety of native and nonnative vegetation.

Waters of the United States

Potentially jurisdictional waters and wetlands are regulated by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the federal Clean Water Act, the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act and the Porter-Cologne Act, and CDFW under Section 1602 of the California Fish and Game Code. Pursuant to the federal Clean Water Act, ACOE jurisdictional areas include those supporting hydric soils, hydrology and hydrophytic vegetation. Aquatic features on site include numerous erosional channels and one depression located at the southwestern end of the project site. Based on historical aerial photos and visual inspection during the site visit, the Biological Technical Report completed for the project concluded that these features are only periodically inundated and tend to remain inundated for short periods, depending on frequency and duration of rainfall events (Appendix C). The project site supports an intermittent drainage in the southwestern portion of the site. This drainage ties into an existing City of Grass Valley storm drain, which outfalls to Wolf Creek. Because the intermittent drainage is hydrologically connected to a waters of the United States, this feature is also likely to fall within the jurisdiction of the ACOE as a waters of the United States (Appendix

Surrounding Land Uses

SR 20/49 runs parallel to the project site along the site's western boundary. There are three self-storage facilities to the south (Old Barn, Ernie's, and Springhill), as well as Bub Enterprises Inc. To the southeast, there is Gold Country Gymnasium and Bikram's Yoga. To the north of this and east of the project site, separated by open space, are the Grass Valley Terrace Apartments. To the north of the proposed project site, on the other side of Dorsey Drive, are the Springhill Garden Apartments. Additionally, across SR 20/49 there are sensitive populations in the Golden Empire Nursing and Rehab Center and the Sierra Nevada Memorial Hospital.

ES.3 PROJECT OBJECTIVES

The project applicant has set forth the following objectives for the proposed project:

- Create a high-quality mixed-use infill project combining residential, retail, and community uses through the re-use of an existing brownfield site consistent with the City's plans for the Core Priority Development Area and its Economic Strategic Plan.

- Develop an infill site adjoining and proximate to existing infrastructure, high density residential, affordable and senior housing, Sierra Nevada Memorial Hospital and medical offices, and existing businesses along Idaho-Maryland Road.
- Construct the Spring Hill Drive connector between Dorsey Drive and Idaho Maryland Road, consistent with the City's General Plan.
- Incorporate safe and convenient walking paths, access to public transit, and enhanced bicycle circulation.
- Redevelop the property to allow for the environmental clean-up of a brownfield former mining site.
- Develop the project site in such a way as to make a positive contribution to the City's satisfaction of its Regional Housing Needs Allocation through the creation of new quality high-density market-rate housing.
- Create new retail uses that will capture more local sales tax dollars, reducing the amount of sales tax leakage from City and County residents shopping in other jurisdictions, and reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions associated with shopping destinations outside the area.
- Develop a retail mixed use center that incorporates quality design, local art and community amenities that delivers a lifestyle oriented experience.
- Develop a diverse mix of retail uses that allows a single vehicle trip to the project site verses multiple vehicle trips to a number of retail locations to enjoy a similar shopping experience, thereby reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions.
- Develop a mixed-use project that includes high-density residential uses to reduce the need for vehicular trips to satisfy resident retail needs.

ES.4 DESCRIPTION OF PROPOSED PROJECT CHARACTERISTICS

The project site is currently designated under the General Plan as Business Park and zoned Corporate Business Park. This EIR evaluates two Project Alternatives with an equal weight environmental analysis.

Both Alternative A and Alternative B require a General Plan Amendment and rezone to change land currently designated for Business Park to Commercial and Residential Urban High Density and a rezone from Corporate Business Park to Commercial (C-2) and Multiple Dwelling Residential (R-3).

Alternative A proposes to develop approximately 178,960 square feet of commercial building space and 90 multiple-family dwelling units. Within the commercial component of the project, there would be four major shops (with sizes ranging between 20,00 and 40,000 square feet), six smaller shops (with sizes between 3,800 and 7,200 square feet), and three pads for drive-through restaurants (with sizes between 3,000 and 4,000 square feet). The six smaller shops are proposed in the northern and eastern portions of the site, with three of the four major shops proposed for the southwestern portion and one major shop for the northern portion. Parking would be placed in the central and western portions of the site. The proposed dwelling units would be offered as market-rate rental units and are expected to include 50 two-bedroom units and 20 each of the one- and three-bedroom layouts. The units would range in size from 1,013 to 1,600 square feet. They would be constructed as two-story buildings in the southeastern corner of the project site. This area would also include an apartment clubhouse and pool. A small dog park is also proposed along the eastern site boundary, south of proposed Pad 4.

Alternative B proposes to develop approximately 104,350 square feet of commercial building space, 8,500 square feet of office space and 171 multiple-family dwelling units. Two major shops (35,000 and 21,500 square feet), five smaller shops (with sizes between 4,000 and 8,500 square feet), three pads for drive-through services such as fast-food and financial institutions (sizes between 3,200 and 4,200 square feet) and one 6,000-sqare-foot pad that would support food service without a drive-through. The two major shops and two of the five small shops are proposed in the northwestern portion of the site adjacent to the SR 20/49 off-ramp. The other three small shops would be located in the eastern portion of the site adjacent to the central spine road. As in Alternative A, the four pads would generally be located in the northeastern portion of the site near the project site entrance on Dorsey Drive. Parking would be placed in the central and western portions of the site and bus shelters would be provided on both sides of the central drive adjacent to Shop E. This alternative would construct 171 residential apartments that would be offered as market-rate rental units and are expected to include 95 two-bedroom units and 38 each of the one- and three-bedroom layouts. The units would range in size from 1,013 to 1,600 square feet. They would be constructed as two-story and three-story buildings in the southern portion of the project site. One of the buildings would include approximately 50% apartment space and 50% office space, providing 8,500 square feet of office space near the center of the project site. Alternative B would also include an apartment clubhouse and pool and tot lot park area. A small dog park is also proposed along the eastern site boundary, south of proposed Pad 4.

ES.5 AREAS OF KNOWN CONTROVERSY AND ISSUES RAISED

Section 15123 (b)(2) of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) requires the executive summary of an environmental impact report (EIR) to disclose areas of controversy known to the lead agency that have been raised by the agencies and the public. The City of Grass Valley (City) received 7 letters in response to the Notice of Preparation (NOP)

that was circulated to solicit agency and public comments on the scope and environmental analysis to be included in the EIR. The NOP and the comments received by the City are included in Appendix A of this Draft EIR. The following concerns were raised in the responses to the NOP and at the public scoping meeting for this EIR:

- Traffic generation and proximity to SR 20/49, specifically the Dorsey Drive Interchange
- Safety concerns regarding the project's use of Spring Hill Drive
- Increased development changing the visual character of the City
- Loss of habitat
- Visual impacts such as signage and light pollution
- Air quality impacts from idling delivery trucks as well as retail goods from overseas
- The location of the project site within Airport Land Use compatibility zone D, Urban Overlay Zone

ES.6 PROJECT ALTERNATIVES

The alternatives chapter of the EIR (Chapter 17, Alternatives) was prepared in accordance with Section 15126.6 of the CEQA Guidelines. The alternatives analyzed in this EIR in addition to Alternative A and Alternative B are:

- **Alternative 1a: No Project/No Build** This alternative would not develop the project site.
- **Alternative 1b: No Project/Existing Designations** This alternative would develop the project site in accordance with existing land use designations.
- **Alternative 2: Reduced Development** This alternative would reduce the amount of commercial development by about 15% and residential development by 50% in an effort to reduce impact levels.
- **Alternative 3: Vertical Mix Use** The alternative entails a vertical mixed use development with a reduced project footprint that would reduce the amount of commercial development by about 15% and increase residential development by about 15% in an effort to reduce impact levels.
- **Alternative 4: Tiered Alternative** This alternative would create a tiered project site, featuring three tiers separated by sloped grades to more closely match the natural grade of the site. It would develop 138,700 sf. of commercial retail space and 90 multifamily apartments.

ES.7 INTENDED USES OF THE DORSEY MARKETPLACE EIR

The Draft EIR has been prepared in accordance with CEQA (California Public Resources Code, Section 21000 et seq.) and the CEQA Guidelines (14 CCR 15000 et seq.). The Draft EIR is an informational document prepared to provide public disclosure of potential impacts of the project and is not intended to serve as a recommendation of either approval or denial of the project. As lead agency, the City "is responsible for the adequacy and objectivity of the draft EIR" (14 CCR 15084(e)). Section 15121(a) of the CEQA Guidelines states:

> An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This Draft EIR is a "project EIR" pursuant to CEQA Guidelines Section 15161. A Project EIR examines the environmental impacts of a specific project. This type of EIR focuses on the changes in the environment that would result from implementation of the project, including construction and operation. As the lead agency for this project, the City is required to consider the information in the EIR along with any other available information in deciding whether to approve the project entitlements requested. The basic requirements for an EIR include providing information that establishes the environmental setting (or project baseline), and identifying environmental impacts, mitigation measures, project alternatives, growth-inducing impacts, and cumulative impacts. In a practical sense, an EIR functions as a method of fact-finding, allowing an applicant, the public, other public agencies, and agency staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure. Additionally, this EIR provides the primary source of environmental information for the lead agency to consider when exercising any permitting authority or approval power directly related to implementation of this project.

Required Permits and Approvals

Table ES-1 lists the entitlements and approvals required from the City and from other responsible agencies for the proposed project. Following the table is a discussion of each of the entitlements and approvals required from the City and the approvals and permits required from other agencies.

Table ES-1
Required Approvals/Permits for Dorsey Marketplace

Required Permit/Approval	Permitting Agency
General Plan Amendment	City of Grass Valley
Rezone	City of Grass Valley

Table ES-1
Required Approvals/Permits for Dorsey Marketplace

Required Permit/Approval	Permitting Agency
Development Review Permit	City of Grass Valley
Use permit	City of Grass Valley
Lot Line Adjustment	City of Grass Valley
Encroachment Permit	California Department of Transportation
Clean Water Act Section 401 Water Quality Certification	Regional Water Quality Control Board
Clean Water Act Section 404 Permit	U.S. Army Corps of Engineers
Authority to Construct	Northern Sierra Air Quality Management District
Permit to Operate	Northern Sierra Air Quality Management District

ES.8 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table ES-2 lists all of the impacts associated with the proposed project, as evaluated in this EIR. The table identifies the level of significance of each impact and presents the mitigation measures (MMs) necessary to reduce impacts to a less than significant level.

Table ES-2
Dorsey Marketplace Draft EIR Impacts and Mitigation Summary

Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
Land Use				
3-1 Would the project conflict with land use plans, policies, or regulations?	Alternative A	Potentially Significant	Mitigation Measures 6a, 6b, 6c, 6d, 6e, 6f, 7a, 9b, 9c, 9d, 10a, and 10b (see full text below)	Less than Significant
	Alternative B	Potentially Significant	Mitigation Measures 6a, 6b, 6c, 6d, 6e, 6f, 7a, 9a, 9c, 9d, 10a, and 10b (see full text below)	Less than Significant
3-2 Would the project conflict with surrounding land uses, current and planned, or physically divide an existing community?	Alternative A	Potentially Significant	Mitigation Measures 5a, 8a, 8b, 8c, 8d, 8e, 8f, 8g, 9c, 10a, 10b, and 15a (see full text below)	Less than Significant
	Alternative B	Potentially Significant	Mitigation Measures 5a, 8a, 8e, 8h, 9c, 10a, 10b, and 15a (see full text below)	Less than Significant
Population, Housing, and Employment				
4-1 Would the project induce substantial population growth in the area?	Both Alternatives	Less than Significant	None Required	Less than Significant
4-2 Would the project displace substantial numbers of existing housing and/or people, necessitating the construction of replacement housing elsewhere?	Both Alternatives	No Impact	None Required	No Impact
4-3 Would the project reduce the affordable housing supply, impair the City's ability to meet its RHNA obligations, or create a substantial increase in demand for affordable housing?	Both Alternatives	Less than Significant	None Required	Less than Significant
4-4 Would the project contribute to significant cumulative impacts associated with population, employment, and housing?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
Aesthetics				
5-1 Would the project substantially damage scenic resources, including but not limited to, trees, rocks, outcroppings, and historic buildings?	Both Alternatives	Potentially Significant	MM 5a: Final landscaping plans shall be approved by the City of Grass Valley Planning Division prior to issuance of any grading permits for the project site. The landscape plan shall be drawn to scale and shall show the locations of existing trees and plant material to be retained and the location and proposed design of landscaped areas and the varieties and sizes of plant materials to be planted. The final landscaping plans shall demonstrate compliance with the following standards: • Landscaping along the western, southern, and eastern site boundaries shall include a mixture of shrubs and trees spaced such that there is sufficient room for each plant to grow while also providing visual screening of large walls, loading docks, and parking areas. This may be accomplished with staggered meandering rows of planting that provide depth and natural variation in placement and plant materials/species. At a minimum, perimeter landscaping shall include species that typically reach heights at least as tall as the proposed buildings, and shall have sufficient quantities of vegetation such that at maturity, the vegetation will fully block sections of views that are at least 10 feet in length, spaced a minimum of 30 feet apart to a height of 8 feet. In the sections between those where views are fully blocked and at heights greater than 8 feet, views of the development must be screened with varying amounts of landscaping. • Loading and service areas for delivery or transfer of merchandise including vehicle access to those areas shall be screened from public view corridors and building entries by a combination of building design, layout, grade separations, masonry walls and dense landscaping. • Site areas not used for buildings, parking or other designated functions shall be landscaped.	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			• All trees planted within the site shall be transplanted from five-gallon or larger size containers. • Landscaped areas shall utilize predominantly low-maintenance, native and adaptive drought-tolerant plantings that conserve water and facilitate the use of drip irrigation. • Landscaped areas shall use native trees and vegetation selected and placed to create a "natural forest" character in the landscape. • Parking lot landscaping shall meet the requirements of the City of Grass Valley Municipal Code Section 17.34.030. • The project site entrances at Dorsey Drive and Spring Hill Drive shall be landscaped with a mixture of ground cover, flowers, shrubs, and trees. At each entrance, landscaping shall be provided on both sides of the street and in median islands. • Along the project site frontage on Dorsey Drive and along the on-site section of Spring Hill Drive, at least one street tree shall be properly installed for each 30-foot length of right-of-way and shall be maintained in compliance with the City of Grass Valley Municipal Code Section 17.34.140 (Maintenance of Landscape Areas). The review authority may modify this requirement depending on the chosen tree species and its typical spread at maturity. • The project applicant shall post with the City of Grass Valley surety in the form of cash, letter of credit, performance bond, or instrument of credit, in an amount equal to 150% of the total value of all plant materials, irrigation, installation, and maintenance. Such surety shall be posted with the City for a 2-year period in compliance with Grass Valley Municipal Code Section 17.74.050 (Performance Guarantees). • Prior to issuance of any certificates of occupancy for structures within the project site, the project applicant shall submit to the	

Table ES-2
Dorsey Marketplace Draft EIR Impacts and Mitigation Summary

Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			Planning Division a letter signed by a licensed landscape architect, or the landscape contractor who performed the installation certifying that the landscaping and irrigation for the project has been installed in compliance with the approved plans.	
5-2 Would the project substantially degrade the existing visual character or quality of the project site and its surroundings?	Both Alternatives	Potentially Significant	MM 5a (see above)	Less than Significant
5-3 Would the project create a new source of substantial light or glare?	Both Alternatives	Less than Significant	None Required	Less than Significant
5-4 Would the project contribute to cumulative impacts to the visual character of the region?	Both Alternatives	Less than Significant	None Required	Less than Significant
Biological Resources				
6-1 Would the project have a substantial adverse effect on candidate, sensitive or special-status species?	Both Alternatives	Potentially Significant	MM 6a: Prior to issuance of grading permits, a special-status plant species survey shall be conducted at a time when special-status plants are evident and identifiable to determine if they are present on site. Surveys shall be conducted by a qualified biologist knowledgeable of the plant species in the region and shall be floristic in nature. If any special-status plant species are identified during the surveys, a no-disturbance buffer shall be created by the qualified biologist around the species. The perimeter of the buffer zone shall be fenced or marked with staked flags. If avoidance is not possible, consultation shall be initiated with CDFW or USFWS, depending on the status of the species, to determine if transplantation, seed salvage, or other propagation measures are appropriate to conserve the species. If no evidence exists that special-status plant species are present on the project site, then no further mitigation is required.	Less than Significant

Table ES-2
Dorsey Marketplace Draft EIR Impacts and Mitigation Summary

Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			MM 6b: Prior to issuance of grading permits, a pre-construction survey shall be conducted at a time when Blainville's horned lizard is reasonably expected to be active to determine if they are present on site. Surveys shall be conducted by a qualified biologist knowledgeable of the lizard species in the region. If any Blainville's horned lizard are identified during the surveys, a no-disturbance buffer shall be created by the qualified biologist around the species. The perimeter of the buffer zone shall be fenced or marked with staked flags. If avoidance is not possible, consultation shall be initiated with CDFW to determine if relocation is appropriate to conserve the species. If no evidence exists that Blainville's horned lizard are present on the project site, then no further mitigation is required. MM 6c: Should construction begin during the bird breeding season (February 1 through September 30), a pre-construction nesting bird survey shall be performed no sooner than 14 days prior to any groundbreaking activities or tree removal to determine if there are any active nests within the project area (including a 200-foot buffer for raptors). If the construction site remains inactive for more than 1 month during the breeding season and construction would resume during the breeding season, another pre-construction nesting bird survey shall be performed no sooner than 14 days prior to reactivation of construction activities on site. If any active nests are observed during surveys, an avoidance buffer shall be determined and flagged by the qualified biologist based on species, location, and planned construction activity. These nests shall be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Avoidance could consist of delaying construction in proximity to the nest during the nesting season, or creating a buffer zone between the nest and the activity. Project activities shall be confined to daylight hours	

Table ES-2
Dorsey Marketplace Draft EIR Impacts and Mitigation Summary

Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			to prevent impacts to foraging nocturnal avian species. If preconstruction surveys indicate nests are inactive or potential habitat is unoccupied during construction period, no further mitigation is required. MM 6d: All construction workers shall receive worker environmental awareness program training conducted by a qualified biologist or an environmentally trained construction manager. Worker environmental awareness program training may also be conducted through a video created by a qualified biologist specifically for this project. Worker environmental awareness program training shall instruct workers to recognize all special-status species potentially present in the project area; identify their habitat; and discuss the nature and purpose of protective measures, including best management practices and other required mitigation measures. Personnel shall be instructed to avoid wetlands and waters on the project site, other than where impacts have been authorized, and to prevent spills, and shall be given contact information for the qualified biologist.	
6-2 Would the project have a substantial adverse effect on riparian habitat or other sensitive natural communities?	Both Alternatives	Potentially Significant	MM 6e: Prior to issuance of grading permits, the project applicant shall submit to the City evidence that compensatory habitat restoration for the loss of McNab Cypress woodland and cottonwood forest has been or will be completed. This may include a combination of on-site replanting and restoration and off-site restoration sufficient to ensure no net loss of habitat functions or values. On-site planting may include restoration of the disturbed areas of McNab Cypress woodland and cottonwood forest, as well as planting of individual McNab Cypress and Fremont cottonwood trees as part of the proposed landscaping plan.	Less than Significant

Table ES-2
Dorsey Marketplace Draft EIR Impacts and Mitigation Summary

Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
6-3 Would the project have a substantial adverse effect on federally protected wetlands?	Both Alternatives	Potentially Significant	MM 6f: Prior to issuance of a grading permit, the project applicant shall acquire a Clean Water Act Section 404 permit and Section 401 Water Quality Certification. To compensate for the loss of jurisdictional wetlands associated with proposed activities, the project applicant shall (1) restore and/or create wetlands on site; (2) create wetlands at an off-site location acceptable to the resource agencies; (3) purchase compensatory mitigation credits at an agency-approved mitigation bank; or (4) a combination of 1, 2, or 3. The project applicant shall develop the mitigation approach in conjunction with the resource agencies during the permitting process. The mitigation requirements shall be in compliance with federal and state Clean Water Act laws. The final mitigation ratios, design, and implementation shall comply with the terms and conditions of the Section 404 permit issued by the Sacramento District U.S. Army Corps of Engineers and the Section 401 Water Quality Certification and Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board.	Less than Significant
6-4 Would the project interfere substantially with wildlife movement?	Both Alternatives	Less than Significant	None Required	Less than Significant
6-5 Would the project conflict with local policies or ordinances protecting biological resources?	Both Alternatives	Less than Significant	None Required	Less than Significant
6-6 Would the project conflict with provisions of an approved regional, state, or local habitat conservation plan?	Both Alternatives	No Impact	None Required	No Impact
6-7 Would the project contribute to significant cumulative impacts to biological resources?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
Cultural Resources				
7-1 Would the project cause a substantial adverse change in the significance of a historical resource, archaeological resource, or tribal cultural resource?	Both Alternatives	Potentially Significant	MM 7a: All construction workers shall receive worker cultural resources awareness training conducted by a qualified archaeologist, and shall receive a worker cultural resources awareness brochure prepared by the same qualified archaeologist. Worker cultural resources awareness training may also be conducted through a video created by a qualified archaeologist specifically for this project. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating state laws and regulations. The worker cultural resources awareness training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site, and shall outline what to do and who to contact if any potential archaeological resources or artifacts are encountered. The program shall also underscore the requirement for confidentiality and culturally appropriate treatment of any kind of significance related to Native Americans and behaviors, consistent with Native American tribal values. Worker cultural resources awareness training shall instruct workers to recognize potential cultural resources, such as the presence of discolored or dark soil, fire-affected material, concentrations of lithic materials, or other characteristics observed to be atypical of the surrounding area; lithic or bone tools that appear to have been used for chopping, drilling, or grinding; projectile points; fired clay ceramics or non-functional items; non-local high-quality materials such as chert and obsidian; and historic artifacts such as glass bottles and shards, ceramic material, building or domestic refuse, ferrous metal, or old features such as concrete foundations or privies.	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			Prior to issuance of a grading permit, the City of Grass Valley shall verify that project construction documents include the following note: "If any cultural resources, such as structural features, mining equipment, unusual amounts of bone or shell artifacts, or architectural remains, are encountered during any construction activities, the contractor shall suspend all work within 100 feet of the find and immediately notify the City's Community Development Director." Further, the project applicant shall undertake the following: • Retain a qualified archaeologist to conduct an investigation of the site as needed to assess the resources (i.e., whether it is a "historical resource" or a "unique archaeological resource") and to provide management recommendations should potential impacts to the resource be found to be significant (possible management recommendations for historical or unique archaeological resources could include resource avoidance or data recovery excavations where avoidance is infeasible in light of project design or layout, or is unnecessary to avoid significant effects). • Consult with the United Auburn Indian Community (UAIC) to determine if the find is a tribal cultural resource. If so, consultation with the UAIC shall be consistent with the requirements of California Public Resources Code Sections 21084.3(a) and (b) and CEQA Guidelines Section 15370, and shall include consideration of requiring compensation for the impact by replacing or providing substitute resources or environments. • As warranted by any cultural resources found on site, prepare reports for resources identified as potentially eligible for listing in the California Register of Historical Resources in consultation with the State Historic Preservation Officer, and if applicable, tribal representatives.	

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
7-2 Would the project disturb any human remains, including those interred outside of dedicated cemeteries?	Both Alternatives	Less than Significant	None Required	Less than Significant
7-3 Could project construction contribute to a cumulative loss of cultural resources?	Both Alternatives	Less than Significant	None Required	Less than Significant
Transportation				
8-1 Would the project result in an increase in traffic that is substantial in relation to the existing traffic volumes and capacity on SR 20/49?	Both Alternatives	Less than Significant	None Required	Less than Significant
8-2 Would the project result in an increase in traffic that is substantial in relation to the existing traffic volumes and capacity on City of Grass Valley roadways and intersections?	Alternative A	Potentially Significant	MM 8a: Under either Alternative A or Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of a larger concrete porkchop barrier within the existing acceleration lane to restrict all movements from the eastbound approach at the Idaho Maryland Road/ Brunswick Road intersection to right turns. MM 8b: Under Alternative A and Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of either a traffic signal or a roundabout at the Idaho Maryland Road/State Route 20/49 northbound ramps intersection.	Less than Significant
	Alternative B	Potentially Significant	MM 8a: (see above) (Note: MM 8b applies to Alternative B under Impact 8-9 but not under Impact 8-2.)	Less than Significant
8-3 Would the project increase impacts to vehicle safety due to roadway design features or incompatible uses?	Both Alternatives	No Impact	None Required	No Impact

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
8-4 Would the project result in inadequate emergency access or access to nearby uses?	Both Alternatives	No Impact	None Required	No Impact
8-5 Would the project create hazards or barriers for pedestrians or bicyclists?	Both Alternatives	Less than Significant	None Required	Less than Significant
8-6 Would the project conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?	Both Alternatives	Less than Significant	None Required	Less than Significant
8-7 Would the project cause a change in air traffic patterns, including either an increase in traffic levels or a change in location resulting in substantial safety?	Both Alternatives	Less than Significant	None Required	Less than Significant
8-8 Would the project result in increased vehicle circulation or congestion due to a lack of sufficient parking capacity to support the proposed land uses	Both Alternatives	No Impact	None Required	No Impact
8-9 Would the project contribute to a cumulative increase in traffic that conflicts with adopted policies and plans related to intersection and roadway segment function, including consideration of LOS and ADT?	Alternative A	Potentially Significant	MM 8a: (see above) MM 8b: (see above) MM 8c: Under Alternative A, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of a traffic signal at the Dorsey Drive/Catherine Lane intersection. MM 8d: Under Alternative A, prior to issuance of the first certificate of occupancy for the project site, the project applicant shall pay a fair share contribution towards the signal optimization of the Dorsey Drive/SR 20/49 SB/EB On-Ramp/Joerschke Drive traffic signal	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			MM 8e: Under Alternative A or Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair share contribution towards construction of either a traffic signal or roundabout at the Dorsey Drive/Sutton Way intersection. MM 8f: Under Alternative A, prior to issuance of a building permit, the project applicant shall restripe the southbound approach to the Idaho Maryland Road/Spring Hill Drive intersection to create a southbound right-turn pocket. MM 8g: Under Alternative A, prior to issuance of a building permit, the project applicant shall pay a fair share contribution towards the construction of a traffic signal or roundabout at the Bennett Street/SR 49/20 SB Off-Ramp/Tinloy Street intersection.	
	Alternative B	Potentially Significant	MM 8a: (see above) MM 8b: (see above) MM 8e: (see above) MM 8h: Under Alternative B, prior to issuance of the first certificate of occupancy for the project site, the project applicant shall pay a fair share contribution towards the signal optimization of the traffic signals at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection and the Dorsey Drive/SR 20/49 NB Ramps intersection.	Less than Significant
Noise				
9-1 Would the project expose persons to or generate noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies?	Alternative A	Potentially Significant	MM 9b: Under Alternative A, a noise assessment shall be performed to address potential noise impacts to the apartment buildings immediately south of Shops C, D, and E to determine the exposure to noise from commercial mechanical equipment noise and truck delivery noise at Shops C, D, and E and at Major 4. Under Alternative B the noise assessment shall consider noise exposure associated with commercial mechanical equipment noise and truck delivery noise at Shops C, D, and E and at Major 1. For either alternative the	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			assessment shall identify requirements to construct noise barriers for commercial noise sources and/or implement increased construction standards within the affected apartment buildings to ensure that interior noise levels will be 45 dB or less.	
	Alternative B	Potentially Significant	MM 9a: Under Alternative B only, a noise attenuation barrier shall be constructed between the proposed residential apartment buildings in the southwestern corner of the site and SR 20/49. Further, where windows on the second and third floors of buildings adjacent to SR 20/49 and its off-ramp have a direct line of sight to the highway and/or off-ramp shall have a minimum Sound Transmission Class (STC) rating of 32. The noise attenuation barrier shall be a minimum height of 6 feet and shall be constructed of concrete or other solid material that is rigid and has a minimum density of 20 kilograms/square meter. Additionally, the noise attenuation barrier shall be constructed in accordance with the Caltrans standards outlined in Chapter 1100 of the Highway Design Manual. The City of Grass Valley shall ensure that the noise barriers are shown on construction plans prior to issuance of grading permits and shall verify the barriers have been constructed as required prior to issuance of certificates of occupancy. MM 9b: (see above)	Less than Significant
9-2 Would the project expose persons to or generate excessive ground-borne vibration or ground-borne noise?	Both Alternatives	Less than Significant	None Required	Less than Significant
9-3 Would the project substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Both Alternatives	Potentially Significant	MM 9c: Under Alternative A and Alternative B, a noise assessment of the mechanical equipment for the proposed residential units east of Spring Hill Drive shall be completed to identify the noise levels to which adjacent neighbors could be exposed and to identify noise control methods (such as placing equipment	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			further from the adjacent neighbors and using barriers to screen the equipment) sufficient to ensure that noise levels at the nearest sensitive receptor do not exceed 55 dBA during daytime hours and 50 dBA during nighttime hours.	
9-4 Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Both Alternatives	Potentially Significant	MM 9d: Prior to issuance of grading and/or building permits, City staff shall ensure that project Grading and Building Plans identify locations for all stationary noise-generating construction equipment, such as air compressors, that are located as far as practical from nearby homes. Where such equipment must be located near adjacent residences, project Grading and Improvement plans shall include provisions to provide acoustical shielding of such equipment prior to issuance of grading and/or building permits Additionally, City staff shall ensure that the Grading and Building Plans include the following notes: A. Construction noise emanating from any construction activities for which a grading or building permit is required shall be prohibited on Sundays and federal holidays, and shall occur only as follows: • Monday through Friday, 76:00 a.m. to 78:00 p.m. • Saturday, 78:00 a.m. to 76:00 p.m. B. All construction equipment shall be fitted with factory-installed muffling devices, and all construction equipment shall be maintained in good working condition to lower the likelihood of any piece of equipment emitting noise beyond the standard decibel level for that equipment. C. All equipment and vehicles shall be turned off when not in use. D. Unnecessary idling of internal combustion engines shall be prohibited. E. Idling shall be limited to no more than 5 minutes.	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
9-5 Would the project result in traffic noise levels causing a substantial permanent increase in cumulative noise levels?	Both Alternatives	Less than Significant	None Required	Less than Significant
Air Quality				
10-1 Would the project conflict with or obstruct implementation of the applicable air quality plan?	Both Alternatives	Less than Significant	None Required	Less than Significant
10-2 Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Both Alternatives	Potentially Significant	MM 10a: Prior to issuance of grading permits, the City of Grass Valley shall verify that construction contracts include requirements for construction contractor(s) to implement the following measures: • Alternatives to open burning of vegetative material will be used unless otherwise deemed infeasible by the NSAQMD. Among suitable alternatives are chipping, mulching, or conversion to biomass fuel. • Grid power shall be used (as opposed to diesel generators) for job site power needs where feasible during construction. • Temporary traffic control shall be provided during all phases of the construction to improve traffic flow as deemed appropriate by local transportation agencies and/or Caltrans. • Construction activities shall be scheduled to direct traffic flow to off-peak hours as much as practicable. • Minimize active earthmoving and the generation of fugitive dust to the extent feasible when pedestrians walk by active project construction sites. MM 10b: Prior to issuance of grading and building permits, the City of Grass Valley shall verify that building plans include provisions for the following measures to reduce air pollutant emissions throughout project operation:	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			• There shall be a limit of one wood-burning appliance per residence, and it shall be an EPA Phase II certified appliance. Also, each residence shall be equipped with a non-wood-burning source of heat. • The project applicant shall provide, operate, and fund a green-waste drop-off site for residents. • Streets shall be designed to maximize pedestrian access to transit stops. • The project shall provide for pedestrian access between bus service and major transportation points within the project, and between separate sections of the project, where feasible.	
10-3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in nonattainment under an applicable federal or state ambient air quality standard (including the release of emissions that exceed quantitative thresholds for ozone precursors)?	Both Alternatives	Less than Significant	None Required	Less than Significant
10-4 Would the project expose sensitive receptors to substantial pollutant concentrations?	Both Alternatives	Less than Significant	None Required	Less than Significant
10-5 Would the project create objectionable odors affecting a substantial number of people?	Both Alternatives	Less than Significant	None Required	Less than Significant
Climate Change				
11-1 Would the project impede the City or state efforts to meet AB 32 standards for the reduction of GHG emissions?	Both Alternatives	Potentially Significant	MM 11a: The following GHG emission reduction measures shall be implemented: *All residential buildings shall:*	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			• Meet or exceed CALGreen Tier 1 requirements in place at the time of Building Permit issuance. • Be pre-plumbed and structurally engineered for the installation of a complete solar energy system. • Include a tankless water heating system, a whole house ceiling fan, and "Energy Star" appliances (stoves, dishwashers, and any other appliances typically included within the initial installation by the builder). • Include programmable thermostat timers. • Include exterior outlets on all residential buildings to allow the use of electrically-powered landscape equipment. • Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building Permit application for each residence only utilize low flow water fixtures such as low flow toilets, faucets, showers, etc. • Prior to approval of Improvement Plans the applicant shall only show energy efficient lighting for all street, parking, and area lighting associated with the proposed project, including all on-site and off-site lighting. • Pave all parking lots with reflective coatings (albedo = 0.30 or better). This measure is considered feasible if the additional cost is less than 10% of the cost of applying a standard asphalt product. *All non-residential buildings shall:* • Be pre-plumbed and structurally engineered for the installation of a complete solar energy system. • Prior to the issuance of non-residential building permits, the proposed project applicant or its designee shall submit building plans illustrating that the proposed project's non-residential land uses shall achieve an 8% greater building energy efficiency than	

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			required by the current state energy efficiency standards in Title 24, Part 6 of the California Code of Regulations. • Use "Energy Star" rated (or greater) roofing materials. • Use both indoor and outdoor energy efficient lighting that meets or exceeds Title 24 requirements. • Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building Permit application shall show that the proposed project includes a complete solar water heating system. • Include an energy efficient heating system and an air conditioning system that exceeds the SEER ratio by a minimum of two points at the time of building permit issuance. • Only use low flow water fixtures such as low flow toilets, faucets, showers, etc. • Only use programmable thermostat timers. • Prior to approval of Improvement Plans, the applicant shall only show energy efficient lighting for all street, parking, and area lighting associated with the proposed project, including all on-site and off-site lighting. • Include pedestrian-friendly paths and cross walks in all parking lots. • Pave all parking lots with reflective coatings (albedo = 0.30 or better). This measure is considered feasible if the additional cost is less than 10% of the cost of applying a standard asphalt product. • Maximize the amount of drought tolerant landscaping by minimizing the amount of turf in all areas where this option is feasible as well as comply with the City's Model Water Efficient Landscape Ordinance for both residential and commercial land uses.	

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			• Ensure recycling of construction debris and waste through administration by an on-site recycling coordinator and presence of recycling/separation areas.	
11-2 the project conflict with the City's Climate Action Plan?	Both Alternatives	Less than Significant	None Required	Less than Significant
Geology, Soils, and Paleontology				
12-1 Would the project result in exposure to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking or seismic-related ground failure including liquefaction?	Both Alternatives	Less than Significant	None Required	Less than Significant
12-2 Would the project be located on a geologic unit or soil that is unsuitable for the project?	Both Alternatives	Less than Significant	None Required	Less than Significant
12-3 Would the project result in substantial erosion or loss of topsoil during construction activities or following completion?	Both Alternatives	Less than Significant	None Required	Less than Significant
12-4 Would the project substantially alter existing landforms?	Both Alternatives	Less than Significant	None Required	Less than Significant
12-5 Would the project directly or indirectly destroy paleontological resources?	Both Alternatives	Potentially Significant	MM 12a: If paleontological resources are encountered during site remediation or construction, work shall be halted within 100 feet of the resource and the construction contractor must notify the City of Grass Valley Community Development Department of the resource within 24 hours. The project applicant shall retain a qualified paleontologist to evaluate and record the resource and make recommendations for the appropriate treatment of the resource, in consultation with the City. Construction workers shall not collect paleontological resources. Appropriate	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			treatment may include collection and processing of "standard" samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens.	
12-6 Would the project make a considerable contribution to cumulative geology, soil, seismic, or paleontological impacts?	Both Alternatives	Less than Significant	None Required	Less than Significant
Hydrology and Water Quality				
13-1 Would the project substantially degrade surface or groundwater quality?	Both Alternatives	Less than Significant	None Required	Less than Significant
13-2 Would the project cause a substantial increase in rate or volume of runoff leaving the site that would exceed the capacity of existing or planned stormwater drainage systems and result in flooding?	Both Alternatives	Less than Significant	None Required	Less than Significant
13-3 Would the project expose people or structures to a significant hazard of flooding as a result of placing development within a 100-year flood hazard area?	Both Alternatives	Less than Significant	None Required	Less than Significant
13-4 Would the project substantially decrease groundwater recharge, resulting in depressed groundwater levels in the local and/or regional area?	Both Alternatives	No Impact	None Required	No Impact

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
13-5 Would project construction and operation contribute to cumulative violations of water quality standards and/or waste discharge requirements?	Both Alternatives	Less than Significant	None Required	Less than Significant
Public Utilities and Services				
14-1 Would the project result in inadequate water supply and distribution infrastructure requiring construction of new facilities?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-2 Would the project result in inadequate water supply and distribution infrastructure requiring construction of new facilities in the cumulative scenario?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-3 Would the project exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-4 Would the project exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-5 Would the project result in an increased demand for gas or electricity requiring new production facilities?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
14-6 Would the project result in an increased demand for gas or electricity requiring new production facilities in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-7 Would the project require extension of dry utility infrastructure to the site that could cause significant environmental impacts?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-8 Would the project require extension of dry utility infrastructure to the site that could cause significant environmental impacts in the cumulative condition?	Both Alternatives	No impact	None Required	No impact
14-9 Would the project conflict with school district ability to provide educational services or create a substantial increase in school population?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-10 Would the project conflict with school district ability to provide educational services or create a substantial increase in school population in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-11 Would the project result in an increased demand for library services?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-12 Would the project result in an increased demand for library services in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
14-13 Would the project result in a need to construct new or expand existing parks and facilities?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-14 Would the project result in a need to construct new or expand existing parks and facilities in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-15 Would the project result in an increased demand for fire protection and emergency services requiring new facilities or reducing overall fire protection?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-16 Would the project interfere with emergency response or evacuation or increased demand for fire protection and emergency services requiring new facilities or reducing overall fire protection in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-17 Would the project require new law enforcement facilities?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-18 Would the project interfere with the ability to provide law enforcement services?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-19 Would the project contribute to the need for new law enforcement facilities or interfere with law enforcement response in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
14-20 Would the project generate waste of a daily volume that cannot be accommodated by the materials recovery facility?	Both Alternatives	Less than Significant	None Required	Less than Significant
14-21 Would the project generate waste of a daily volume that cannot be accommodated by the materials recovery facility in the cumulative condition?	Both Alternatives	Less than Significant	None Required	Less than Significant
Hazards and Hazardous Materials				
15-1 Would the project create a significant hazard to the public or environment through routine transport, use, or disposal of hazardous materials?	Both Alternatives	Potentially Significant	MM 15a Mitigation Measure 15a: The project applicant shall implement the Removal Action Workplan (RAW) as approved by the California Department of Toxic Substances Control prior to construction of the proposed project. This shall include excavation and off-site disposal for the waste in Area of Concern (AOC) 1, and on-site consolidation and burial of mine waste rock and tailings beneath the proposed commercial development in AOC 2. In AOC 1, vegetation removal must be conducted in the areas to be excavated using hand-held mechanical equipment to minimize disturbance of soil prior to excavation. In AOC 2, prior to implementation of the RAW, DTSC must review and approve site development plans showing the final development layout and waste placement details. In the event that any ground-disturbing activities would occur on the project site prior to the site remediation activities, DTSC must review the proposed ground-disturbing activities and the project proponent/construction contractor would mark remediation areas on the site so the areas may be avoided. After excavation and on-site placement, soil samples must be tested and submitted to DTSC to verify that soil conditions meet the remedial goals defined in the RAW. Throughout all	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
			activities conducted in implementation of the RAW, contractors must adhere to each component of the RAW, including, but not limited to the Site Safety Plan and the Asbestos Dust Mitigation Plan.	
15-2 Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	Both Alternatives	Potentially Significant	MM 15a (see above)	Less than Significant
15-3 Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within 0.25 miles of an existing or proposed school?	Both Alternatives	No Impact	None Required	No Impact
15-4 Would the project be located on a site which is included on a list of hazardous materials sites, and as a result, would create a significant hazard to the public or environment?	Both Alternatives	Potentially Significant	MM 15a (see above)	Less than Significant
15-5 Would the project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and as a result, would result in a safety hazard for people residing or working in the project area?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
15-6 Would the project be located within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the project area	Both Alternatives	Less than Significant	None Required	Less than Significant
15-7 Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Both Alternatives	Less than Significant	None Required	Less than Significant
15-8 Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires?	Both Alternatives	No Impact	None Required	No Impact
15-9 Would the project create or expose residents to potential health hazards?	Both Alternatives	Potentially Significant	MM 15a (see above)	Less than Significant
15-10 Would the project contribute to a significant impact regarding hazards or hazardous materials in the cumulative condition?	Both Alternatives	No Impact	None Required	No Impact
Other CEQA Considerations				
16-1 Would the project cause a temporary increase in wasteful, inefficient, and unnecessary energy consumption due to construction?	Both Alternatives	Less than Significant	None Required	Less than Significant
16-2 Would the project cause a permanent increase in wasteful, inefficient, and unnecessary energy consumption or fail to comply with state and federal energy standards?	Both Alternatives	Less than Significant	None Required	Less than Significant

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Impact Number and Title	Level of Significance before Mitigation		Mitigation Measures	Level of Significance after Mitigation
16-3 Could the proposed project objectives be achieved through a feasible alternative that would substantially reduce the amount of energy required over the life of the project or through a feasible alternative that would include use of alternative fuels or energy systems?	Both Alternatives	Less than Significant	None Required	Less than Significant

CHAPTER 1
INTRODUCTION

1.1 PROJECT BACKGROUND

> An EIR is an informational document which will inform public agency decision-makers and the public generally of the significant environmental effect of the project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project (14 CCR 15121(a)).

This Draft Environmental Impact Report (EIR) is an assessment of the impacts that reasonably could be expected from construction and implementation of the proposed Dorsey Marketplace (proposed project). The project applicant submitted project applications to the City of Grass Valley in 2014 requesting entitlements necessary to allow development of approximately 178,960 square feet of commercial space and 90 apartments on the 26.8-acre project site. Through consultation with City staff, review of technical analyses, and consideration of changes in market conditions, the project applicant has also developed a project alternative that would construct approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and 171 apartments. This Draft EIR considers these two project alternatives at an equal level of detail to provide the City's decision makers with a thorough understanding of the environmental effects under each alternative.

1.2 PURPOSE AND INTENDED USE OF THIS EIR

The City of Grass Valley (City) has prepared this EIR in compliance with the requirements of the California Environmental Quality Act (CEQA) (California Public Resources Code Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), and 15.60.080 of the City of Grass Valley Municipal Code. As provided under CEQA, an EIR is a tool for disclosing to the general public, the local community, responsible agencies, trustee agencies and other interested public agencies, and the City's decision-making bodies (Planning Commission and City Council) the potential significant environmental effects resulting from implementation of the proposed project, as well as possible measures to mitigate those significant effects and alternatives to the proposed project that could avoid impacts.

This EIR is intended to provide the City's decision makers, other agencies, and the public with information that enables them to consider the environmental consequences of the proposed project. The document identifies significant or potentially significant environmental effects ("impacts") and ways in which those impacts can be reduced to less than significant levels, whether through implementation of mitigation measures adopted by the lead agency or through the implementation of an alternative to the project. In a practical sense, an EIR functions as a method of fact-finding, allowing a project applicant, the public, other public agencies, and agency staff an opportunity to

collectively review and evaluate baseline conditions and project impacts through a process of full disclosure. Additionally, this EIR provides the primary source of environmental information for the lead agency to consider when exercising any permitting authority or approval power directly related to implementation of this project.

1.3 TYPE OF EIR

This EIR provides a project-level analysis for the proposed project that focuses primarily on the changes in the environment that would result from construction or operation of the project (14 CCR 15168). This EIR evaluates two project designs, Alternative A and Alternative B, at an equal level of detail.

1.4 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

As required by CEQA, this EIR defines lead, responsible, and trustee agencies. The City is the lead agency for the project because it holds principal responsibility for approving the project. A responsible agency is a public agency other than the lead agency that has discretionary approval over the project. The Central Valley Regional Water Quality Control Board is a responsible agency for this project. A trustee agency is defined as a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the state. For example, the California Department of Fish and Wildlife is a trustee agency with respect to this project and its potential effects on resources regulated under the California Fish and Game Code.

1.5 SCOPE OF THE EIR

The scope of this EIR includes analysis of environmental issues identified as potentially significant in the Notice of Preparation (NOP) and submitted as comments on the NOP (see Appendix A for the NOP and comment letters in response to the NOP). All of the following environmental resource areas are evaluated in this EIR:

- Land Use
- Population and Housing
- Aesthetics
- Biological Resources
- Cultural Resources
- Transportation and Circulation
- Noise
- Air Quality

- Climate Change
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Public Services and Utilities (including recreational facilities)
- Hazards and Hazardous Materials

This EIR evaluates the direct impacts, reasonably foreseeable indirect impacts, and cumulative impacts resulting from planning, construction, and operation of the proposed project using the most current information available and in accordance with the provisions set forth in the CEQA Guidelines. In addition, the EIR recommends potentially feasible mitigation measures, where possible, and project alternatives that would reduce or eliminate significant adverse environmental effects.

The alternatives chapter of the EIR (Chapter 17, Alternatives to the Proposed Project) was prepared in accordance with Section 15126.6 of the CEQA Guidelines. The alternatives analyzed in this EIR in addition to Alternative A and Alternative B are as follows:

- **Alternative 1a: No Project/No Build** This alternative would not develop the project site.
- **Alternative 1b: No Project/Existing Designations** This alternative would develop the project site in accordance with existing land use designations.
- **Alternative 2: Reduced Development** This alternative would reduce the amount of commercial development by about 15% and residential development by 50% in an effort to reduce the project's environmental impacts.
- **Alternative 3: Vertical Mixed Use** The alternative entails a vertical mixed use development with a reduced project footprint that would reduce the amount of commercial development by about 15% and increase residential development by about 15% in an effort to reduce project's environmental impacts.
- **Alternative 4: Tiered Alternative** This Alternative would create a tiered project site, featuring three tiers separated by sloped grades to more closely match the natural grade of the site. It would develop 138,700 sf. of commercial retail space and 90 multifamily apartments.

1.6 ENVIRONMENTAL REVIEW PROCESS

This EIR has been prepared to meet all of the substantive and procedural requirements of CEQA. As the lead agency, the City has primary responsibility for conducting the environmental review and approving or denying the project. The City may use this EIR to approve the proposed project, make findings regarding identified impacts, and, if necessary, adopt a statement of overriding considerations regarding these impacts.

Notice of Preparation

To initiate the EIR process, the City circulated an NOP to solicit agency and public comments on the scope of the environmental analysis to be included in the EIR. The public review period for the NOP began on February 16, 2016 and comments were received through March 17, 2016. The NOP was submitted to the County Clerk and the Governor's Office of Planning and Research State Clearinghouse and posted on the City's website for a 30-day public review period.

A public scoping session was held by the City on March 2, 2016. The purposes of this scoping session were to provide the public and governmental agencies with information on the proposed project and the CEQA process and to give attendees an opportunity to identify environmental issues that should be considered in the EIR. Verbal comments were received from four members of the public at this meeting. Attendees were also invited to mail or email their comment letters to the City during the NOP public review period.

The City received a total of seven comment letters, which included comments from Susan Zanchi (Caltrans), Martin Earles (Caltrans), James Slouber (High Sierra Electronics), Sharaya Souza Luckinbill (Native American Heritage Commission), Stephanie Tadlock (Central Valley Regional Water Quality Control Board) Jonathan Keehn (Wolf Creek Community Alliance), and Joy Waite.

Draft EIR

The Draft EIR is subject to a 45-day public review period. In accordance with Section 15087 of the CEQA Guidelines, the City published a Notice of Availability of the Draft EIR at the same time it submitted a Notice of Completion and copies of the Draft EIR to the State Clearinghouse to initiate the public review period. Comments on the adequacy of the Draft EIR and the City's compliance with CEQA may be submitted in writing to the City, as lead agency, prior to the end of the public review period. During the public review period, the City's Planning Commission will hold a public workshop to receive public comments on the Draft EIR.

Final EIR

Following the close of the public review period for this Draft EIR, the City will prepare a Final EIR, which will include written responses to all comments received during the Draft EIR public review period. The Final EIR will consist of the Draft EIR, comments received during the public review period, responses to those comments, and any revisions to the Draft EIR as a result of agency comments and public comments. The Final EIR must be certified before it can be used as the basis for decision making.

Findings and Statement of Overriding Considerations

Pursuant to CEQA Guidelines, Section 15091, no public agency shall approve or carry out a project for which a certified EIR identifies one or more significant effects of that project unless the public agency makes one or more of the following findings, which must be supported by substantial evidence in the record:

- Changes or alterations have been required in, or incorporated into, the project that avoid or substantially lessen the significant environmental effect as identified in the Final EIR.
- Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.
- Specific economic, legal, social, technological, or other considerations make the mitigation measures or project alternatives identified in the Final EIR unfeasible.

CEQA requires that the City Council first certify the Final EIR before considering whether to approve the proposed project and make the required findings in order to approve the proposed project if the EIR finds that the project would result in a significant environmental impact.

Mitigation Monitoring and Reporting Program

Pursuant to Section 15097 of the CEQA Guidelines, if the City Council approves the proposed project and the EIR identifies significant impacts and mitigation measures, the City must adopt a mitigation monitoring and reporting program (MMRP). The purpose of the MMRP is to ensure compliance with required mitigation during implementation of the project. An MMRP defines the requirements for monitoring and reporting on the implementation of revisions to the project or compliance with conditions of approval that the lead agency has required as mitigation measures to lessen or avoid significant environmental effects. The MMRP will be prepared concurrently with the Final EIR.

EIR Adequacy

The level of detail contained in this EIR is consistent with Section 15151 of the CEQA Guidelines, which states the following:

> 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 the environmental consequences. An evaluation of the environmental effects of a proposed 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 the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure.

1.7 DOCUMENT ORGANIZATION

This EIR has been designed for easy use and reference. To help the reader locate information of particular interest, a brief summary of the contents of each section of the EIR is provided. This report includes nine principal parts:

- **Executive Summary** – Includes a summary of impacts and mitigation measures proposed by the project in a table format.
- **Introduction (Chapter 1)** – Provides a brief background description for the project and description of the EIR, including its purpose, intended use, type, scope, and standards for adequacy; and identification of lead, responsible, and trustee agencies; a description of the environmental review process; and a summary of how the document is organized.
- **Project Description (Chapter 2)** – Includes a discussion of the project site; a statement of project objectives; a general description of the project site's environmental characteristics, including proposed plans for development; and required agency approvals.
- **Environmental Analysis (Chapters 3–15)** – Includes a topic-by-topic analysis of baseline environmental conditions without the project and impacts that would or could result from development of the project. It also identifies potentially feasible mitigation measures that, if adopted, would reduce the level of significance of environmental impacts. The results of field visits, and data collection, and the findings of technical reports are included in the analysis.
- **CEQA-Mandated Sections (Chapter 16)** – Includes a discussion of additional issues required by CEQA, including significant unavoidable adverse impacts, irreversible environmental changes, growth inducement, and energy consumption. The analysis of cumulative impacts is included in the technical analysis contained in Chapter 4.
- **Alternatives to the Proposed Project (Chapter 17)** – Includes an assessment of alternative methods for accomplishing most of the basic objectives of the proposed project while avoiding or substantially lessening at least one significant impact of the project. This assessment provides information for decision makers to make a reasoned choice among potentially feasible alternatives based on comparing the impacts of the alternatives to the impacts of the proposed project.
- **EIR Preparers (Chapter 18)** –Lists the organizations and individuals involved in the preparation of the EIR.
- **Appendices** – Contain reference items and reports providing support and documentation of the analysis performed in the EIR.

CHAPTER 2
PROJECT DESCRIPTION

This chapter defines existing conditions at the proposed Dorsey Marketplace (proposed project) site and the surrounding areas, summarizes existing and proposed land use and zoning designations for the project site, identifies project objectives, provides a detailed description of two project alternatives, and identifies entitlements and approvals that would be required to implement the project. Figures are provided to facilitate a thorough understanding of the project's regional location, site characteristics, and project alternative components.

As discussed in Chapter 1, Introduction, this Draft Environmental Impact Report (EIR) evaluates two project alternatives at an equal level of detail—one that would develop 90 apartments and approximately 178,960 square feet of commercial space (Alternative A) and one that would develop 171 apartments, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space (Alternative B). The description of the two project alternatives included in this chapter sets forth the project characteristics upon which the evaluation of potential impacts in this Draft EIR is based.

2.1 STUDY AREA CHARACTERISTICS

Project Region

The project site is located within the City of Grass Valley (City), in Nevada County, as shown in Figure 2-1, Regional Location. The City encompasses approximately 3,489 acres located along State Route (SR) 49 between Nevada City and the unincorporated community of Alta Sierra. SR 20 is co-located with SR 49 in this location. Census data indicates that the City had a population of 12,860 people in 2010 and the population was projected to reach 12,878 as of 2014 (U.S. Census Bureau 2010). The City's housing stock as of 2010 included 6,637 housing units, with 44% of units being owner-occupied, and the 2010 census identified 5,980 households within the City, with an average of 2.08 persons per household (U.S. Census Bureau 2010).

The City's General Plan notes that in addition to serving the City's residents, the City functions as a "regional economic and cultural center" for as many as 70,000 residents in Nevada County and parts of the three neighboring counties.

The project region is characterized as having varied topography, from nearly flat areas to rolling hills to steep slopes. Land use patterns, road alignments, and economic activity in the region were heavily influenced by the gold rush and the area has supported mining activities intermittently since then.

Project Location

The project site is bordered by SR 20/49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south, and the Grass Valley Terrace Apartments to the east. As shown on Figure 2-2, Project Vicinity Map, the site is located between the SR 20/49 off-ramps for Dorsey Drive and Idaho-Maryland Road. The project would be accessible from Dorsey Drive and from Spring Hill Drive, which accesses Idaho-Maryland Road.

Figure 2-3, Project Site, identifies the 26.8-acre site on an aerial photograph. The site is located at approximately 39°13′41.3″N 121°02′33.8″W. It contains three parcels, designated by Assessor's Parcel Numbers 035-260-062, 035-260-077, and 035-260-064, and the 2.08-acre easement for the planned extension of Spring Hill Drive across the project site.

Prior Uses

The project site was the former location of the Spring Hill Mine, which operated at the site intermittently during the late 1800s and through the 1940s. Abandoned mine features located on site include excavations, pits, remnants of building foundations, stockpiles of mine waste rock, and dry tailings ponds (Appendix H).

Habitats and Vegetation

The project site is characterized as chaparral and coniferous woodland with several developed areas. Five land cover types exist on the project site. The majority of the site consists of whiteleaf manzanita (*Arctostaphylos viscida*) chaparral—this covers 11.10 acres of the site. The site also supports two areas of McNab cypress (*Hesperocyparis macnabiana*) woodland totaling 3.15 acres. The remaining portion of the project site consists of 6.25 acres of ponderosa pine (*Pinus ponderosa*) forest, 0.62 acres of Fremont cottonwood (*Populus fremontii*) woodland, and 5.58 acres of ruderal/developed land. No special-status plants or animals were identified on site; however, the available habitat indicates a low potential for Blainville's horned lizard (*Phrynosoma blainvillii*) and northern goshawk (*Accipiter gentilis*) to be present within the site (Appendix E).

Historic and Archaeological Resources

The natural topography and vegetation within the project site was substantially disturbed as part of operation of the Spring Hill Mine. A records search for the project vicinity completed by the North Central Information Center at California State University Sacramento identified 49 previous studies that have been completed within 1 mile of the project site. Three of these studies covered a least a portion of the project site. These prior studies identified the Spring Hill Mine as a cultural resource. Structures associated with the Spring Hill Mine were once located in the central portion of the site, including the Spring Hill shaft, while grading/clearing activities associated with mine operations

occurred in the western portion of the site. The shaft has been capped with concrete. Several concrete foundations that correspond with the locations of mining features remain on site, but no structures remain on the foundations. The native soils within project site have been substantially disturbed through the site's extended mining history. For this reason there is a very low potential for intact prehistoric cultural resources to be present (Appendix F). However, as discussed further in Chapter 7, Cultural Resources, in consideration of this history, there is a potential that this past mining activity resulted in the deposition of historical deposits and/or features.

Geology and Soils

The site is located in the Sierra Nevada foothills and is within the Foothills Fault System. According to a geological survey conducted in 1996, the Bear Mountain Fault line runs approximately 1 kilometer (0.6 miles) south of the project site. The Nevada City Special Folio identified a quartz vein that runs directly through the center of the project site, which was most likely the resource being sought by the Spring Hill Mining Operation (Appendix J).

As documented in the Geotechnical Report prepared for the project site by Holdrege & Kull (Appendix J):

> surface topography at the site generally slopes toward the south and southwest from a relatively flat-lying area in the northern portion of the site and a knoll in the north central portion of the site. The site elevation ranges from approximately 2550 feet above mean sea level (MSL) in the southwestern portion of the site to approximately 2690 feet above MSL in the northern portion of the site. The site is generally vegetated by pine, manzanita, oak, and cottonwood trees in the southwestern portion of the site. Rock outcrop is present at several locations in the western, northern and eastern portions of the property [Appendix J].

The native topsoil at the project site consists of clay, gravelly clay, and sandy clay. Beneath the clay layer is the bedrock, consisting of diabase and serpentine rock. In the trenches that appear on the site, the diabase and serpentine rocks are moderately to severely weathered. In these trenches, the clay layer over the serpentine and diabase was 2.5 feet thick. As noted in the Removal Action Workplan (RAW) for the site, the Dubakella complex dominated the majority of the site's soil conditions. The site is a part of the ultramafic–mafic "basement" of the Lake Combie complex (Appendix J).

According to the U.S. Department of Agriculture Natural Resources Conservation Service (USDA 2016), the three soil types mapped within the site include Placer diggings; rock outcrop–Dubakella complex, 5%–50% slopes; and Sites loam, 9%–15% slopes. Placer diggings are generally found where historic mining practices have altered the land. Placer diggings consist of numerous minor components. Rock outcrops–Dubakella complex soils consist of ultrabasic rock outcrops in

Dubakella soils on hills and mountains. These are rocky, well-drained soils that often contain serpentinite components. Sites loams consist of well-drained clay loams derived from metabasic residuum weathered from metasedimentary rock (USDA 2016).

Hydrology and Drainage

The project site is located in the Upper Bear hydrologic unit (HUC 18020126). Aquatic features within the site include numerous erosional channels and one depression at the southwestern end of the project site. Based on historical aerial photography and visual inspection during the site survey, these features are only periodically inundated and tend to remain inundated for short periods, depending on the frequency and duration of rainfall events (Appendix E).

Drainage on the project site generally flows from north to south. Stormwater runoff from the site discharges in two main locations: an existing 24-inch pipe that carries runoff to the west and south, generally along the route of SR 20/49, and a rock-lined swale that carries runoff to the east and south (Appendix K).

Hazardous Materials

The Geotechnical Report notes that the map of the Spring Hill Mine depicts buildings, mine shafts, tailing piles, and waste dumps composing the western and central portion of the property (Appendix J).

The property is a brownfield site as defined under the U.S. Environmental Protection Agency's Brownfields Program. Specifically, reuse of the project site "may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant" associated with the prior mining activities on site. Further, the project site has been designated "an area of concern with regard to hazardous waste contamination" by the City of Grass Valley Redevelopment expansion feasibility study. Due to the site's history as a mining site, the site contains arsenic, lead, and mercury associated with mining activity detected in the old tailing ponds (Appendix J). The property owner has prepared a Remedial Action Workplan (RAW) to document the presence of hazardous materials within the project site, the areas where soil will be excavated and disposed of offsite, and the areas where soil will be covered with clean fill to prevent release of hazardous materials after project construction is complete. The RAW has been approved by the California Department of Toxic Substances Control (Appendix J).

The Geotechnical Report notes that the project site is located within the Foothills Fault System, which is "designated as a Type C fault zone, with low seismicity and a low rate of recurrence" and that the site is not located within an Alquist-Priolo active fault zone (Appendix J).

Additionally, areas of the site could contain naturally occurring asbestos, which could pose health hazards if it is disturbed during or following construction. Refer to Chapter 10, Air Quality, and Chapter 15, Hazards and Hazardous Materials, for additional discussion of the potential for release of naturally occurring asbestos and associated mitigation measures to avoid associated adverse health effects.

Adjacent Land Uses

SR 20/49 runs parallel to the project site along the site's western boundary. There are three self-storage facilities to the south (Old Barn, Ernie's, and Springhill), as well as Bub Enterprises Inc. To the southeast, there is Gold Country Gymnasium and Warm's Yoga. To the north of this and east of the project site, separated by open space, are the Grass Valley Terrace Apartments. To the north of the proposed project, on the other side of Dorsey Drive, are the Springhill Garden Apartments. Additionally, across SR 20/49 there are sensitive populations in the Golden Empire Nursing and Rehab Center and the Sierra Nevada Memorial Hospital.

2.2 GENERAL PLAN AND ZONING DESIGNATIONS

Project Site

The project site is currently designated under the General Plan as Business Park and zoned Corporate Business Park.

Under either Alternative A or Alternative B, the project would require a General Plan Amendment and rezone to change land currently designated for Business Park to Commercial and Residential Urban High Density and a rezone from Corporate Business Park to Commercial (C-2) and Multiple Dwelling Residential (R-3). Chapter 3, Land Use, of this EIR evaluates the proposed project's consistency with applicable 2020 General Plan policies and zoning requirements, consistency with other relevant City planning documents, and compatibility with adjacent land uses.

Adjacent Parcels

The SR 20/49 right-of-way borders the site on the west. Properties west of the highway are designated Institutional/Non-Governmental and Office/Professional. Properties to the north and east of the project site support apartment complexes and a mobile home community; these areas are designated for residential land uses as Urban Medium Density under the General Plan. Properties to the south of the project site are designated Manufacturing/Industrial.

2.3 PROJECT OBJECTIVES

The project applicant has set forth the following objectives for the proposed Dorsey Marketplace project:

- Create a high-quality mixed-use infill project combining residential, retail, and community uses through the re-use of an existing brownfield site consistent with the City's plans for the Core Priority Development Area and its Economic Strategic Plan.
- Develop an infill site adjoining and proximate to existing infrastructure, high density residential, affordable and senior housing, Sierra Nevada Memorial Hospital and medical offices, and existing businesses along Idaho-Maryland Road.
- Construct the Spring Hill Drive connector between Dorsey Drive and Idaho Maryland Road, consistent with the City's General Plan.
- Incorporate safe and convenient walking paths, access to public transit, enhanced bicycle circulation.
- Redevelop the property to allow for the environmental clean-up of a brownfield former mining site.
- Develop the project site in such a way as to make a positive contribution to the City's satisfaction of its Regional Housing Needs Allocation through the creation of new quality high-density market-rate housing.
- Create new retail uses that will capture more local sales tax dollars, reducing the amount of sales tax leakage from City and County residents shopping in other jurisdictions, and reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions associated with shopping destinations outside the area.
- Develop a retail mixed use center that incorporates quality design, local art and community amenities that delivers a lifestyle oriented experience.
- Develop a diverse mix of retail uses that allows a single vehicle trip to the project site verses multiple vehicle trips to a number of retail locations to enjoy a similar shopping experience, thereby reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions.
- Develop a mixed-use project that includes high-density residential uses to reduce the need for vehicular trips to satisfy resident retail needs.

2.4 DESCRIPTION OF PROJECT ALTERNATIVE A

Alternative A would accommodate development of approximately 178,960 square feet of commercial land uses and 90 residential apartments, as shown in Figure 2-4, Alternative A Site Plan.

Land Use

Alternative A would require a General Plan Amendment and rezone to change the land use designation on the site from Business Park (26.8 acres) to Commercial (21 acres) and Residential Urban High Density (5.8 acres). This alternative would also require a rezone from Corporate Business Park to Commercial (C-2) and Multiple Dwelling Residential (R-3). The existing and proposed General Plan and zoning designations are discussed further in Chapter 3.

The Alternative A site plan shows a total of 178,960 square feet for commercial uses. This component of the project includes four major shops (with sizes ranging between 20,000 and 40,000 square feet), six smaller shops (with sizes between 4,000 and 8,560 square feet), three pads for drive-through services such as fast-food and financial institutions (sizes between 3,300 and 4,100 square feet) and one 6,000-sqare-foot pad that would support food service without a drive-through. The six smaller shops are proposed in the northern and eastern portions of the site, with three of the four major shops proposed for the southwestern portion and one major shop for the northern portion. The four pads would generally be located in the northeastern portion of the site near the project site entrance on Dorsey Drive. Parking would be placed in the central and western portions of the site and bus shelters would be provided on both sides of the central drive adjacent to Shop E.

The dwelling units would be offered as market-rate rental units and are expected to include 50 two-bedroom units and 20 each of the one- and three-bedroom layouts. The units would range in size from 1,013 to 1,600 square feet. They would be constructed as two-story and three-story buildings in the southeastern corner of the project site. This area would also include an apartment clubhouse and pool and tot lot park area. A small dog park is also proposed along the eastern site boundary, south of proposed Pad 4.

Circulation

Vehicular access to the site would come from Dorsey Drive on the north and Spring Hill Drive on the south. Vehicles would circulate through the project site using the central spine road, which would provide access to the various parking areas on site. The central spine road would include striped bicycle lanes on each side of the street and bus shelters near Shop E.

Pedestrian plazas would be created at the front of all of the shop areas, connected by wide, landscaped walkways that cross the parking area. A total of 927 parking spaces are proposed under Alternative A, including 746 for the commercial area and 180 for the residential area. The project would also provide racks throughout the site to accommodate 72 bicycles. In the commercial parking area, the project would include preferential parking for low emission vehicles and provide electric vehicle charging stations equal to 6% of the total number of parking spaced, consistent with the California Green Energy Code requirements. Of the residential parking spaces, 94 would be in covered parking stalls, and the remaining 86 would be uncovered.

Hazards and Hazardous Materials Remediation

Due to the prior mining activities on site, there are quite a few constituents of potential concern that could negatively affect human and environmental health if levels are too high. Under either alternative, the project would include implementation of the RAW that has been approved by the California Department of Toxic Substances Control. The constituents of potential concern at this site include arsenic, lead, antimony, copper, mercury, vanadium, and naturally occurring asbestos. There are three areas of concern (AOCs) on the Spring Hill site, two of which are listed as areas for remediation. AOC 1, the former mill area, contains highest levels of arsenic and lead contamination. The RAW dictates that 1,700 cubic yards, or 150 truckloads, of contaminated soil and mine waste should be removed. AOC 2, the remaining mine waste area located west of the former mill site, contains levels of contamination that exceed the maximum public health levels but are less than those of AOC 1. Therefore, the RAW determined that it would be appropriate to bury this AOC and use the site improvements to cap the contaminants on site. There is about 64,000 yards of contaminated soil and mine waste to be buried—covered with 10 feet of clean soil and then capped with either the foundations of a building or a parking lot. Additionally, there would be restrictions on land use in order to ensure that the contaminated soil is not disturbed (Appendix J).

Drainage and Grading

Following implementation of the RAW, additional grading would be necessary to implement the proposed project. Excluding the soil removal as a part of the hazard remediation plan, it is expected that the cut and fill would balance and no soil import or export would be necessary. The Alternative A site plan shows that up to 40 feet of cut is proposed in the central portion of the property and up to 60 feet of fill in the southwestern portion of the property. Several rock retaining walls would be constructed in various locations around the site perimeter, with the longest wall being placed near the southern site boundary west of Springhill Drive.

Because the site is in an area of naturally occurring asbestos, the Northern Sierra Air Quality Management District would require preparation and implementation of an Asbestos Dust Mitigation Plan for either alternative, under the Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operation, which is monitored by the California Environmental Protection Agency's Air Resources Board Regulation 93105. Refer to Chapter 15 for additional discussion of the potential for release of naturally occurring asbestos during grading.

The project would incorporate Low Impact Development (LID) measures to protect water quality and reduce stormwater runoff. This would include construction of stormwater collection and detention features within the site, such as grassy swales, detention basins, detached downspouts,

and landscape strips, as discussed in Chapter 13, Hydrology and Water Quality, and shown in the site plan. Stormwater would be routed through pipes and drainage swales towards the southern site boundary where it would exit the site near the Old Barn Self Storage through an existing concrete weir and into an existing below-grade storm drain pipe.

Public Spaces and Amenities

Recreational amenities included as part of the apartment complex in the Alternative A include a 3,260-square-foot clubhouse with a fitness center and community meeting room and pool as well as a tot lot park area. Proposed public facilities include a dog park along the eastern property boundary and pedestrian plazas north of Shops C, D, and E and southeast of Shop A. These plazas are proposed to include outdoor seating and feature local art and history exhibits.

Easements

There is an existing offer of dedication for the planned alignment of Spring Hill Drive through the project site, consistent with the City of Grass Valley General Plan. This offer would be abandoned and replaced with the proposed alignment of Spring Hill Drive.

Project Phasing

Construction of the residential and non-residential space within the project site would occur based on market demands. It is expected that all site preparation and grading would occur in a single season and while building pads and individual structures may be constructed over a period of a few years. However, for the purposes of the impact analysis, the project is assumed to be constructed in a single construction phase. Initial activities would include site preparation (removing vegetation and installing water quality protection measures) and rough grading. The rough grading would require approximately 16 weeks to implement the RAW and prepare the site for building construction. Installation of wet utilities, storm drainage infrastructure, and dry utilities would begin midway through the rough grading phase and end approximately 4 weeks after rough grading is complete. This would be followed by approximately 3 weeks of final grading, 4 weeks of laying base rock, and 2 weeks of paving. Building construction is expected to occur over approximately 26 weeks and architectural coatings would be applied over a period of 5 weeks.

Off-Site Improvements

The Traffic Impact Analysis prepared for the project (Appendix G) found that the Alternative A would result in significant impacts to several off-site intersections. As discussed in Chapter 8, Transportation, the project would be required to contribute fair-share funding for improvements at several of these intersections, stripe a new right-turn lane within the existing pavement at one

intersection, and construct the off-site improvements consisting of installation of traffic signals at the intersections of Idaho-Maryland Road at the SR 20/49 northbound on ramps, Dorsey Drive at Catherine Lane, Dorsey Drive at Sutton Way, and Bennett Street and SR 20/49 southbound off ramps/Tinloy Street.

Based on the analysis of the future wastewater flows in the City's wastewater collection system (Appendix K), the project would contribute to the need to upsize one of the existing 18-inch twin sewer lines that pass under SR 20/49 to 24 inches or to add a third line. The need for increasing the capacity in this portion of the City's sewage infrastructure is identified in the City's Wastewater System Master Plan (City of Grass Valley 2016). As discussed further in Chapter 14, Public Services and Utilities, the proposed project would be required to contribute a fair-share amount to this future wastewater system capacity increase but would not be required to construct any off-site wastewater system improvements.

Utilities

Provision of utility services for Dorsey Marketplace would be the same under each alternative. The City would provide sewage conveyance and treatment, water supply, and stormwater drainage, while gas and electric service would be provided by Pacific Gas & Electric.

2.5 DESCRIPTION OF PROJECT ALTERANTIVE B

Alternative B, shown in Figure 2-5, Alternative B Site Plan, relies on essentially the same footprint as the Alternative A, but reduces the amount of retail and commercial uses, increases the number of residential units and adds an office space component. Described as follows, Alternative B would accommodate development of approximately 171 residential apartments 104,350 square feet of commercial land uses, and 8,500 square feet of office space.

Land Use

Alternative B would require a General Plan Amendment and rezone to change the land use designation on the site from Business Park (26.8 acres) to Commercial (14.5 acres) and Residential Urban High Density (12.3 acres). It would also require a rezone from Corporate Business Park to 14.5 acres of Commercial (C-2) and 12.3 acres of Multiple Dwelling Residential (R-3). The existing and proposed General Plan and zoning designations are discussed further in Chapter 3.

The Alternative B site plan shows a total of 104,350 square feet for commercial uses with two major shops (35,000 and 21,500 square feet), five smaller shops (with sizes between 4,000 and 8,500 square feet), three pads for drive-through services such as fast-food and financial institutions (sizes between 3,200 and 4,200 square feet) and one 6,000-sqare-foot pad that would support food service without a drive-through. The two major shops and two of the five

small shops are proposed in the northwestern portion of the site adjacent to the SR 20/49 off-ramp. The other three small shops would be located in the eastern portion of the site adjacent to the central spine road. As in Alternative A, the four pads would generally be located in the northeastern portion of the site near the project site entrance on Dorsey Drive. Parking would be placed in the central and western portions of the site and bus shelters would be provided on both sides of the central drive adjacent to Shop E.

This alternative would construct 171 residential apartments that would be offered as market-rate rental units and are expected to include 95 two-bedroom units and 38 each of the one- and three-bedroom layouts. The units would range in size from 1,013 to 1,600 square feet. They would be constructed as two-story and three-story buildings in the southern portion of the project site. One of the buildings would include approximately 50% apartment space and 50% office space, providing 8,500 square feet of office space near the center of the project site.

As in Alternative A, Alternative B would also include an apartment clubhouse and pool and tot lot park area. A small dog park is also proposed along the eastern site boundary, south of proposed Pad 4.

Circulation

The provisions for vehicular access to and across the site would be the same as under the Commercial/Residential Alternative. Vehicles would circulate through the project site using the central spine road, which would provide access to the various parking areas on site and would connect to Dorsey Drive on the north and Spring Hill Drive on the south. The central spine road would include striped bicycle lanes on each side of the street and bus shelters near Shop E.

Pedestrian plazas would be created at the front of all of the shop areas, connected by wide, landscaped walkways that cross the parking area. A total of 962 parking spaces are proposed under the Commercial/Residential Alternative, including 538 for the commercial area, 29 for the office area, and 395 for the residential area. The project would also provide racks throughout the site to accommodate 57 bicycles. In the commercial parking area, the project would include preferential parking for low emission vehicles and electric-vehicle charging stations. Of the residential parking spaces, 304 would be in covered parking stalls, and the remaining 74 would be uncovered.

Hazards and Hazardous Materials Remediation

Alternative B would include implementation of the RAW that has been approved by the California Department of Toxic Substances Control to remediate potential health hazards associated with the presence of arsenic, lead, antimony, copper, mercury, vanadium, and naturally occurring asbestos at the project site. Refer to previous Section 2.4 and Chapter 15 for more details.

Drainage and Grading

Alternative B would also require substantial grading to implement the project. Site grading and placement of retaining walls would be similar under both alternatives. Additionally, Section 2.4 discusses the need for preparation and implementation of an Asbestos Dust Mitigation Plan for either alternative. This is discussed in more detail in Chapter 15. Further, as noted in Section 2.4 and discussed in Chapter 13 under either alternative, the project would incorporate LID measures to protect water quality and reduce stormwater runoff. Stormwater drainage would be handled similarly under both alternatives, with the use of vegetated swales and below-grade stormwater drainage pipes conveying drainage to an existing stormwater drain along the southern boundary of the site.

Public Spaces and Amenities

Recreational amenities included as part of the apartment complex in Alternative B include a 3,260-square-foot clubhouse with a fitness center and community meeting room and pool as well as a tot lot park area. Proposed public facilities include a dog park along the eastern property boundary and pedestrian plazas surrounding Shops C, D, and E and in front of the two major shops and two smaller shops in the northern portion of the site. These plazas are proposed to include outdoor seating and feature local art and history exhibits.

Easements

The existing offer of dedication for Spring Hill Drive through the project site would be abandoned and replaced with the proposed alignment of Spring Hill Drive.

Project Phasing

Construction of Alternative B would require a similar schedule as Alternative A, beginning with site preparation and rough grading; installation of wet utilities, storm drainage infrastructure, and dry utilities; final grading; laying base rock; and paving.

Off-Site Improvements

The Traffic Impact Analysis prepared for the project (Appendix G) found that Alternative B would result in significant impacts to off-site intersections. As discussed in Chapter 8, the project would be required to contribute fair-share funding to installation of a traffic signal, but would not be required to construct any off-site improvements.

Based on the analysis of the future wastewater flows in the City's wastewater collection system (Appendix K), the project would contribute to the need to upsize one of the existing 18-inch twin sewer lines that pass under SR 20/49 to 24 inches or to add a third line. The need for

increasing the capacity in this portion of the City's sewage infrastructure is identified in the City's Wastewater System Master Plan (City of Grass Valley 2016). As discussed further in Chapter 14, the proposed project would be required to contribute a fair-share amount to this future wastewater system capacity increase but would not be required to construct any off-site wastewater system improvements.

Utilities

Provision of utility services for Dorsey Marketplace would be the same under each alternative. The City would provide sewage conveyance and treatment, water supply, and stormwater drainage, while gas and electric service would be provided by Pacific Gas & Electric.

2.6 PROJECT ALTERANTIVE SUMMARY COMPARISON

Table 2-1 compares the individual components of the two project alternatives.

Table 2-1
Summary of Project Components in Alternatives A and B

Project Component	Alternative A: Commercial/Residential	Alternative B: Commercial/Office/Residential
Commercial/Retail	4 Major Shops • 20,000–40,000 sf 6 smaller shops • 4,000–8,560 sf 4 pads • 3,300–6,000 sf	2 Major Shops • 21,500–35,000 sf 5 smaller shops • 4,000–8,500 sf 4 pads • 3,200 – 6,000 sf
Office	0	8,500 sf
Residential	20 one-bedroom units 50 two-bedroom units 20 three-bedroom units	38 one-bedroom units 95 two-bedroom units 38 three-bedroom units
Clubhouse	3,260 sf	3,260 sf
Other private recreation (for apartments)	Tot-lot Pool	Tot-lot Pool
Public recreation	Dog park	Dog park
Parking	746 retail/commercial 180 residential	538 retail/commercial 395 residential 29 office
Bicycle parking	72	57
Total sf/units	178,960-sf retail/commercial 90 dwelling units	104,350-sf retail/commercial 8,500-sf office 171 dwelling units

Note: sf = square feet

2.7 ENTITLEMENTS AND REQUIRED APPROVALS

To authorize the proposed project under either Alternative A or Alternative B to proceed, the City would need to grant the following entitlements:

- General Plan Amendment to change the land use designation from Business Park to Commercial and Urban High Density Residential
- Rezoning from current zoning of Commercial Business Park to Central Business District (C-2) and Multiple Dwelling Residential (R-3)
- Development Review Permit for the mixed-use project
- Use permit for the restaurants with drive-through service
- Lot Line Adjustment

In addition, the project would also require the following approvals. The applicable agencies may rely on this EIR in considering whether to grant the requested approvals.

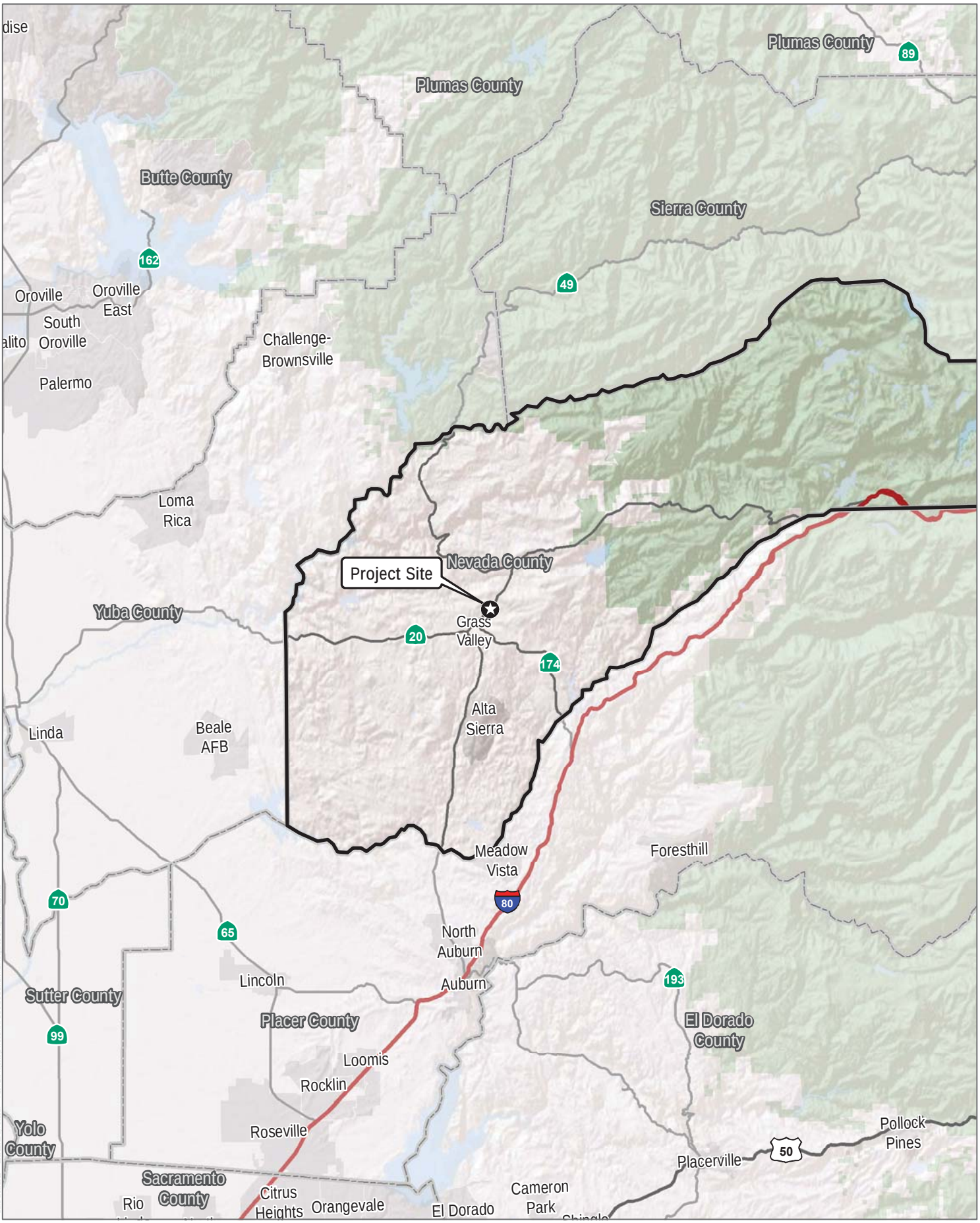
- The California Department of Transportation (Caltrans) would be requested to issue an encroachment permit to authorize construction of improvements within the Caltrans right-of-way.
- Impacts to the seasonal wetland and intermittent drainage in the southern portion of the project site would require authorization from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act, water quality certification from the Central Valley Regional Water Quality Control Board under section 401 of the Clean Water Act, and a streambed alteration agreement from the California Department of Fish and Wildlife.
- Northern Sierra Air Quality Management District would be requested to issue an Authority to Construct and a Permit to Operate for any on-site business that would install a stationary source of air pollution, such as typical commercial kitchen equipment.

2.8 REFERENCES CITED

City of Grass Valley. 2016. *Wastewater System Master Plan*. Prepared by Stantec on behalf of the City of Grass Valley. August 23, 2016.

U.S. Census Bureau. 2010. "Quick Facts: Grass Valley City, California." http://www.census.gov/quickfacts/table/PST045215/0630798,06.

USDA (U.S. Department of Agriculture). 2016. Web Soil Survey. USDA Natural Resources Conservation Service, Soil Survey Staff. http://websoilsurvey.nrcs.usda.gov/.



SOURCE: ESRI 2018

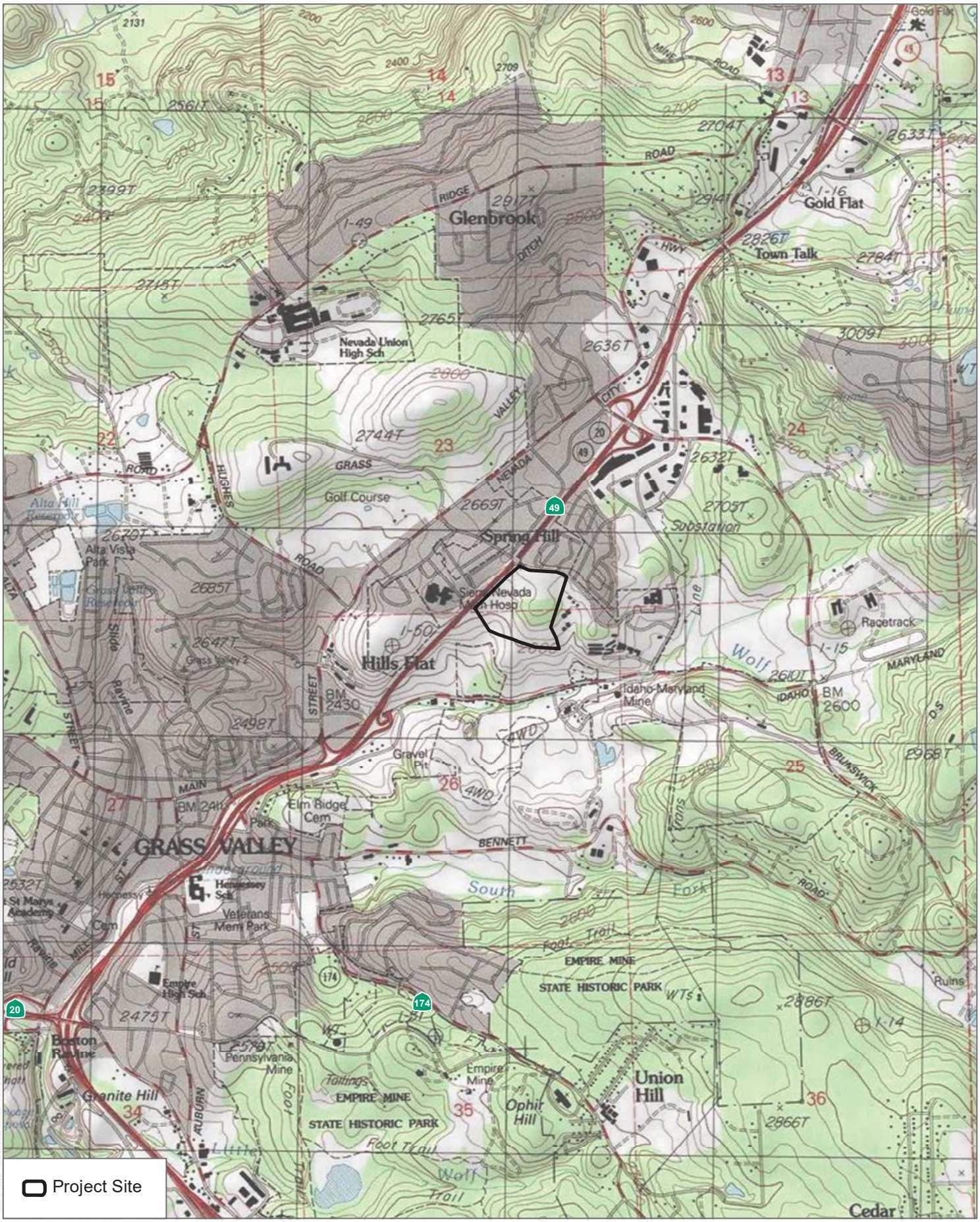
DUDEK

0 21,000 42,000 Feet

FIGURE 2-1

Regiona Location

Dorsey Marketplace EIR



SOURCE: USGS Topo 7.5-Minute Grass Valley Quadrangle.

DUDEK

0 1,000 2,000 Feet

FIGURE 2-2

Project Vicinity

Dorsey Marketplace EIR

SOURCE: USDA 2016

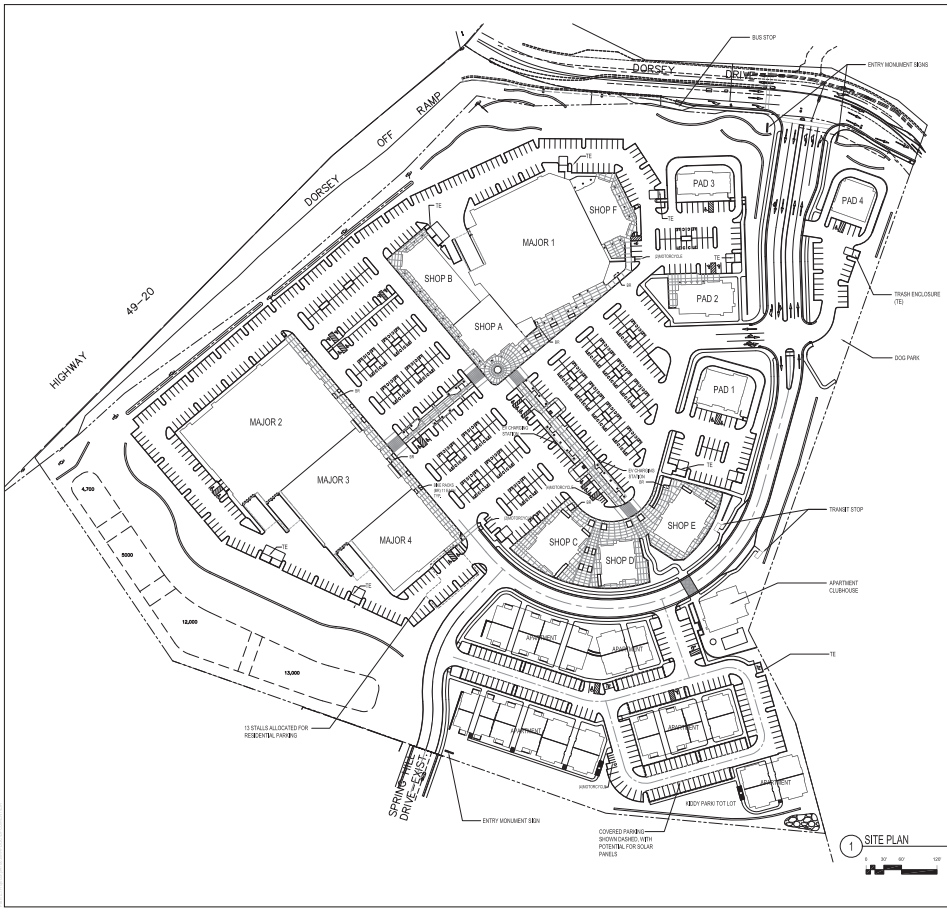
DUDEK

0 150 300 Feet

FIGURE 2-3

Project Site

Dorsey Marketplace EIR



BUILDING AREA DATA:

RETAIL / COMMERCIAL	
MAJOR 1	40,000 SF
MAJOR 2	38,000 SF
MAJOR 3	25,000 SF
MAJOR 4	20,000 SF
SHOP A	7,600 SF
SHOP B	8,560 SF
SHOP C	6,400 SF
SHOP D	4,000 SF
SHOP E	6,400 SF
SHOP F	6,100 SF
PAD 1	4,100 SF
PAD 2	6,000 SF
PAD 3	3,300 SF
PAD 4	3,500 SF
TOTAL RETAIL / COMMERCIAL AREA:	178,960 SF
AREA OF APARTMENT CLUBHOUSE:	3,260 SF + -
RESIDENTIAL	
3 BEDROOM APARTMENTS: (1600SF +- PER UNIT)	20 UNITS
2 BEDROOM APARTMENTS: (1340 SF +- PER UNIT)	50 UNITS
1 BEDROOM APARTMENTS: (1013 SF +- PER UNIT)	20 UNITS
TOTAL NUMBER OF APARTMENTS	90 UNITS

PARKING DATA:

RETAIL / COMMERCIAL	
REQUIRED PARKING COMMERCIAL BEFORE BICYCLE SUBSTITUTION (4/1000) :	716 STALLS
** REQUIRED PARKING COMMERCIAL AFTER BICYCLE SUBSTITUTION :	707 STALLS
***REQUIRED PARKING COMMERCIAL AFTER MOTORCYCLE SUBSTITUTION :	704 STALLS
REQUIRED ACCESSIBLE PARKING	18 STALLS
PARKING PROVIDED COMMERCIAL:	746
- STANDARD STALLS PROVIDED:	632 STALLS
- COMPACT STALLS PROVIDED:	81 STALLS 11% < 20% ALLOWED, THUS OK)
- ACCESSIBLE PARKING (2% OF TOTAL REQ.):	26 STALLS (REQUIRED IS 2% OF TOTAL = 15 STALLS) 26 STALLS > 15 STALLS, THUS OK)
- MOTORCYCLE ***	8 SPACES
- LOW EMITTING VEHICLES : (AS REQUIRED BY CAL GREEN STRIPED AND INDICATED ON SITE PLAN AS 'LE. PART OF TOTAL STANDARD STALLS)	74 STALLS
RESIDENTIAL	
PROVIDED PARKING RESIDENTIAL (2 STALLS/UNIT)	
- STANDARD STALLS PROVIDED:	168 STALLS
- COMPACT STALLS PROVIDED:	1 STALL
- ACCESSIBLE PARKING PROVIDED:	7 STALLS (REQUIRED IS 2% OF TOTAL = 4 STALLS)
- MOTORCYCLE (167 STALLS IMMEDIATELY ADJACENT TO APARTMENT BUILDINGS , 13 STALLS ARE LOCATED ON SOUTH SIDE OF MAJOR 4, SEE SITE PLAN FOR LOCATION	4 SPACES
APARTMENT CLUBHOUSE	0 STALLS (AMENITY TO APARTMENTS)
TOTAL PARKING PROVIDED ON SITE:	927 STALLS
OTHER PARKING:	
BICYCLE RACKS: (10% OF 716 STALLS)	72 RACKS
** SUBSTITUTION FOR AUTOMOBILE PARKING IS (1) STALL PER 8 BICYCLE RACKS, UP TO 10% MAXIMUM OF REQUIRED VEHICLE SPACES	** 716 X 10% = 72 / 8 = 9 STALL REDUCTION
MOTORCYCLE SPACES ALLOWED:	$\frac{1}{25}$, UP TO 10% MAX. OF REQUIRED VEHICLES
***SUBSTITUTION FOR AUTOMOBILE PARKING IS (1) SPACE PER 25 AUTO SPACES, UP TO 10% MAXIMUM OF REQUIRED VEHICLE SPACE	***716 X 10% = 72 SPACES 72 / 25 = 3 SPACE REDUCTION (12 MOTORCYCLE SPACES PROVIDED , 72 ALLOWED, THUS "OK")

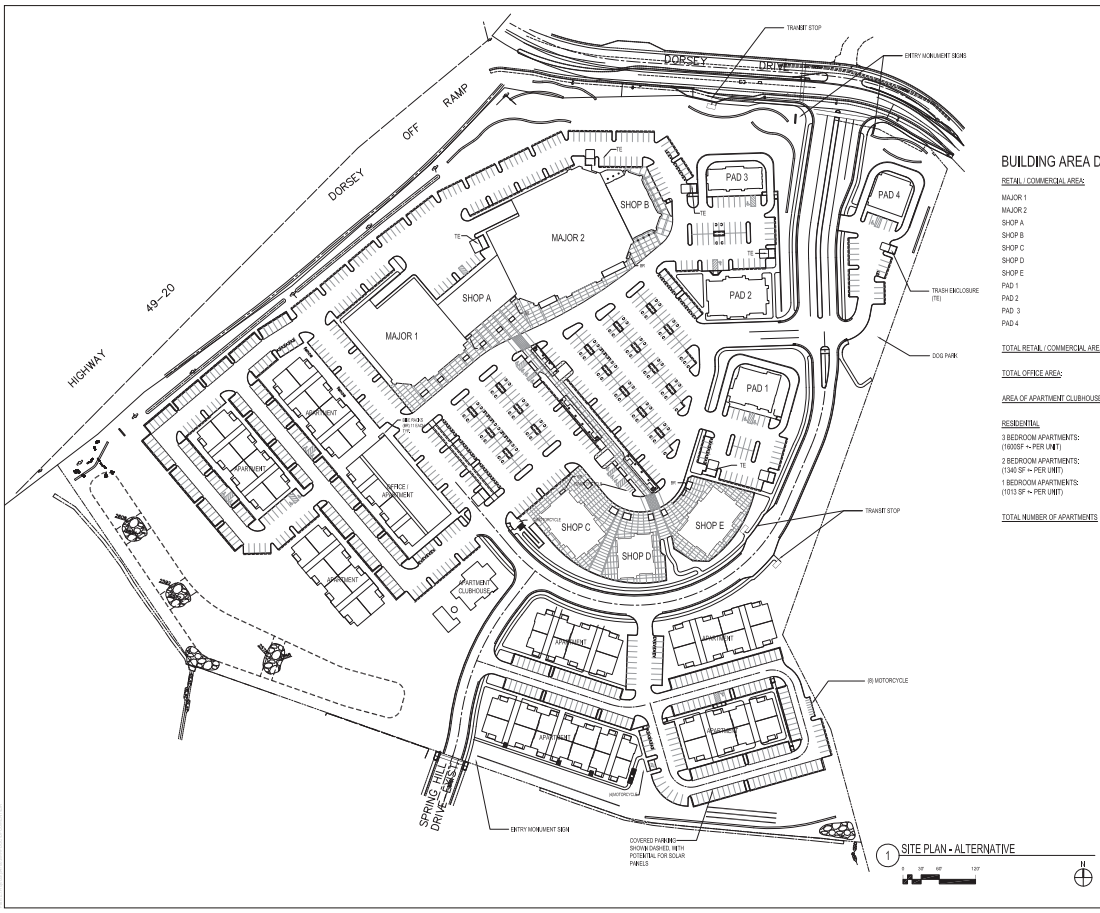
SOURCE: Williams + Paddon 2017

FIGURE 2-4

Alternative A Site Plan

Dorsey Marketplace EIR

DUDEK



1 SITE PLAN - ALTERNATIVE

0 30' 60' 120'

BUILDING AREA DATA:

RETAIL / COMMERCIAL AREA:	
MAJOR 1	21,500 SF
MAJOR 2	35,000 SF
SHOP A	8,500 SF
SHOP B	5,650 SF
SHOP C	6,400 SF
SHOP D	4,000 SF
SHOP E	6,400 SF
PAD 1	4,200 SF
PAD 2	6,000 SF
PAD 3	3,200 SF
PAD 4	3,500 SF
TOTAL RETAIL / COMMERCIAL AREA:	104,350 SF
TOTAL OFFICE AREA:	8,500 SF
AREA OF APARTMENT CLUBHOUSE:	3,260 SF + -
RESIDENTIAL:	
3 BEDROOM APARTMENTS: (1600SF +- PER UNIT)	38 UNITS
2 BEDROOM APARTMENTS: (1340 SF +- PER UNIT)	95 UNITS
1 BEDROOM APARTMENTS: (1013 SF +- PER UNIT)	38 UNITS
TOTAL NUMBER OF APARTMENTS	171 UNITS

PARKING DATA:

PARKING REQUIRED:	
REQUIRED PARKING COMMERCIAL BEFORE BICYCLE SUBSTITUTION (4/1000) :	417 STALLS
** REQUIRED PARKING COMMERCIAL AFTER BICYCLE SUBSTITUTION :	412 STALLS
***REQUIRED PARKING COMMERCIAL AFTER MOTORCYCLE SUBSTITUTION :	410 STALLS
REQUIRED ACCESSIBLE PARKING (2% OF TOTAL PARKING PROVIDED)	12 STALLS
REQUIRED BIKE PARKING (10% OF TOTAL PARKING PROVIDED)	0.1 * 568 = 57 BIKE RACKS
REQ. CLEAN AIR / VAN POOL / EV : (AS REQUIRED BY CAL GREEN)	0.08 * 568 = 46 STALLS
REQ. FUTURE ELECTRIC VEHICLE CHARGING STATION: (AS REQ. BY CAL GREEN)	0.06 * 568 = 35 STALLS
REQUIRED OFFICE PARKING (1/400)	22 STALLS
RETAIL / COMMERCIAL PARKING PROVIDED :	
- STANDARD STALLS PROVIDED:	447 STALLS
- COMPACT STALLS PROVIDED:	77 STALLS (13% < 20% ALLOWED, THUS OK)
- ACCESSIBLE PARKING:	14 STALLS (12 > 15 STALLS, THUS OK)
- MOTORCYCLE ***	5 SPACES
- BIKE RACKS	57 BIKE RACKS
- CLEAN AIR / VAN POOL / EV : (STRIPED AND INDICATED ON SITE PLAN AS 'LE', PART OF TOTAL STANDARD STALLS)	46 STALLS
- FUTURE ELECTRIC VEHICLE CHARGING: (INDICATED ON SITE PLAN AS 'EV' PART OF 'LE' STALL COUNT)	35 STALLS
RESIDENTIAL PARKING PROVIDED:	
- STANDARD STALLS (COVERED) PROVIDED:	304 STALLS
- STANDARD STALLS (UNCOVERED) PROVIDED:	74 STALLS
- ACCESSIBLE PARKING PROVIDED:	10 STALLS (REQ.IS 2% OF TOTAL = 8 STALLS)
- MOTORCYCLE	7 SPACES
- FUTURE ELECTRIC VEHICLE CHARGING (INDICATED ON SITE PLAN AS 'EV' PART OF STANDARD STALL COUNT)	12 STALLS (3% OF PARKING PROVIDED)
OFFICE PARKING PROVIDED:	
- STANDARD STALLS	26 STALLS
- ACCESSIBLE PARKING PROVIDED:	1 STALL
OTHER PARKING:	
** SUBSTITUTION FOR AUTOMOBILE PARKING IS (1) STALL PER 8 BICYCLE RACKS, UP TO 10% MAXIMUM OF REQUIRED VEHICLE SPACES	** 417 X 10% = 41 / 8 = 5 STALL REDUCTION
MOTORCYCLE SPACES ALLOWED:	$\frac{1}{25}$, UP TO 10% MAX. OF REQUIRED VEHICLES
***SUBSTITUTION FOR AUTOMOBILE PARKING IS (1) SPACE PER 25 MOTORCYCLE SPACES, UP TO 10% MAXIMUM OF REQUIRED VEHICLE SPACE	***417 X 10% = 41 SPACES 41/25 = 2 SPACE REDUCTION (5 MOTORCYCLE SPACES PROVIDED , 41 ALLOWED, THUS "OK")

SOURCE: Williams + Paddon 2017

FIGURE 2-5

Alternative B Site Plan

Dorsey Marketplace EIR

DUDEK

CHAPTER 3
LAND USE

This section addresses the potential land use impacts associated with the proposed Dorsey Marketplace Project (proposed project). The proposed project would change portions of the land use and zoning designations on approximately 26.8 acres in the City of Grass Valley (City). Alternative A would provide for up to 90 multifamily residential units and approximately 178,960 square feet of commercial space. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space. This section evaluates potential impacts of each alternative related to changing the existing and planned land uses for the site, as well as the compatibility of the proposed development with surrounding land uses.

One comment pertaining land use concerns was received in response to the Notice of Preparation. The comment questioned the proposed project's economic and community character-related impacts on the historic downtowns of Grass Valley and Nevada City. The Notice of Preparation and comments received are included in Appendix A.

3.1 ENVIRONMENTAL SETTING

The project site is located within the City of Grass Valley (City), in Nevada County. The City's General Plan notes that in addition to serving the City's residents, the City functions as a "regional economic and cultural center" for as many as 70,000 residents in Nevada County and parts of the three neighboring counties. Although the City has only 12% of the County's total housing stock, it provides about 55% of Nevada County's multifamily housing units. Nearly 60% of City residents rent. About one-quarter of the City remains undeveloped. Some of this land, however, is so constrained by natural factors that development may never occur. The General Plan expects infill development to accommodate about one-third of new housing in the Planning Area, including the City in the next 20 years (City of Grass Valley 1999).

Project Site

The project site is bordered by State Route (SR) 20/49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south and the Grass Valley Terrace Apartments to the east. As shown in Figure 2-2, Project Vicinity Map, in Chapter 2, Project Description, the site is located between the SR 20/49 off-ramps for Dorsey Drive and Idaho-Maryland Road. The project would be accessible from Dorsey Drive and from Spring Hill Drive, which accesses Idaho-Maryland Road. Figure 2-3, Project Site, identifies the 26.8-acre site on an aerial photograph. The site is located at approximately 39°13'41.3"N 121°02'33.8"W and contains three parcels, designated Assessor's Parcel Number (APN) 35-260-62, 35-260-63, and 35-260-64.

The project site was the former location of the Spring Hill Mine, which operated at the site intermittently during the late 1800s and through the 1940s. Abandoned mine features located on site include excavations, pits, remnants of building foundations, stockpiles of mine waste rock, and dry tailings ponds. The property is vacant and has not been developed since the mining activities (Appendix J).

Project Site General Plan and Zoning Designations

Land uses for the project area are determined by the City of Grass Valley 2020 General Plan and the City of Grass Valley Zoning Ordinance. The project site is currently designated under the General Plan as Business Park and zoned Corporate Business Park, as shown in Table 3-1 and on Figure 3-1, General Plan Designations, and Figure 3-2, Zoning Designations.

As shown in Table 3-1 and on Figures 3-1 and 3-2, under Alternative A, the project would require a General Plan Amendment to designate 21 acres of the site Commercial and 5.8 acres of the site Residential Urban High Density. The project would also require rezoning the property to 21 acres of Central Business District (C-2) and 5.8 acres of Multiple Dwelling Residential (R-3). This would facilitate the proposed development of 178,960 square feet of commercial building space and 90 multifamily dwelling units.

Table 3-1 and Figures 3-1 and 3-2 also show that under Alternative B, the project would require a General Plan Amendment to designate 14.5 acres of the site Commercial and 12.3 acres of the site Residential Urban High Density. The project would also require rezoning the property to 14.5 acres of Commercial (C-2) and 12.3 acres of Multiple Dwelling Residential (R-3). This would facilitate the proposed development of 171 multifamily dwelling units, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space.

Table 3-1
General Plan and Zoning Designations

	Existing	Alternative A	Alternative B
General Plan Designations	Business Park – 26.8 acres	Commercial – 21 acres Residential Urban High Density – 5.8 acres	Commercial – 14.5 acres Residential Urban High Density – 12.3 acres
Zoning Districts	Corporate Business Park – 26.8 acres	Central Business District (C-2) – 21 acres Multiple Dwelling Residential (R-3) – 5.8 acres	Central Business District (C-2) – 14.5 acres Multiple Dwelling Residential (R-3) – 12.3 acres

Surrounding Land Uses

SR 20/49 runs parallel to the project site's western boundary. On the west side of SR 20/49, properties are designated in the General Plan for Institutional/Non-Governmental and Office/Professional uses, and are zoned Public (P) and Office Professional (OP). Land uses on this side of SR 20/49 include the Golden Empire Nursing and Rehab Center, the Sierra Nevada Memorial Hospital, office uses—with a predominance of medical offices, and limited residential areas. Areas to the south and southeast are zoned Light Industrial (M-1) and support three self-storage facilities (Old Barn, Ernie's and Springhill), Bub Enterprises Inc. Gold Country Gymnasium and Warm's Yoga. The Grass Valley Terrace Apartments are located east of the project site while the Springhill Garden Apartments are located north of the project site on the other side of Dorsey Drive. Both of these properties are zoned Medium Density Residential (R-2A). A residential neighborhood to the northeast of the project site is zoned Multiple Family Residence (R-3) (County of Nevada 2018).

Downtown/Town Center Area

The project site is located approximately 1.25 miles northeast of the historic downtown area. The downtown area sits in the southern-central area within the City limits and runs along Neal Street and Mill Street, west of SR 20/49. Downtown is bounded, roughly, by Neal Street to the South, Richardson Street to the North, School Street to the West, and Tinloy Street to the East. Downtown Grass Valley is comprised of the original townsite founded in 1850 and surveyed and recorded in 1872. This historic area is one of the main tourist attractions in the City as the stores and buildings retain the gold rush era facades. The downtown area comprises numerous hotels, motels, dining establishments, bakeries, coffee shops, and commercial and office space, such as insurance companies and real estate services (City of Grass Valley 1999).

Land Development Trends

The General Plan identifies probable trends and tendencies, termed "dynamics and directions", which were developed for the major land use categories: commercial, office/professional, manufacturing/industrial, and residential (City of Grass Valley 1999).

The General Plan describes that commercial growth in the City occurs mainly in the form of turnover and upgrading within existing shopping centers and commercially-used buildings. This has occurred over time in response to several major stimuli, particularly Sierra College growth and development; growth in the medical/health care sector; a growing tourism/visitor-induced economy; and demographic changes, particularly the large and growing senior population. Since 1980, local commercial "infrastructure" has expanded faster than local population growth. The General Plan noted that the large, modern shopping centers within the City support Grass Valley's role as the regional commercial center for western Nevada County and that strong growth was

anticipated for business-related support retail and services, medical-related goods and services, tourist-related services (lodging, restaurants), and enterprises geared to senior citizens and retirees. The General Plan also anticipated some commercial intensification, primarily at the immediate edge of the Glenbrook area and Downtown.

In regards to residential growth, the General Plan forecast a need for almost 3,000 new dwelling units, and projected that 45% of these would be multifamily units. The General Plan established a goal of meeting one-third of the housing demand through infill development, including multifamily units in medium- and high-density residential projects.

Other Approved and Pending Development Projects in the City of Grass Valley

Table 3-2 provides a summary of other development projects in the City of Grass Valley. The list of approved and pending projects was determined based on a review of the City's pending project list and consultation with City staff.

Table 3-2
Summary of Approved and Proposed Developments

Project Name and Location	Number of Residential Units Planned or Proposed	Square Feet of Commercial/ Office Space	Status
Sierra Terrace; Berryhill Drive and East Main Street	28	0	Approved
Makiah Woods; Brunswick Road and Town Talk Road	49	0	Approved (Under Construction)
Loma Rica Ranch, Brunswick Road and Sutton Way	700	54,500 Commercial 346,161 Office	Approved
Gold Country Village 1; East Main Street and Joerschke Drive	160 senior apartments; 13 dwelling units	0	Approved
Gold Country Village 2; E Bennett Street	120		Approved (Phase 1 completed, 80 units occupied)
Wolf Creek Village; Freeman Lane and McKnight Way	70	0	Approved
Berriman Ranch; Picadilly Lane and Freeman Lane	121	0	Approved
314 Railroad Avenue; Railroad Avenue and Idaho-Maryland Road	0	27,596 Office	Approved
Ridge Meadows; Ridge Road and Upper Slate Creek Road	37	0	Approved (Completed)
Village at South Auburn; South Auburn Street and Whiting Street	49	23,264 Retail/Office	Approved

Table 3-2
Summary of Approved and Proposed Developments

Project Name and Location	Number of Residential Units Planned or Proposed	Square Feet of Commercial/ Office Space	Status
Milco III; Whispering Pines Lane and Clydesdale Court		57,315 Industrial	Approved
Victoria Grove; Whiting Street and South Auburn Street	72		Approved
500 Idaho-Maryland Road		22,500 Warehouse/Light Manufacturing	Approved

Agricultural Lands

The California Department of Conservation administers the Farmland Mapping Monitoring Program, which produces maps and statistical data for California's agricultural resources. Agricultural land is rated according to soil quality and irrigation status. The best quality land is "prime farmland," and rural land less suited for crop production is usually categorized as "grazing land."

The Department of Conservation Farmland Mapping Monitoring Program designates the project site as "urban and built-up land." Land classified as urban and built-up land is land that is occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a 10-acre area (DOC 2016).

The California Land Conservation Act of 1965 (Williamson Act) is a non-mandated state policy providing for preferential assessment of agricultural and open space lands that meet local size and use criteria. In exchange for reduced property taxes, owners of Williamson Act lands place their land holdings under contract with participating cities and counties; the owners are then prohibited from developing their properties during the contract period. No land on the project site is currently under a Williamson Act contract.

3.2 REGULATORY FRAMEWORK

Federal Regulations

There are no federal land use regulations that pertain to this EIR's analysis of the project's environmental effects.

State Regulations

California Government Code Section 65300 requires each county and city to adopt a general plan to guide development decisions. Further, California planning law dictates that all land use decisions must be consistent with the implementing jurisdiction's adopted General Plan. Therefore, the proposed project must be consistent with the City's General Plan and the City's Zoning Ordinance. The City of Grass Valley 2020 General Plan (City of Grass Valley 1999) establishes the City's development goals and policies; sets the land use, housing, and development policies for the City; and designates allowable land uses for all property throughout the City and its Sphere of Influence.

Local Regulations

Grass Valley 2020 General Plan

The City of Grass Valley 2020 General Plan establishes a vision for the City that includes preserving historic and scenic resources within the city, encouraging development of a variety of residential building types, and protecting the downtown while diversifying the City's economy (City of Grass Valley 1999). The General Plan "strives to maintain Grass Valley's small town character and sense of community in a number of ways, including an emphasis on infill development, neighborhood integrity, community design and creation of community and neighborhood gathering places" and states that the goals, objectives, policies, and implementation measures established in the General Plan are intended to facilitate a climate of preserving, protecting, maintaining, and enhancing quality of life in the City (City of Grass Valley 1999).

Many of the City's General Plan policies applicable to the proposed project were adopted with the intent to reduce the environmental impacts of ongoing development, while land use designations were adopted to provide the long-range planning necessary to minimize conflicts between adjacent land uses and provide adequate infrastructure.

1-LUG: Promote balanced community growth and development in a planned and orderly way.

1-LUO: Availability of sufficient building sites properly zoned to accommodate projected growth.

2-LUG: Promote infill as an alternative to peripheral expansion where feasible.

3-LUG: In areas of new development, plan for a diversity of land uses and housing types, including mixed use developments.

6-LUO: Reduction in congestion and travel time to acquire needed goods and services.

8-LUO: Provision of a full range of housing opportunities and types.

5-LUG: Provide for a broad range of housing opportunities, including opportunities for low, moderate and middle income households.

12-LUO: Designation of residential building sites sufficient in number and variety to meet projected demand.

6-LUG: Promote a jobs/housing balance within the Grass Valley region in order to facilitate pleasant, convenient and enjoyable working conditions for residents, including opportunities for short home to work journeys.

15-LUO: Reduction in the number of vehicle miles driven.

17-LUO: Future employment opportunities as adults for today's youth in well-paying local jobs.

7-LUG: Create a healthy economic base for the community, including increasing employment opportunities through attraction of new and compatible industry and commerce, and through retention, promotion and expansion of existing businesses.

19-LUO: Employment opportunities for present and future residents.

20-LUO: An expanding local tax base.

24-LUO Ability to respond to new service demands and the needs of a changing population.

2-LUP: Require adequate information when reviewing development proposals, including full environmental review and fiscal impact analyses, to assure minimization of environmental, public facilities and services impacts.

3-LUP: Maintain standards for population density and building intensity for each land use category identified in the General Plan.

4-LUP: Identify areas appropriate for infill development and show them on the Land Use Diagram.

5-LUP: Actively market infill and available parcels during contacts with developers and community members.

6-LUP: Develop a more specific development strategy for identified infill parcels following General Plan adoption.

8-LUP: Encourage and facilitate mixed-use developments on infill sites.

9-LUP: Provide for higher residential densities on infill sites and in the Downtown area.

11-LUP: Where feasible, treat newly developing areas as Planned Developments.

12-LUP: Permit increases in residential density (clustering) on portions of development sites while maintaining overall density.

13-LUP: Encourage convenience goods and services opportunities to be incorporated into any significant development proposal.

14-LUP: Encourage incorporation of multiple family development in new development areas while maintaining high design standards.

22-LUP: Assure that a sufficient number of sites are zoned for multiple family use.

23-LUP: Encourage mixed use developments incorporating a variety of densities on infill sites and in areas proposed for annexation.

24-LUP: On large parcels, encourage clustering of residential units on the most developable portions of the site in order to reduce infrastructure and other housing-related construction costs.

25-LUP: Utilize clustering and other land use techniques to protect environmentally sensitive resources, such as heritage trees and wetlands.

30-LUP: Encourage mixed use developments on larger parcels in newly developing areas incorporating jobs generating businesses and industry housing.

31-LUP: Promote primary jobs and core employment opportunities; those that export goods while importing capital.

37-LUP: Assure that new development pays its fair share of the cost of municipal services.

City of Grass Valley Zoning Ordinance – Development Code

The City of Grass Valley Development Code carries out the policies of the Grass Valley General Plan by classifying and regulating the uses of land and structures within the City, consistent with the General Plan. This Development Code is adopted to protect and promote the public health, safety, comfort, convenience, prosperity, and general welfare of residents, and businesses in the City. More specifically, the purposes of this Development Code are to:

- Provide standards and guidelines for the continuing orderly growth and development of the City that will assist in protecting the historical small town character and community identity of Grass Valley;
- Conserve and protect the City's natural beauty and setting, including scenic vistas, cultural and historic resources, hills and trees;
- Ensure that proposed development and new land uses conserve energy and natural resources;
- Create a comprehensive and stable pattern of land uses upon which to plan transportation, water supply, sewerage, energy, and other public facilities and utilities;

- Ensure that development is of human scale, primarily pedestrian-oriented, and designed to create attractive streetscapes and pedestrian spaces;
- Minimize vehicle traffic by providing for a mixture of land uses, pedestrian-oriented development, compact community form, safe and effective traffic circulation, and adequate on- and off-street parking facilities;
- Provide neighborhoods with a variety of housing types to serve the needs of a diverse population; and
- Ensure compatibility between different types of development and land uses.

Grass Valley Redevelopment Project Area Redevelopment Plan

In 2009, the Grass Valley Redevelopment Agency adopted an Expansion Feasibility Study (Fraser & Associates 2009) that considered amendments to the Grass Valley Redevelopment Project Area's Redevelopment Plan. The amendments evaluated in that study considered adding 504 acres of land located north of the intersection of East Main Street and Idaho Maryland Road, including the proposed Dorsey Marketplace project site, to the Redevelopment Project Area. The feasibility study found that the added area warranted redevelopment because many properties in the area are in need of revitalization to address issues of inadequate public infrastructure, stagnant property values, and environmental contamination. There was a total of 95.8 acres of vacant land within the 504 acres of added area. Where environmental contamination, such as hazardous waste, impairs property values, this is considered an economic blight condition. Exhibit 8 of the feasibility study identifies the Dorsey Marketplace project site as having an economic blight condition due to its status as an active hazardous material case.

Grass Valley Economic Development Strategy

In 2011, the Grass Valley City Council adopted an Economic Development Strategy (City of Grass Valley 2011) intended to support attainment of the City's vision of promoting "the economic vitality of the region by serving as the Economic Hub of Western Nevada County." The Economic Development Strategy includes a mission statement of enhancing "the economic vitality of the community by taking actions that support opportunities for wealth creation and enhanced community services that enable people to pursue an exceptional quality of life." It also includes a specific objective of growing and reshaping the retail and commercial sectors to capture a greater share of business activity. The Strategy identifies increases in retail sales activity, transient occupancy tax activity, property taxes and commercial lease rates and occupancy fluctuations as

key performance measures. The following goals and strategies from the Economic Development Strategy are relevant to consideration of the proposed Dorsey Marketplace project:

- Goal 1: Promote Primary Job Growth – Ready for the Next Wave
  - Strategy 1.4 Increase inventory of vacant and/or underutilized business park and industrial lands
  - Strategy 1.6 Partner with various stakeholders to attract/retain priority businesses.
- Goal 3: Enhance Community Identity – The look and feel of a Great Town
  - Strategy 3.2 Enhance historic image and economic vitality of downtown and adjoining business districts
    - Action Plan 5 Continue to implement EPA Brownfield Grant program by identifying priority parcels, contamination challenges and developing clean-up strategies. Pursue additional funding sources to clean up priority parcels.

In support of development and implementation of the Economic Development Strategy, the City retained consultants to prepare a Market Overview (Buxton 2010) and a Retail Research Report (Chabin Concepts 2013). The Market Overview analyzed regional consumer spending and consumer preferences and identified goods and services that meet consumer demands in the region. The report found that additional retail development within the City is viable because the City of Grass Valley and surrounding region support sufficient population with a wide range of demographic characteristics. The Buxton report estimated the regional retail leakage in the secondary trade area (which includes the City and surrounding areas) to be in excess of $200 million annually.

The Retail Research Report included a retail survey and focus group sessions, with an objective of providing information that would guide the City's retail recruitment, retention and expansion efforts. The retail survey identified that the primary shopping areas for City residents are Grass Valley and Roseville, and that the key reasons for shopping outside of the local area are pricing and selection. The survey was followed up by three focus groups; findings from those sessions include that the region's retail sales leakage would best be addressed with more retail in the General Merchandise category and locally-owned and/or independently-owned businesses, and that the addition of a chain or big box store would offer a greater variety of products at lower prices but would not be expected to adversely affect existing local merchants because they offer unique products (Chabin Concepts 2013).

Taken together, the Economic Development Strategy and the supporting analyses define the City's general approach to economic development as including enhancing neighborhood amenities, creating jobs, capturing leakages, increasing the tax base, and providing convenient access to goods and services.

3.3 IMPACTS

Methods of Analysis

The following assessment of land use impacts is based on a review of applicable plan, policy, and regulatory documents, as well as consultation with City of Grass Valley Planning Department staff. Information related to land uses was reviewed in light of the proposed project to evaluate the project's consistency with relevant plans and policies, and to determine land use compatibility.

The first impact discussed in this section relates to the consistency of the proposed project with all applicable City environmental resource policies, including those resource policies and environmental issue areas covered in other sections of this EIR. Where mitigation measures are necessary to ensure compliance with the City's environmental resource policies, those measures are referenced in the first impact discussion. The full text of each mitigation measure is presented in each of the sections of this EIR, and is not repeated here.

The project site does not include any farmland designated as Prime, Unique, or of Statewide Importance or contain any lands under a Williamson Act contract. The project would not convert designated farmland to nonagricultural uses, and therefore, the proposed project would result in no impact to agricultural uses, farmland, or Williamson Act contract lands. In addition, the project is not located adjacent to farmland; therefore, the project would not hasten the conversion of farmland to nonagricultural uses. Thus, these issues are not further evaluated.

The land use analysis in an EIR does not typically include a discussion of cumulative impacts because the consistency analysis of applicable land use goals and policies and compatibility with existing adjacent uses do not relate to potential additive effects. Further, the project site is an infill site, with existing development on all sides and redevelopment of any of the adjacent properties is not reasonably foreseeable. Therefore, there are no significant land use consistency impacts where the project, in combination with impacts from other projects, could contribute to a cumulative land use impact. Thus, cumulative land use effects are not further evaluated. Potential cumulative land use compatibility issues such as those related to noise levels, traffic conditions, or air quality degradation are addressed within the appropriate resource section of this EIR.

Significance Criteria

Appendix G of the CEQA Guidelines provides the criteria that were used to determine whether the proposed project would have a significant environmental impact related to land use. Potentially significant impacts associated with the proposed project have been evaluated using the following significance criteria. Would the project:

- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

- Substantially conflict with surrounding land uses (current and planned) or physically divide an existing community?

Impact Analysis

Impact 3-1: Would the project conflict with land use plans, policies, or regulations?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measures 6a, 6b, 6c, 6d, 6e, 6f, 7a, 9b, 9c, 9d, 10a, and 10b	Mitigation Measures 6a, 6b, 6c, 6d, 6e, 6f, 7a, 9a, 9c, 9d, 10a, and 10b
Significance after mitigation:	Less than significant	Less than significant

Alternative A

Land use planning impacts are evaluated in this section by determining whether the commercial and multifamily residential land uses proposed under Alternative A are in compliance with goals, policies, and land use designations of the General Plan, City zoning requirements, and other relevant policy documents. The analysis focuses specifically on policies that, if violated, may contribute to some direct or reasonably foreseeable indirect environmental impact (as defined by the CEQA Statutes and Guidelines) compared to what would be anticipated with full policy compliance. The focus of the section is on policies that apply to housing and commercial projects, not on policies that apply to the City itself, and not policies that specifically apply to a type of land use not proposed as a part of the project. The City's environmental policies do not always allow qualitative or definitive evaluation. Therefore, although this EIR does thoroughly analyze and report on project consistency with environmental policies, it is the City Planning Commission and Council who will make the ultimate determination in this regard.

As discussed in Section 3.2, Regulatory Framework, land uses at the project site are governed by the City's General Plan and Zoning Ordinance. The General Plan designation for the project site is Business Park while the site is zoned Corporate Business Park. Alternative A proposes a General Plan Amendment to change land currently designated for Business Park to 21 acres of Commercial and 5.8 acres of Residential Urban High Density, and a rezone from Corporate Business Park to Central Business District (C-2) and Multiple Dwelling Residential (R-3), as shown in Table 3-1.

Residential Urban High Density Land Use

This area would be located in the southeastern portion of the project site, adjacent to Spring Hill Drive, as shown in Figure 2-4, Alternative A Site Plan. Alternative A proposes to change the land use designation of this 5.8-acre area from Business Park to Residential Urban High Density, as shown in Figure 3-1 and would change the zoning on this portion of the site from CBP to R-3. This would allow development of 90 multifamily dwelling units at a density of 15.8 dwelling units

per acre. Under the existing CBP zoning, 8 residential units per acre are allowed, thus the site could accommodate a maximum of 215 dwelling units.

The project design is consistent with the development standards under the City's R-3 zone district. The R-3 portion of the project is 5.8 acres, which exceeds the minimum allowable lot size of 10,000 square feet. The apartment buildings would meet the applicable setback requirements by ensuring a minimum front setback of 15 feet from Spring Hill Drive, interior side setbacks of at least 5 feet, and a rear setback between 10 feet and 20 feet.

Commercial Land Use

As shown in Figure 2-4, the Commercial land use area would comprise the majority of the project site, totaling 178,960 square feet of commercial space and associated parking, circulation, and pedestrian improvements. Alternative A would change the land use designation from Business Park to Commercial, and would rezone 21 acres from Corporate Business Park to Central Business District (C-2). In the City's C-2 zone district, there is no minimum allowable lot size and no front or street side setbacks are required while a 12-foot rear setback is required for loading.

General Plan Consistency

General plans provide the long-term objectives, principles, and standards for development, and all development proposals must be generally consistent with the overall land use guidance provided in a general plan. More detailed regulation and land use controls are applied through the City's zoning, subdivision, and grading requirements, as well as through other City regulations and ordinances.

Implementation of Alternative A would result in a change in land use at the project site as compared to the land uses anticipated for the site under the City's General Plan. The following discussion evaluates Alternative A in comparison to the land use planning goals and policies contained in the City's 2030 General Plan, applicable ordinances, and other planning documents. Additional details regarding the project's consistency with the City's policies and ordinances that address specific environmental resources are provided in the individual resource sections in this Draft EIR.

Alternative A would entail the development of residential and commercial uses on land currently designated for business park development, as shown in Table 3-1. The CBP zone district anticipates development of employment opportunities in a campus setting, "which includes landscaped open space between buildings, screened service areas, uniform sign and street lighting standards and maintenance of a landscape theme throughout" (City of Grass Valley 2007). Residential uses as a component of a mixed use project with a maximum density of 8 dwelling units per acre are allowed in the CBP zone district subject to a use permit. Permitted retail uses in

the CBP zone are limited to neighborhood market; office-supporting retail; restaurants, cafes and coffee shops; and warehouse retail. The project would re-designate 5.8 acres of business park use to residential, leaving 21 acres designated for commercial. Some retail is allowed under the existing zoning, but the change to C-2 would allow more variety of retail. The commercial areas are proposed to be arranged in a shopping center setting, which would reflect some of the campus setting attributes noted in the City's Development Code, by providing cohesive architecture, vehicle and pedestrian circulation, uniform sign and lighting standards, and maintenance of a landscape theme. With 90 proposed dwelling units, Alternative A would develop fewer residences than could be allowed under the existing zoning.

Alternative A is consistent with the City's General Plan goals, objectives, and policies listed in Section 3.2. By providing 90 multifamily dwelling units, Alternative A would support attainment of the General Plan goals and objectives to increase the amount of multifamily housing in the City. By providing commercial space, Alternative A would increase shopping opportunities in the City of Grass Valley, which could result in capture of some of the sales activities lost to other shopping destinations in the region (Appendix D). This would support the City's implementation of the adopted Economic Development Strategy and the retail sales capture could reduce travel time and vehicles miles traveled to acquire needed goods and services. The project would also include mixed use development; expand employment and business through commerce; expand the local tax base; and provide for mixed use and higher residential densities on infill sites. Existing and planned utilities for and surrounding the project site would be able to support a residential population, as discussed in Chapter 14, Public Services and Utilities. As discussed in Chapter 5, Aesthetics, the proposed development of commercial land uses at the site would not draw business away from the downtown, thus the project would not impair the City's ability to maintain a focus on commercial development in the project's designated town center (Appendix D).

Alternative A would be partially inconsistent with the existing land use and zoning designations on the project site. However, the project applicant requests approval of amendments to the land use and zoning designations to ensure consistency. The proposed residential and commercial land uses would be compatible with surrounding uses and densities. Overall, the project meets the intent of the City's General Plan to ensure future development in this area is carefully coordinated and integrated to promote infill; reduce travel time to acquire needed goods and services; provide mixed use development with multifamily dwelling units; and expand the local tax base. Land use impacts related to the proposed project's inconsistency with the existing land use and zoning designations would, therefore, be **less than significant**.

Appendix C to this Draft EIR provides a detailed analysis of the project's consistency with the City's General Plan policies. As described in Appendix C, the proposed project would require implementation of mitigation measures to ensure consistency with several policies. Thus, Alternative A would have a **potentially significant** impact resulting from inconsistency with the

General Plan, but that impact would be reduced to a **less than significant** level with implementation of the mitigation measures identified in the following summary:

- **Conservation and Open Space Element:** 3-COSO regarding impacts to protected species: **Mitigation Measure 6a, 6b, and 6c** requires the project to survey and avoid impacts to species.
- **Conservation and Open Space Element:** 3-COSG regarding habitat protection: **Mitigation Measure 6d, 6e, and 6f** requires construction worker training, obtaining a Clean Water Act Section 404 permit and Section 401 Water Quality Certification, and submittal of evidence of compensatory habitat restoration.
- **Conservation and Open Space Element:** 6-COSG: regarding compliance with and understanding of air and water quality regulations and standards. **Mitigation Measure 10a and 10b** verification of construction contract requirements and verification of building plans to reduce impacts on air quality.
- **Historical Element:** Policy HP-11 regarding preservation of unknown cultural resources: The proposed project has the potential to uncover archaeological or historic resources during excavation and grading. **Mitigation Measure 7a** requires construction worker training and stipulates procedures to be followed in the event of a discovery.
    - **Noise Element:** 1-NG regarding maintaining a relatively quiet environment without unnecessary, annoying and potentially damaging noise: Chapter 9, Noise, of this Draft EIR presents an acoustical analysis and includes **Mitigation Measures 9b, 9c, and 9d**, which are identified to ensure that noise impacts are reduced to acceptable levels.

Alternative B

As discussed in Section 3.2, land uses at the project site are governed by the City's General Plan and Zoning Ordinance. The General Plan designation for the project site is Business Park while the site is zoned CBP. The proposed land use and zoning designations under Alternative B are shown in Table 3-1. This alternative proposes a General Plan Amendment to designate 14.5 acres of the site Commercial and 12.3 acres of the site Residential Urban High Density. The project would also require rezoning the property to 14.5 acres of Central Business District (C-2) and 12.3 acres of Multiple Dwelling Residential (R-3). This would facilitate the proposed development of 171 multifamily dwelling units, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office.

Residential Land Use

Under Alternative B, the project would develop 171 multifamily dwelling units. This is less than the 213 units that could be accommodated under the existing CBP zoning, which allows a maximum density of 8 dwelling units per acre. Under Alternative B, the multifamily dwelling units would be located in the 12.3 acres of the site designated Residential Urban High Density and zoned R-3.The R-3 zone district allows a maximum density of one unit for every 2,000 square feet of site area. It requires a 15-foot front setback to the building façade, which is reduced to 5 feet for a front porch. Side setbacks must be a minimum of 5 feet, or 15 feet to an adjacent street; and rear setbacks must be between 10 feet and 20 feet.

Commercial Land Use

Under Alternative B, the project would develop 104,350 square feet of commercial uses and associated parking, circulation, and pedestrian improvements. Alternative B would change the land use designation for the area that would support from commercial land uses from Business Park to Commercial and change the zoning from CBP to C-2. The allowable land uses and development standards (such as setbacks) for the Commercial land use designation and C-2 zone district described previously in the Alternative A discussion would apply to the project site under Alternative B.

Office Land Use

Under Alternative B, the project would develop 8,500 square feet of office land uses. Office uses are allowed under the existing CBP zoning; this zone district anticipates development of employment-generating administrative and research and development offices. Alternative B would place the office land uses adjacent to the multifamily dwelling units and south of the commercial land uses. The Commercial land use designation and C-2 zone district would be applied to the area supporting office land uses. The allowable land uses and development standards (such as setbacks) for the Commercial land use designation and C-2 zone district described previously in the Alternative A discussion would apply to the project site under Alternative B. The Grass Valley Development Code identifies business, service, government, professional, and administrative offices as permitted uses in the C-2 zone district.

General Plan Consistency

Implementation of Alternative B would result in a change in land use at the project site as compared to the business park land uses anticipated for the site under the City's General Plan. This alternative would develop a portion of the office uses anticipated for the site, and would include residential and commercial components. Under Alternative B, the project applicant requests amending the General Plan designations for the site to Commercial and Residential Urban High Density and amending the

zoning designations for the site to C-2 and R-3**,** as shown in Table 3-1, with 12.3 acres designated for residential uses and 14.5 acres designated for commercial uses. Under the existing CBP zoning, the site could support a maximum density of 8 dwelling units per acre, which would accommodate up to 213 dwelling units. Under the C-2 zoning, the site could support a maximum density of 15 dwelling units per acre. Alternative B proposes 171 dwelling units to be located in the southern portion of the project site, to be located in the proposed R-3 zone district. The maximum allowable density in the R-3 zone is one unit per 2,000 square feet of site area, thus the 12.3-acre R-3 area could support a maximum of 267 units. Alternative B proposes to locate the 171 dwelling units in the southern portion of the site, along with the proposed office space, leaving the northern and central portions of the site for commercial uses. Development of office space within the project site is consistent with the existing CBP zoning of the site, which is intended to "provide opportunities for corporate administrative offices and medium size research and development firms" (City of Grass Valley 2007). As discussed previously, some retail is permitted in the CBP zone, but under the proposed General Plan and zoning amendments Alternative B would allow for a wider range of commercial uses than anticipated.

Alternative B is consistent with the City's General Plan goals, objectives, and policies listed in Section 3.2. By providing 171 multifamily dwelling units, Alternative B would support attainment of the General Plan goals and objectives to increase the amount of multifamily housing in the City. By providing commercial space, Alternative B would increase shopping opportunities in the City of Grass Valley, which could result in capture of some of the sales activities lost to other shopping destinations in the region, though the ability to capture retail sales would be less than presented under Alternative A (Appendix D). Alternative B would support the City's implementation of the adopted Economic Development Strategy and the retail sales capture could reduce travel time and vehicles miles traveled to acquire needed goods and services. The project would also include mixed use development; expand employment and business through commerce; expand the local tax base; and provide for mixed use and higher residential densities on infill sites. Existing and planned utilities for and surrounding the project site would be able to support a residential population, as discussed in Chapter 14. As discussed in Chapter 5, the proposed development of commercial land uses at the site would not draw business away from the downtown, thus the project would not impair the City's ability to maintain a focus on commercial development in the project's designated town center (Appendix D).

The proposed residential, commercial, and office land uses would be compatible with surrounding uses and densities. Overall, Alternative B meets the intent of the City's General Plan to ensure future development in this area is carefully coordinated and integrated to promote infill; reduce travel time to acquire needed goods and services; provide mixed use development with multifamily dwelling units; and expand the local tax base. Land use impacts related to Alternative B's inconsistency with the existing land use and zoning designations would, therefore, be **less than significant**.

Appendix C to this Draft EIR provides a detailed analysis of the project's consistency with the City's General Plan policies. As described in Appendix C, the proposed project would require implementation of mitigation measures to ensure consistency with the several policies. Thus, Alternative B would have a **potentially significant** impact resulting from inconsistency with the General Plan, but that impact would be reduced to a **less than significant** level with implementation of the mitigation measures identified in the following summary:

- **Conservation and Open Space Element:** 3-COSO regarding impacts to protected species: **Mitigation Measure 6a, 6b, and 6c** requires the project to survey and avoid impacts to species.
- **Conservation and Open Space Element:** 3-COSG regarding habitat protection: **Mitigation Measure 6d, 6e, and 6f** requires construction worker training, the acquirement of a Clean Water Act Section 404 permit and Section 401 Water Quality Certification, and submittal of evidence of compensatory habitat restoration.
- **Conservation and Open Space Element:** 6-COSG regarding compliance with and understanding of air and water quality regulations and standards. **Mitigation Measure 10a and 10b** verification of construction contract requirements and verification of building plans to reduce impacts on air quality.
- **Historical Element:** Policy HP-11 regarding preservation of unknown cultural resources: The proposed project has the potential to uncover archaeological or historic resources during excavation and grading. **Mitigation Measure 7a** requires construction worker training and stipulates procedures to be followed in the event of a discovery.
    - **Noise Element:** 1-NG regarding maintaining a relatively quiet environment without unnecessary, annoying and potentially damaging noise: Chapter 9, Noise, of this Draft EIR presents an acoustical analysis and includes **Mitigation Measures 9a, 9c, and 9d**, which are identified to ensure that noise impacts are reduced to acceptable levels.

Impact 3-2: Would the project conflict with surrounding land uses, current and planned, or physically divide an existing community?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measures 5a, 8a, 8b, 8c, 8d, 8e, 8f, 8g, 9c, 10a, 10b, and 15a	Mitigation Measures 5a, 8a, 8e, 8h, 9c, 10a, 10b, and 15a.
Significance after mitigation:	Less than significant	Less than significant

Alternative A

As discussed in Section 3.1, Environmental Setting, existing and proposed land uses surrounding the project site are generally residential to the north, northeast, and east of the project site,

industrial to the south, and office and public to the west. SR 20/49 runs along the western side of the project site. Zoning designations surrounding the project site are Light Industrial, Medium Density Residential, Multiple Family Residence, Office Professional, and Public.

The project site is currently vacant (with the exception of building foundations that are remnants of the Spring Hill Mine), and there are no established communities on site that the proposed development would disrupt or divide. Although residential communities are located to the north, northeast, and east of the site, development of the largely vacant project site under Alternative A would not disrupt or divide the existing neighborhoods.

There is a wide range of land use and zoning designations on properties in the project vicinity. The residential component of the project would consist of Multiple Dwelling Residential (R-3) zoning, which allows for multifamily apartment buildings included as part of mixed-use projects. The proposed residential density within the project site is consistent with the range of densities for existing residential uses surrounding the project site (R-2A and R-3-MH). Further, the proposed residential density is consistent with the City's General Plan policies encouraging and accommodating multifamily development in areas of the City and higher residential densities on infill sites. The commercial (C-2) component of the project would not conflict with the existing light industrial (M-1) to the south and would be compatible with the C-2 zoned land north of the site beyond the existing residential area and southwest of the site on the western side of SR 20/49. Additionally, the mixed use and commercial plans are consistent with General Plan policies that encourage and facilitate mixed use developments on infill sites, promote jobs and employment opportunities, and encourage convenience goods and services opportunities to be incorporated into development proposals.

Environmental resource areas that can indicate a potential for a project to be incompatible with existing land uses include those related to changes to the existing visual environment, increases in traffic volumes and congestion, increases in noise, air quality degradation, and exposure to hazardous materials. This analysis summarizes how these compatibility issues have been analyzed and addressed within the appropriate resource sections of this EIR.

The project would not result in significant adverse visual impacts, as discussed in more detail in Chapter 5 Aesthetics. The site is adjacent to a multifamily residential development to the east. The removal of trees from the project site, completion of grading and paving, and construction of the multifamily dwelling units would be visible from the adjacent residential parcels. However, as shown in Figure 2-4, Alternative A would maintain a minimum setback of 20 feet from the property line and would plant trees and shrubs along the boundary between the proposed project and the existing Grass Valley Terrace Apartments. This would provide some screening of the proposed project and would limit the degree to which views would change. Mitigation Measure 5a

includes several performance standards that the site landscaping must meet to ensure consistency with City requirements and avoid creating land use incompatibilities.

As discussed in Chapter 8, Transportation, Alternative A would result in increases in traffic congestion at several intersections in the area, as well as increase delay on the SR 20/49 off ramps. The project applicant would be required to make fair-share contributions to improvements at these locations, as described in Mitigation Measures 8a through 8g, to ensure traffic operations remain acceptable and thus the traffic generated by Alternative would not lead to any land use incompatibilities. Chapter 8 concludes that Alternative A would result in a significant and unavoidable impact due to the length of vehicle queues at the Dorsey Drive/SR 20/49 interchange. This is not considered a land use conflict and does not indicate a land use incompatibility because the traffic queues would not adversely affect the ability of individual property owners and renters to continue to utilize their properties.

Chapter 9, Noise, identifies that Alternative A could result in substantial increases in ambient noise levels in the project vicinity that would be mitigated to a less than significant level. This includes the potential for mechanical heating/air conditioning equipment at the proposed residential units to generate unacceptable noise levels at the existing apartments east of the site. Mitigation Measure 9c identifies performance standards that must be met by the mechanical equipment to ensure noise levels remain acceptable and this potential land use incompatibility is avoided. Alternative A would not result in a significant increase in traffic-related noise in the vicinity.

As demonstrated in Chapter 10, Air Quality, Alternative A would be expected to generate air pollutant emissions that exceed the Northern Sierra Air Quality Management District's thresholds during both construction and operation. These emissions could cause annoyance or adverse health effects for existing land uses in the vicinity. Mitigation Measure 10a requires that specific air pollution control measures be implemented throughout construction while Mitigation Measure 10b identifies minimum building and site design standards that must be met to help minimize air pollutant emissions. Implementation of these measures would reduce the amount of air pollutant emissions generated by Alternative A and ensure that no land use incompatibilities are created.

As discussed in Chapter 15, Hazards and Hazardous Materials, construction of Alternative A could release naturally occurring asbestos into the air, which would cause a land use incompatibility by exposing people at the existing commercial and residential developments in the vicinity to this hazardous material. Mitigation Measure 15a would ensure that the Removal Action Workplan for the project site is implemented correctly, including the dust abatement program included in the Workplan. This would ensure that naturally occurring asbestos is not released to the air and no land use incompatibility is created. Chapter 15 also demonstrates that none of the proposed land uses would be expected to use or store acutely hazardous materials or to use or store a volume of hazardous materials that could expose neighbors to substantial risk.

As summarized above, Alternative A could create incompatibilities with existing land uses in the vicinity resulting from changes in aesthetics, increases in traffic and noise, and exposure of adjacent populations to air pollutants and hazardous materials. However, with implementation of the mitigation measures identified above, this impact would be reduced to a **less-than-significant** level.

Alternative B

The project site is currently vacant (with the exception of residual foundations that correspond with the locations of previous mining features) and is adjacent to several residential communities. Development of the project site under Alternative B would not disrupt or divide any of the established communities in the vicinity.

The land in the project vicinity carries a mix of zoning districts, including light industrial, office/professional, single-family residential (R-1), medium density residential (R-2), and Multiple Dwelling Residential (R-3). The residential component of the project would consist of R-3, which allows for multifamily apartment buildings included as part of mixed-use projects. The proposed residential density within the project site is consistent with the range of densities for existing residential uses surrounding the project site (R-2A and R-3-MH). Further, the proposed residential density is consistent with the City's General Plan policies encouraging and accommodating multifamily development in areas of the City and higher residential densities on infill sites. The commercial and office components of Alternative B would not conflict with the existing light industrial (M-1) to the south and would be compatible with the C-2 zoned land north of the site beyond the existing residential area and southwest of the site on the western side of SR 20/49. Additionally, the mixed use and commercial plans are consistent with General Plan policies that encourage and facilitate mixed use developments on infill sites, promote jobs and employment opportunities, and encourage that opportunities for convenience goods and services be incorporated into development proposals.

Environmental resource areas that can indicate a potential for a project to be incompatible with existing land uses include those related to changes to the existing visual environment, increases in traffic volumes and congestion, increases in noise, air quality degradation, and exposure to hazardous materials. This analysis summarizes how these compatibility issues have been analyzed and addressed within the appropriate resource sections of this EIR.

Alternative B would not result in significant adverse visual impacts, as discussed in more detail in Chapter 5 Aesthetics. Although the changes on the project site would be visible from the adjacent multifamily residential development to the east, as shown in Figure 2-5, Alternative B Site Plan, Alternative B would maintain a minimum setback of 20 feet from the property line and would plant trees and shrubs along the boundary between the proposed project and the existing Grass Valley Terrace Apartments. This would provide some screening of the proposed project and would limit the

degree to which views would change. Mitigation Measure 5a includes several performance standards that the site landscaping must meet to ensure consistency with City requirements and avoid creating land use incompatibilities.

As discussed in Chapter 8, Transportation, Alternative B would result in increases in traffic congestion at two intersections in the area. Mitigation Measure 8a, 8b, and 8e require the project applicant to make fair-share contributions to improvements at these locations to ensure traffic operations remain acceptable and thus the traffic generated by Alternative B would not lead to any land use incompatibilities.

Chapter 9, Noise, identifies that Alternative B could result in substantial increases in ambient noise levels in the project vicinity that would be mitigated to a less than significant level. This includes the potential for mechanical heating/air conditioning equipment at the proposed residential units to generate unacceptable noise levels at the existing apartments east of the site. Mitigation Measure 9c identifies performance standards that must be met by the mechanical equipment to ensure noise levels remain acceptable and this potential land use incompatibility is avoided. Alternative B would not result in a significant increase in traffic-related noise in the vicinity.

As demonstrated in Chapter 10, Air Quality, Alternative B would be expected to generate air pollutant emissions that exceed the Northern Sierra Air Quality Management District's thresholds during both construction and operation. These emissions could cause annoyance or adverse health effects for existing land uses in the vicinity. Mitigation Measure 10a requires that specific air pollution control measures be implemented throughout construction while Mitigation Measure 10b identifies minimum building and site design standards that must be met to help minimize air pollutant emissions. Implementation of these measures would reduce the amount of air pollutant emissions generated by Alternative B and ensure that no land use incompatibilities are created.

As discussed in Chapter 15, Hazards and Hazardous Materials, construction of Alternative B could release naturally occurring asbestos into the air, which would cause a land use incompatibility by exposing people at the existing commercial and residential developments in the vicinity to this hazardous material. Mitigation Measure 15a would ensure that the Removal Action Workplan for the project site is implemented correctly, including the dust abatement program included in the Workplan. This would ensure that naturally occurring asbestos is not released to the air and no land use incompatibility is created. Chapter 15 also demonstrates that none of the proposed land uses would be expected to use or store acutely hazardous materials or to use or store a volume of hazardous materials that could expose neighbors to substantial risk.

As summarized above, Alternative B could create incompatibilities with existing land uses in the vicinity resulting from changes in aesthetics, increases in traffic and noise, and exposure of adjacent populations to air pollutants and hazardous materials. However, with implementation of the mitigation measures identified above, this impact would be reduced to a **less-than-significant** level.

3.4 MITIGATION MEASURES

No mitigation measures specific to land use are required. Implementation of mitigation measures identified in other environmental resource chapters would be necessary to ensure consistency with the General Plan and to avoid creation of land use incompatibilities.

3.5 REFERENCES CITED

Buxton. 2010. *Grass Valley, CA, Market Overview.*

Chabin Concepts. 2013. *Grass Valley Retail Focus Group Report*. June 2013.

City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

City of Grass Valley. 2007. *City of Grass Valley Development Code.* March 6, 2007. Accessed at http://www.cityofgrassvalley.com/files/attachments/cdd/complete_development_code_2018_version_0.pdf

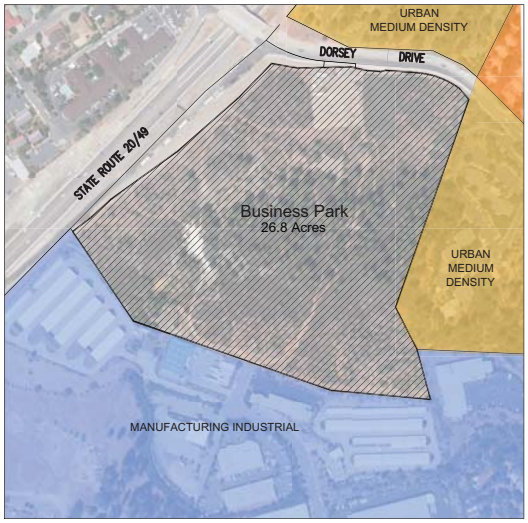
City of Grass Valley. 2011. *Economic Development Strategy.* January11, 2011.

County of Nevada. 2018. MyNeighborhood Geographic Information Systems base map. https://gis.nevcounty.net/myneighborhood/?APN=035260062. Accessed September 5, 2018.

DOC (Department of Conservation). 2016. *Nevada County Important Farmland 2014*. July 2016.

LEGEND:

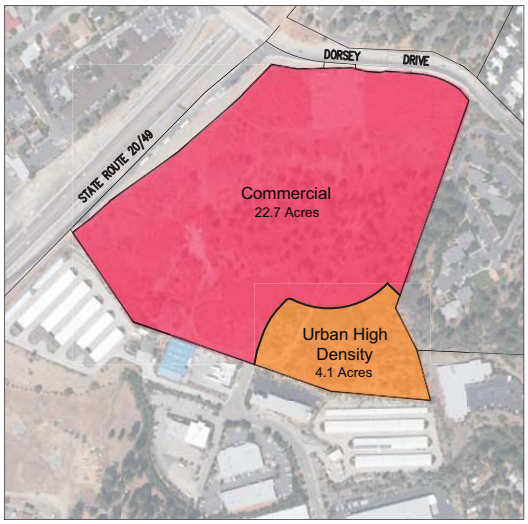
- BUSINESS PARK
- URBAN MEDIUM DENSITY
- URBAN HIGH DENSITY
- MANUFACTURING / INDUSTRIAL



EXISTING GENERAL PLAN

LEGEND:

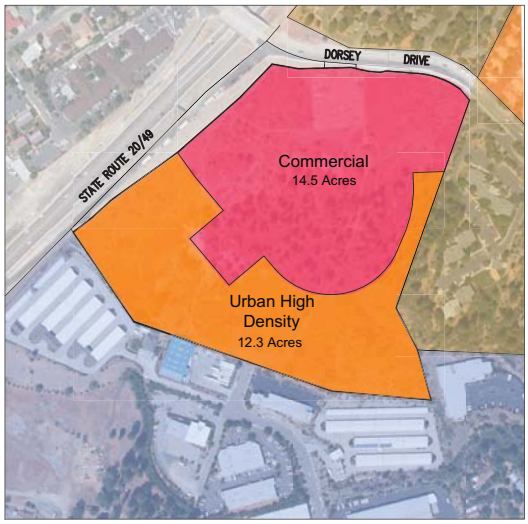
- COMMERCIAL
- URBAN HIGH DENSITY



PROPOSED GENERAL PLAN
ALTERNATIVE A

LEGEND:

- COMMERCIAL
- URBAN HIGH DENSITY



PROPOSED GENERAL PLAN
ALTERNATIVE B

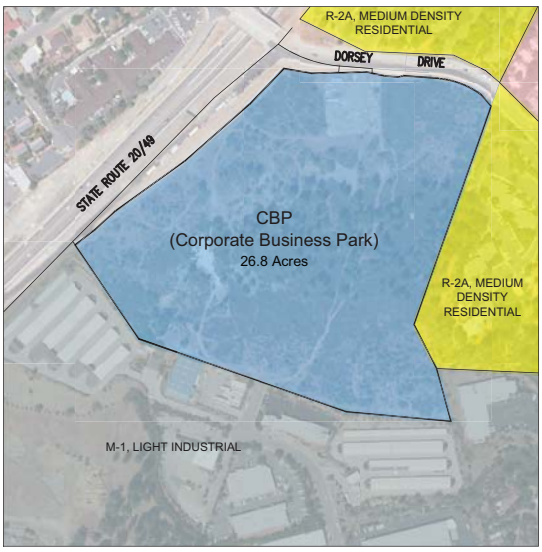
SOURCE: SCO 2019

FIGURE 3-1
General Plan Amendments
Dorsey Marketplace EIR

DUDEK

LEGEND:

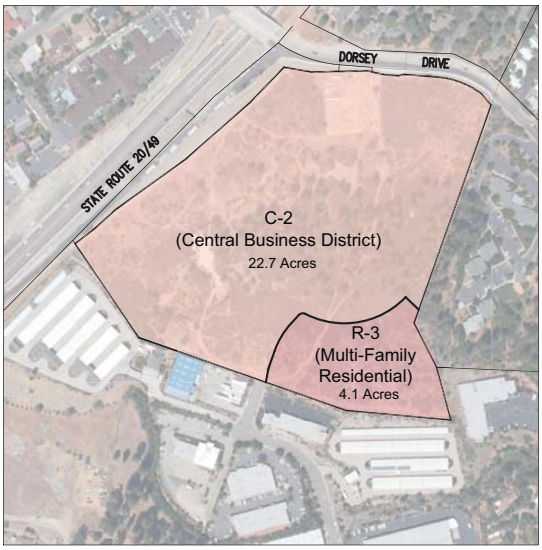
- NG-2, NEIGHBORHOOD GENERAL 2
- R-2A, MEDIUM DENSITY RESDENTIAL
- R-3, MULTI FAMILY RESIDENTIAL
- M-1, LIGHT INDUSTRIAL



EXISTING ZONING

LEGEND:

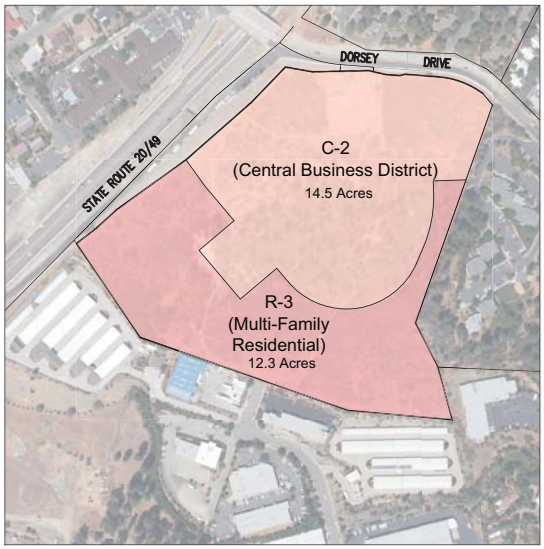
- C-2, CENTRAL BUSINESS DISTRICT
- R-3, MULTI-FAMILY RESIDENTIAL



PROPOSED ZONING
ALTERNATIVE A

LEGEND:

- C-2, CENTRAL BUSINESS DISTRICT
- R-3, MULTI-FAMILY RESIDENTIAL



PROPOSED ZONING
ALTERNATIVE B

SOURCE: SCO 2019

DUDEK

FIGURE 3-2
Zoning Amendments
Dorsey Marketplace EIR

CHAPTER 4
POPULATION, EMPLOYMENT, AND HOUSING

This section of the Draft Environmental Impact Report (EIR) describes changes in population, employment, and housing associated with implementation of the proposed Dorsey Marketplace (proposed project) and evaluates whether those changes would result in significant environmental effects. Alternative A would provide for up to 90 multiple-family residential units and approximately 178,960 square feet of commercial space. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space.

Changes in population, employment, and housing in and of themselves are generally characterized as social and economic effects and are not considered physical effects on the environment. The California Environmental Quality Act (CEQA) provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic changes are connected to physical environmental effects. A social or economic change related to a physical change may be considered in determining whether the physical change is significant (14 CCR 15382). The guidance for assessing economic and social effects is set forth in Section 15131(a) of the CEQA Guidelines:

> Economic or social effects of a project shall not be treated as significant effects on the environment. An EIR may trace a chain of cause and effect from a proposed decision on a project through anticipated economic or social changes resulting from the project to physical changes caused in turn by the economic or social changes. The intermediate economic or social changes need not be analyzed in any detail greater than necessary to trace the chain of cause and effect. The focus of the analysis shall be on the physical changes.

While an increase in population resulting from new development does not necessarily cause direct adverse physical environmental effects, indirect physical environmental effects such as increased vehicle trips and associated increases in air pollutant emissions and noise could occur. The information in this section is used as a basis for the analysis of project impacts in the technical sections contained in this Draft EIR. No comments were received in response to the Notice of Preparation that addressed population, employment, and housing. The Notice of Preparation and comments received in response to it are provided in Appendix A.

4.1 ENVIRONMENTAL SETTING

Grass Valley serves as a regional and economic center for more than 70,000 people. The County seat, Nevada City, is located on the northern edge of the City and the two city centers are just 4.2 miles apart. After beginning as a mining and logging town, Grass Valley's economy includes a

diverse range of commercial businesses and offices, including recent and current growth in the medical and educational sectors.

Population

The population of the City of Grass Valley was estimated by the California Department of Finance to be 13,035 people in 2017 and 13,041 people in 2018 (California Department of Finance 2018a). As the area of the City is 5.45 square miles, this is equal to 2,392 people per square mile. This is far above the average for Nevada County, which is 103.1 people per square mile. The difference in population density reflects the more urbanized land use patterns in the City and the extent of large (several hundred acres) land holdings throughout the more rural areas of the County. Between April 2010 and April 2014, there was a 0.1% population increase at both the City and the County levels (City-Data 2017).

Household Size

As of the 2010 U.S. Census, there were 5,980 households within the City. By 2018, average number of people per household was 2.04; this is slightly lower the County average of 2.39 (California Department of Finance 2018a). Only 44% of housing is owner-occupied which indicates that the majority of residents rent (City of Grass Valley 2014).

Household Income

As reported in the City's General Plan Housing Element, the median household annual income (in 2014 dollars) was $33,325 (City of Grass Valley 2014). Additionally, the per capita income is $23,005. Within the City limits, there is a relatively high rate of poverty of 21.9%. This is much greater than the rate within the County, which is 11.4% and is much higher than the National rate of 14.8%. Additionally, 23.5% of the population is 65 or over, which is the full age of retirement as defined the U.S. Social Security Administration. This is compared to 19.4% in Nevada County and 14.0% nationally (City of Grass Valley 2014).

Housing Stock

A variety of housing types exist within the City, including single-family homes, multifamily homes, townhomes, and mobile or alternative style homes. Of these types, detached single-family homes and multifamily homes with 5+ units dominate the housing stock, with 46.7% and 31.5% respectively in 2012 (City of Grass Valley 2014). There are an estimated total of 2,981 detached single-family units within the City in 2018 (California Department of Finance 2018b). The City of Grass Valley contains 29% of the total housing stock in Nevada County (6,696 dwelling units in the City and 53,745 dwelling units in the County overall). Of these totals, Grass Valley contains 3,715

attached single-family and multifamily dwelling units while the County overall has as predominance of detached single-family units (California Department of Finance 2018b).

Residential Vacancy Rate

Residential vacancy rate for the City of Grass Valley increased between 2000 and 2012; for homeownership, it increased from 1.9% to 2.6% and for rentals, it increased from 2.5% to 7.3%. At the same time, however, the City has seen a large increase in overcrowding. In the same period, the rate of overcrowding, as defined by more than one person per room, more than tripled; in 2000, overcrowding increased from 8% of renters and 3% for homeowners to 21% and 11% respectively in 2011. In the 2014–2019 Housing Element, the City stated that, "The percentage of the population living in overcrowded conditions is an indicator of the continued poor economic conditions in California as a whole, particularly in the more rural areas" (City of Grass Valley 2014).

Housing Affordability

The General Plan EIR found that the City would accommodate anticipated increases in population by encouraging development of a variety of new housing types and designs and specifically that 45% "of new housing will be affordable, multifamily units. These multifamily developments will be scattered throughout the city, not concentrated in areas or neighborhoods. Infill development will respond to the higher percentage of seniors in the population" (City of Grass Valley 1999). As previously discussed, Grass Valley is home to a large percentage of renters and hosts a population that has seen in sharp increase in overcrowding. The City itself stated that such an increase in overcrowding is indicative of poor economic conditions. This, in conjunction with the high rates of poverty within the City, supports the need for additional affordable housing.

Employment

In 2014, the unemployment rate for the City of Grass Valley was 6.7% (City of Grass Valley 2014). This equates to approximately 380 working age persons seeking employment. This does not include, however, persons that are underemployed or that have stopped seeking work, which is one of the faults of the unemployment rate. This 6.7% is both lower than it was in 2009 (10%) and lower than Nevada County in 2014 (7.4%).

Commute Time to Work

The City of Grass Valley is both a bedroom community for those that work in the Sacramento Metropolitan Area and a center of employment for those in more rural areas of Nevada County. As much as 41% of Grass Valley residents commute to jobs outside of the City (City of Grass Valley 2014). The mean commute time for workers 16 and older, as of 2010, was 15.3 minutes whereas, for the County of Nevada, the mean travel time is 29.4 minutes.

4.2 REGULATORY FRAMEWORK

Federal and State Regulations

There are no federal or state requirements related to population, employment, and housing applicable to the project.

Local Regulations

City of Grass Valley 2020 General Plan

The Land Use, Conservation/Open Space, and Housing elements of the General Plan include the following goals (G), objectives (O), and policies (P) related to population, employment, and housing:

3-LUG: In areas of new development, plan for a diversity of land uses and housing types, including mixed use developments.

8-LUO: Provision of a full range of housing opportunities and types.

5-LUG: Provide for a broad range of housing opportunities, including opportunities for low, moderate and middle income households.

12-LUO: Designation of residential building sites sufficient in number and variety to meet projected demand.

6-LUG: Promote a jobs/housing balance within the Grass Valley region in order to facilitate pleasant, convenient and enjoyable working conditions for residents, including opportunities for short home to work journeys.

17-LUO: Future employment opportunities as adults for today's youth in well-paying local jobs.

7-LUG: Create a healthy economic base for the community, including increasing employment opportunities through attraction of new and compatible industry and commerce, and through retention, promotion and expansion of existing businesses.

19-LUO: Employment opportunities for present and future residents.

2-LUP: Require adequate information when reviewing development proposals, including full environmental review and fiscal impact analyses, to assure minimization of environmental, public facilities, and services impacts.

8-LUP: Encourage and facilitate mixed-use development on infill sites.

9-LUP: Provide for higher residential densities on infill sites and in the Downtown area.

14-LUP: Encourage incorporation of multiple family development in new development areas while maintaining high design standards.

23-LUP: Encourage mixed-use developments incorporating a variety of densities on infill sites and in areas proposed for annexation.

30-LUP: Encourage mixed use developments on larger parcels in newly developing areas incorporating jobs generating businesses industry housing.

6-CP: Locate transit stops and park and ride facilities near freeway interchanges and in conjunction with higher density residential and mixed-use developments.

3-COSP: Encourage clustering, density averaging, and other techniques in large-scale new developments, as means of preserving open space and natural systems.

In addition to the policies within the General Plan, the General Plan Housing Element identifies a coordinated and comprehensive strategy for promoting the production of safe, decent, and affordable housing within the community. The Housing Element is a 5-year plan for the 2014–2019 periods, which differs from other General Plan elements that cover the period of 1999–2020. The Housing Element serves as an integrated part of the General Plan, but state law requires updates every five years to ensure its relevancy and accuracy. According to state law, the Housing Element must provide an assessment of both current and future housing needs and constraints in meeting these needs, and provide a strategy that establishes housing goals, policies, and programs. The Housing Element identifies strategies and programs that focus on:

1. Matching housing supply with need;
2. Maximizing housing choice throughout the community;
3. Assisting in the provision of affordable housing;
4. Removing governmental and other constraints to housing investment; and
5. Promoting fair and equal housing opportunities.

A critical measure of compliance with the State Housing Element law is the ability of a jurisdiction to accommodate its share of the Regional Housing Needs Allocation (RHNA). The 2014–2019 Regional Housing Need Plan adopted by the Sierra Planning Organization allocates 530 housing units to the City of Grass Valley. Of the 530 total units, 220 units should be available to the above-moderate income category, 100 should be available to the moderate income category, and 210 of those units should be affordable to low- and very low-income households. Grass Valley is not responsible for actual construction of these units. However, Grass Valley is responsible for creating a regulatory environment that can accommodate these housing units (City of Grass Valley 2014).

4.3 IMPACTS

Methods of Analysis

As discussed previously, population growth is generally characterized as a social and economic effect and is not considered a physical effect on the environment. CEQA provides that economic or social effects are not considered significant effects on the environment unless the social and/or economic changes are connected to physical environmental effects.

Because the project's potential to cause population growth is analyzed in terms of the impacts of growth on the physical environment, this analysis focuses on whether the population growth attributed to the project would result in environmental effects not otherwise evaluated in this EIR. For example, a significant impact could occur if a project would cause growth beyond that which is anticipated for the area in which the project would be located, resulting in inadequate infrastructure to serve the area. Population growth associated with a project could also have a significant impact on the environment if that growth would occur in an undeveloped area that requires extensive infrastructure development and could promote future growth in that previously undeveloped area.

Significance Criteria

Potentially significant impacts associated with population and housing have been evaluated using the following criteria. Would the project cause a significant adverse change in the physical environment by:

- Inducing substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?
- Displacing substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?
- Displacing substantial numbers of people, necessitating the construction of replacement housing elsewhere?
- Reducing the affordable housing supply, impairing the Town's ability to meet its RHNA obligations, or creating a substantial increase in demand for affordable housing?

Impact Discussion

Impact 4-1: Would the project induce substantial population growth in the area?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A

Alternative A proposes to construct 90 units (20 one bedroom, 50 two bedroom, and 20 three bedroom). According to the City's Housing Element, the average household size is 2.04 whereas the average family size is 2.78. Based on the average household size, the proposed project would add approximately 184 people to the City.

According to the City's Housing Element, the population of Grass Valley increased by approximately 15% between 2000 and 2010, with an average annual growth rate of 1.5%. In 2010, the U.S. Census documented the population of Grass Valley as 12,860, which rose to 13,041 by 2018 (California Department of Finance 2018b). Implementation of the project would result in a total population of 13,225, a 1.41% increase over the 2018 population. Population growth since 2012 has been flat, with some years showing a slight (fewer than 30 people) increase and some years showing a slight decrease. Thus, to project population in the year 2020 (the year in which the project is assumed to be fully built out), the average annual growth rate identified in the Housing Element for the period between 2000 and 2010 was used. Thus, the City is estimated to have a population of 13,431 in 2020 without construction of Alternative A and 13,615 with construction of this alternative. Alternative A would represent the equivalent of a single year of population growth. Given the flat population growth since 2012, this slight increase in growth would not result in the City exceeding historic average growth rate or reaching a total population that is greater than the estimated population range in the City's General Plan, including the Housing Element. The population increases of approximately 1.5% do not represent substantial increases and would not result in significant impacts other than the environmental effects identified throughout this EIR (such as increasing traffic, generating air pollutants, and increasing public service/utility demands).

In addition to residential units, the project would involve construction of approximately 178,960 square feet of commercial building space, which is expected to primarily consist of restaurants and retail sales. According to the Dorsey Marketplace Economic Impact Analysis (Appendix D), the project would generate between 225 and 245 retail jobs at project buildout. Another ±30 jobs would be expected at full occupancy of the other commercial space. Property management and maintenance staff at the residential units could add another three jobs, bringing total project

employment to between 260 and 280 jobs. It is assumed that workers who may be residents of the project site, other areas within the city, or surrounding areas would fill these jobs.

Infrastructure improvements associated with the proposed project are discussed elsewhere in this Draft EIR, including Chapter 8, Transportation, and Chapter 14, Public Services and Utilities. The improvements primarily represent the project's infrastructure demands, which would be sized to accommodate the project and therefore would not support additional growth. As discussed in Chapter 2, Project Description, the project would be required to construct internal roads and on-site pipelines for potable water, stormwater drainage, and sewage conveyance to serve the proposed project. As the project consists of infill development, this infrastructure would only support the project and would not support additional development or growth outside of the city boundary. Additionally, commercial and residential infill development is consistent with the policies included in the City's General Plan, such as LUP-8, -9, and -23, which encourage and facilitate mixed-use development on fill sites and provide for higher residential densities on infill sites. As described in Chapter 3, Land Use, the project would require a General Plan Amendment to be consistent with the City's General Plan. This increase in population would result in an impact that is less than significant because the population growth expected from the proposed project would be consistent with the growth anticipated by and accounted for in the General Plan. The project would support the City's growth and economic development goals by generating new employment, shopping, and housing opportunities. Overall, impacts would be **less than significant**.

Alternative B

Alternative B proposes to construct 171 units (38 one bedroom, 95 two bedroom, and 38 three bedroom). Based on the average household size in the City of 2.04 people (City of Grass Valley 2014), Alternative B would add approximately 349 people to the City.

Based on the year 2018 population of 13,041 people (California Department of Finance 2018b), construction of Alternative B would raise the City's population to 13,390 people if it were fully built out immediately. This would be a 2.7% increase compared to the existing population. With the assumed population in 2020 of 13,431 in 2020 without construction of Alternative B, this alternative would lead to a total city-wide population of 13,780. Given the relatively flat population growth in the City since 2012, this slight increase in growth would not result in the City exceeding historic average growth rates or reaching a total population that is greater than the estimated population range in the City's General Plan, including the Housing Element. The population increases of approximately 2.7% do not represent substantial increases and would not result in significant impacts other than the environmental effects identified throughout this EIR (such as increasing traffic, generating air pollutants, and increasing public service/utility demands).

In addition to residential units, the project would involve construction of approximately 104,350 square feet of commercial space and 8,500 square feet of office space. According to the Dorsey Marketplace Economic Impact Analysis (Appendix D), Alternative B would produce between 170 and 190 total jobs within the commercial, retail and office uses within the project site and including the potential for property management and maintenance staff at the residential units. There would be fewer total jobs than under Alternative A, but the office jobs would be likely to be at higher pay ranges than the commercial and retail jobs. It is assumed that workers who may be residents of the project site, other areas within the city, or surrounding areas would fill these jobs.

Infrastructure improvements associated with this alternative are discussed elsewhere in this Draft EIR, including Chapter 8 and Chapter 14. The improvements primarily represent the project's infrastructure demands, which would be sized to accommodate the project and, therefore, would not support additional growth. As discussed in Chapter 2, the project would be required to construct internal roads and construct internal roads and on-site pipelines for potable water, stormwater drainage, and sewage conveyance to serve the proposed project. As the project consists of infill development, this infrastructure would only support the project and would not support additional development or growth outside of the city boundary. Additionally, commercial, residential and office infill development is consistent with the policies included in the City's General Plan, such as LUP-8, -9, and -23, which encourage and facilitate mixed-use development on fill sites and provide for higher residential densities on infill sites. As described in Chapter 3, the project would require a General Plan Amendment to be consistent with the City's General Plan. This increase in population would result in an impact that is less than significant because the population growth expected from the proposed project would be consistent with the growth anticipated by and accounted for in the General Plan. The project would support the City's growth and economic development goals by generating new employment, shopping, and housing opportunities. Overall, impacts would be **less than significant**.

Impact 4-2: Would the project displace substantial numbers of existing housing and/or people, necessitating the construction of replacement housing elsewhere?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

The project site is undeveloped and is not currently occupied; therefore, the proposed project would not remove or displace existing housing or people. Alternative A would construct 90 multifamily dwelling units while Alternative B would construct 171 multifamily dwelling units; both alternatives would increase housing at the project site. **No impact** would occur related to housing displacement.

Impact 4-3: Would the project reduce the affordable housing supply, impair the City's ability to meet its RHNA obligations, or create a substantial increase in demand for affordable housing?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A

The project site is undeveloped. No housing exists within the project site and no affordable housing would be demolished or otherwise removed from the City's affordable housing supply.

As discussed in Section 4.1, Environmental Setting, the City is required to allocate sufficient sites to accommodate 530 housing units to satisfy the housing needs from 2014 to 2019. Of that total, 220 units should be available to the above-moderate income category, 100 should be available to the moderate income category, and 210 of those units should be affordable to low- and very low-income categories (City of Grass Valley 2014). The City of Grass Valley has a 21.9% poverty rate, which is higher than the neighboring Nevada County communities (City of Grass Valley 2014). Grass Valley is responsible for creating a regulatory environment that can accommodate these housing units (City of Grass Valley 2014). Per the Housing Element, sites zoned for nonresidential use that can be redeveloped for, and as necessary, rezoned for residential use may accommodate needed housing.

Alternative A proposes to provide 90 dwelling units consisting of 20 three-bedroom units, 50 two-bedroom units, and 20 one-bedroom units. The units would range in size from 1,013 to 1,600 square feet and all would be offered for rent at market-rates. These residences could satisfy a portion of the City's need for 100 moderate and 220 above-moderate-income housing units. The project would not contribute to filling the City's need for very low-income units but may contribute to the City's need for low-income units. As described in Chapter 3, the project would require a General Plan Amendment and rezone to change land currently designated for Business Park to Commercial and Residential Urban High Density, and a rezone from Corporate Business Park (CBP) to Commercial (C-2) and Multiple Dwelling Residential (R-3). The City has approved other similar zone changes: since 2003, the City has approved development of 229 dwelling units on 37 acres of non-residentially zoned land (City of Grass Valley 2014). With the amendment and rezone, the project would contribute towards filling the region's housing needs in a manner consistent with the Housing Element.

As discussed in Impact 4-1, Alternative A would provide a 3:1 jobs/housing balance; Alternative A would generate between 270 and 290 jobs within the project site. It is expected that these jobs would offer a variety of pay ranges, commensurate with the types of businesses

that may locate at the site. While some of the individuals that work in the lower pay range jobs available at the project site may have incomes at the moderate and low ranges, it is not expected that the majority of the jobs generated on site would add to the City's demand for affordable housing. The proposed apartments may provide housing opportunities for some of the individuals that would work at the project site.

Because Alternative A would not reduce the City's affordable housing supply or create a substantial increase in demand for affordable housing, this project would result in **less-than-significant** impacts associated with affordable housing.

Alternative B

Alternative B proposes to provide 171 dwelling units consisting of 38 three-bedroom units, 95 two-bedroom units, and 38 one-bedroom units. All units would be market-rate and would range in size from 1,013 to 1,600 square feet. Like Alternative A, the residences constructed under Alternative B could satisfy a portion of the City's need for 100 moderate and 220 above-moderate-income housing units and may contribute to meeting the City's need for low-income units but would not contribute to filling the City's need for very low-income units.

Like Alternative A, this alternative would require a General Plan Amendment and rezone to change land currently designated for Business Park to Commercial and Residential Urban High Density, and a rezone from CBP to C-2 and R-3. The City has approved other similar zone changes: since 2003, the City has approved development of 229 dwelling units on 37 acres of non-residentially zoned land (City of Grass Valley 2014). With the amendment and rezone, Alternative B would contribute towards filling the region's housing needs in a manner consistent with the Housing Element.

As discussed in Impact 4-1, Alternative B would provide a 1:1 jobs/housing balance; Alternative B would generate between 170 and 190 total jobs within the commercial, retail and office uses within the project site. There would be fewer total jobs than under Alternative A, but the office jobs would be likely to be at higher pay ranges than the commercial and retail jobs. While some of the individuals that work in the lower pay range jobs available at the project site may have incomes at the moderate and low ranges, it is not expected that the majority of the jobs generated on site would add to the City's demand for affordable housing.

Because Alternative B would not reduce the City's affordable housing supply or create a substantial increase in demand for affordable housing, this project would result in **less-than-significant** impacts associated with affordable housing.

Impact 4-4: Would the project contribute to significant cumulative impacts associated with population, employment, and housing?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The geographic range for assessing cumulative impacts associated with population and housing is the City of Grass Valley. Other past, present, and reasonably foreseeable projects within the City that could add to the City's population are identified in Table 3-1 of Chapter 3.

In addition to the 90 dwelling units included in the proposed project, the projects in the cumulative scenario could generate 529 dwelling units spread among several development sites, an additional 700 dwelling units under the Loma Rica Ranch Specific Plan, and 160 senior apartments. Based on the City's the average household size, these units could generate 2,833 new residents. The City's General Plan provides overarching guidance for development within City current and future limits, including planning for new residential and commercial land uses. The General Plan and Housing Element provide for development of a balanced land use pattern that meets the housing and economic development needs of the City's residents, including provision of a variety of housing types and prices. The General Plan EIR (City of Grass Valley 1999), found that the General Plan would increase the population by 7,395 people and accommodate up to 2,820 new residences between 1999 and 2020 to reach a total population of 23,395 in 2020. The plan also found that development would occur within the existing City boundaries and the City's Sphere of Influence, and development of roadways or infrastructure would occur within the planning area boundary. Additionally, the basic projections developed during the General Plan process for the 20-year planning period (to the Year 2020), including population, housing units, employment, and demands for land, indicate that less than full build-out would occur by the Year 2020. Therefore, the General Plan EIR viewed full buildout (beyond 2020) as the cumulative scenario. The EIR expected a total population of 26,299 at buildout, with an additional 807 housing units added from 2020 to buildout.

Actual growth has not occurred as quickly the General Plan EIR projected; thus, the City's population is well below the General Plan's estimates for 2020 and Plan Buildout. As discussed in Impact 4-1, the City's population growth has been relatively flat since 2012 and the current projected population in 2020 is 13,431. The addition of 184 people and 90 housing units under Alternative A or 171 housing units and 349 people under Alternative B would not exceed either the General Plan EIR's 2020 or Plan Buildout scenarios. Further, the dwelling units could contribute towards the City's attainment of its Regional Housing Needs Allocation targets for moderate and low income households. As described in the City's Housing Element the Regional

Housing Needs Allocation called for an additional 530 housing units (City of Grass Valley 2014). Implementation of the General Plan would ensure that housing needs are met and that environmental impacts associated with increased population are mitigated; therefore, impacts associated with population and housing in the cumulative condition would be **less than significant**. As such, there is no cumulative impact to which the project could contribute.

4.4 MITIGATION MEASURES

No mitigation measures are required.

4.5 REFERENCES CITED

California Department of Finance. 2018a. *Report E-1: Population Estimates for Cities, Counties, and the State January 1, 2017 and 2018*. May 1, 2018.

California Department of Finance. 2018b. *Report E-5: Population and Housing Estimates for Cities, Counties, and the State, January 1, 2011–2018, with 2010 Benchmark*. May 1, 2018.

City-Data. 2017. Grass Valley, California (CA) income map, earnings map, and wages data. Accessed at: http://www.citydata.com/income/incomeGrassValleyCalifornia.html. Accessed on February 24, 2017.

City of Grass Valley. 1999. *City of Grass Valley General Plan Update Environmental Impact Report*. Prepared for the City of Grass Valley by Quad Knopf. August 1999.

City of Grass Valley. 2014. *2014–2019 Housing Element*. September 2014.

CHAPTER 5
AESTHETICS

This chapter identifies changes in the visual environment that would be experienced by existing off-site viewers with exposure to the proposed Dorsey Marketplace (proposed project) site. In addition, the analysis discusses the potential impacts of the development of the proposed project relative to visual compatibility with existing development and consistency with the City of Grass Valley (City) General Plan goals and policies related to aesthetics and design.

Information contained in this section is based on review of existing documentation, including the following:

- City of Grass Valley 2020 General Plan (City of Grass Valley 1999)
- City of Grass Valley Community Design Guidelines (City of Grass Valley 2010)

One comment was received in response to the Notice of Preparation (NOP) concerning aesthetic resources. The comment submitted by the Wolf Creek Community Alliance stated that existing trees and vegetation on the hilltop of the proposed project site are an important visual community resource, and emphasized the rarity of the site's McNab cypress. The NOP and comments received in response to the NOP are included in Appendix A.

5.1 EXISTING SETTING

Regional Landscape Setting

The approximately 27-acre project site is located in the City of Grass Valley in Nevada County. The project region is characterized with varied topography, from nearly flat areas to rolling hills to steep slopes. The project region also includes a wide range of land use intensity – from dense commercial and residential development in and surrounding the City of Grass Valley downtown and commercial centers like Brunswick basin, to more suburban levels of development in residential subdivisions located throughout the City, to more rural development in the outlying areas of the City and in unincorporated portions of Nevada County.

Local Landscape Setting

The project site was the former location of the Spring Hill Mine, which operated on the site intermittently during the late 1800s and through the 1940s (Appendix J-1). Remnants of the Spring Hill Mine are still evident on the project site primarily in the western and central portions of the site. The Spring Hill shaft is located in the central portion of the property and an additional capped shaft is located approximately 500 feet northeast of the Spring Hill shaft. A third, open shaft is located approximately 400 feet southwest of the Spring Hill shaft. Remnants of the bin foundation,

approximately 10 feet by 15 feet by 8 feet in height, are located between the Spring Hill shaft and the mill located to the southeast of the shaft. The mill foundation, approximately 50 feet by 75 feet, is present on site approximately 100 feet east of the remaining bin foundation. Piles of mine waste rock are present in the central and western portions of the site (Appendix J-1).

Rock outcrop is present at several locations in the western, northern, and eastern portions of the property. A large patch of mixed coniferous forest dominated by ponderosa pines (*Pinus ponderosa*) is located in the central portion of the project site. The southern portion of the project site consists of a mix of McNab cypress trees, whiteleaf manzanita, cottonwood forest and developed and disturbed land. The western boundary of the project site along State Route (SR) 20/49 is dominated by developed and disturbed land with whiteleaf manzanita and McNab cypress trees along the north eastern corner (Appendix E).

Land use designations under the General Plan for properties surrounding the project include Urban Medium Density Residential to the north and east, Manufacturing/Industrial to the south, and Office/Professional on the west side of SR 20/49 (City of Grass Valley 1999). The project site is boarded by SR 20/49 to the west and Dorsey Drive to the north. The Grass Valley Terrace Apartments are located east of the project site and further north beyond Dorsey Drive is the Springhill Garden Apartments. Gold Country Gymnasium and Bikram's Yoga are located southeast of the project site and three self-storage facilities (Old Barn Ernie's and Springhill) as well as Bub Enterprises Inc. are located to the south.

Sensitive Receptors: Key Viewpoints and Viewer Sensitivity

Viewers that may be sensitive to the proposed development are the residents in the existing single family homes, mobile homes, and multifamily apartments to the north and east of the project boundary; visitors to the Sierra Nevada Memorial Hospital and Golden Empire Nursing and Rehab Center, which are located directly west of the project boundary on the other side of SR 20/49; businesses to the south of the project boundary; and travelers along SR 20/49, directly west of the project site. This portion of SR 20/49 is not designated a scenic highway (Caltrans 2016); the views from this portion of highway are generally characterized by urban development. Visual sensitivity of the viewers is expected to be moderate overall, typical of residential receptors. There is a wide window in which relatively unconstrained views of the project site are available for travelers on SR 20/49 south of Dorsey Drive.

To describe the existing conditions in the area, four locations where publicly accessible views of the project site are available were selected for analysis, as shown on Figure 5-1, Key Viewpoint Locations.

Key Viewpoint 1: Looking North from Terminus of Spring Hill Drive

The viewpoint from Spring Hill Drive along the southern project boundary consists of grassland and interspersed woodland. This view is representative of the view for employees and visitors to the businesses along this road.

Key Viewpoint 2: Looking South from Dorsey Drive at Springhill Gardens Apartments

The viewpoint from Dorsey Drive is representative of the views from the existing residences in the Springhill Gardens Apartments, and is also similar to the views from the SR 20/49 on and off ramps intersection with Dorsey Drive. The view consists of the vacant and unvegetated area in the northern portion of the project site and a mixture of tall ponderosa pine woodland on the top of the hill, and low, open areas with shrubs. Views of SR 20/49 are to the southwest and views of wooded ridgelines are to the southeast.

Key Viewpoint 3: Looking East from SR 20/49 south of Dorsey Drive

The viewpoint from northbound SR 20/49 approaching Dorsey Drive and looking east over the project site consists of rooftops of industrial buildings and parking lots to the south of the project boundary, tall woodland on the slope of the project site's hill, and tree-covered ridgelines beyond the project site. The off-ramp to Dorsey Drive is higher in elevation and blocks the direct easterly view of the project site from SR 20/49, although the tops of the taller trees in the center of the project site are visible. On the off-ramp, the lower (southern) portion of the project site is more visible than from SR 20/49.

Key Viewpoint 4: Looking East from Terminus of Glasson Way

The viewpoint from the terminus of Glasson Way, where the Sierra Nevada Memorial Hospital is located, consists of clear views of woodland at the upper elevations of the project site sloping downhill to the lower elevations of the project site. Views of the ridgelines to the east are visible. This view is representative of what hospital visitors may see when looking east, and is also similar to views from other neighboring businesses on the west side of SR 20/49.

Viewpoints Considered but Rejected

The following viewpoints were considered but rejected because these locations do not offer unobstructed views of the project site or are not publicly accessible:

Key Viewpoint 5: Looking Southwest from Terminus of Grass Valley Terrace Apartments

The viewpoint is representative of the view from existing residences in Grass Valley Terrace Apartments. The view to the southwest from the apartment buildings consists of ponderosa pine woodland sloping uphill from the apartment complex, with the initial portion of trees and hillside

located on the Grass Valley Terrace Apartments parcel. While views of the project site are possible from this location, this viewpoint is not publicly accessible, and thus is not appropriate for analysis in the EIR.

Key Viewpoint 6: Looking West from Grass Valley Senior Apartments on Dorsey Drive

The viewpoint from Grass Valley Senior Apartments on Dorsey Drive consists of the flat and largely unvegetated area in the northern portion of the project site as well as the trees and shrubs located along the eastern project boundary, with the ponderosa pine woodland vegetation visible in the mid-ground and views of tall trees located beyond the project site in the background. While views of the project site are possible from this location, this viewpoint is not publicly accessible, and thus is not appropriate for analysis in the EIR.

Viewpoint 7: Looking Northeast from 470 Idaho Maryland Road

The viewpoint from Caliber Collision, 470 Idaho Maryland Road, consists of open grassland gently sloping uphill, and industrial buildings associated with Old Barn Self Storage further up the hill, 175 Spring Hill Drive. The project site is not visible from Idaho Maryland Road. However, ponderosa pines on the project site are visible from further uphill on the Caliber Collision property.

Viewpoint 8: Looking Northwest from Idaho Maryland Road at Spring Hill Drive

The viewpoint from Idaho Maryland Road looking northwest along Spring Hill Drive consists of roadway and business park buildings, as well as some interspersed vegetation and landscaping. The tops of some of the ponderosa pines on the project site are visible, but the ground level portion of the project site is not visible from this location.

Viewpoint 9: Looking East from Southbound SR 20/49 north of Dorsey Drive

The viewpoint from southbound SR 20/49 looking southwest approaching the Dorsey Drive off-ramp consists of a brick highway barrier and tall trees. The highway increases in elevation as it approaches Dorsey Drive, and the project site remains screened from view.

Viewpoint 10: Looking East from Dorsey Drive at Comstock Court

The viewpoint along Dorsey Drive near Comstock Court consists of the Grass Valley Senior Apartments and Grass Valley Terrace Apartments and immediate vegetation. While the taller ponderosa pines on the project site are visible, the ground-level view of the project site is blocked. Additionally, the proposed project would grade the hill that supports the majority of the existing ponderosa pines, and the proposed buildings would be lower and less visible than the tops of the existing trees. Because of the existing development visible from this viewpoint and immediate vegetation acting as a buffer, additional buildings at a distance would not constitute a substantial change in the visual landscape.

5.2 REGULATORY SETTING

Federal Regulations

No federal regulations pertaining to aesthetics are applicable to the proposed project.

State Regulations

California Department of Transportation Scenic Highway System

The California Department of Transportation (Caltrans) administers the state Scenic Highway Program to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways (California Streets and Highways Code, Section 260 et seq.). The state Scenic Highway Program includes a list of officially designated highways and highways that are eligible for designation. If a highway is listed as eligible for designation, it is part of the Scenic Highway Program, and care must be taken to preserve its eligibility status. The program encompasses the regulation of land use and density of development adjacent to scenic highways and includes other restrictions applicable to development within the scenic highway viewshed.

There is one officially designated highway and three eligible highways within Nevada County. The officially designated highway is SR 20 from post-mile 33.0 at Skillman Flat Campground to post-mile 39.1 0.50 miles east of Lowell Hill Road. One additional portion of SR 20 from SR 49 near Grass Valley (post-mile 12.2) to Interstate 80 near Emigrant Gap (post-mile 45.7) is eligible for listing. One portion of SR 174 from Bear River at the Placer city limits (post-mile 0.0) to the Grass Valley city limits (post-mile 10.2) is eligible for listing. One portion of SR 49 is eligible for designation from post-mile 15.1 at SR 20 near Nevada City to post-mile 47.5 at SR 89 near Sattley (Caltrans 2016).

Local Regulations

Grass Valley Community Design Guidelines

The City's Community Design Guidelines (City of Grass Valley 2010) specify layout and design, architectural treatments, and specific exterior materials and lighting guidelines to ensure that design is taken into consideration at the time development is proposed. The Community Design Guidelines are intended to provide a clear and common understanding of the City's expectations regarding aesthetic value and functionality of development while maintaining a balance between accommodating growth, new development and revitalization, and preserving the natural assets and historical heritage of the City.

The design goals of the Community Design Guidelines include the following:

- Preserve and enhance the existing community while encouraging diversity through innovative, unique and creative design solutions and architectural styles.

- Conserve Community attributes that provide a sense of natural setting and continuity with the past by integrating the natural and built environment through preservation and enhancement of existing on-site natural features, historical or significant structures, views of the surrounding natural environment, neighborhood integrity, and design.
- Assure that new development is sensitive to and strengthens the existing built and natural environment.
- Create, maintain and enhance civic places through the emphasis of functional relationships and integration of the Community rather than the separation and barriers between adjacent development and uses.
- Foster development that supports a variety of transportation modes and facilitates pedestrian mobility, convenience, and safety.
- Balance aesthetic and functional considerations of design.
- Encourage designs, which result in the conservation and preservation of natural resources through the efficient use thereof.

Grass Valley 2020 General Plan

The project site is subject to policies set forth in the Grass Valley 2020 General Plan (Grass Valley 1999). As described in the Conservation Open Space (COS) element, the 1972 Grass Valley General Plan established parts of SR 20 and SR 49 as scenic highways, and their routes near and through Grass Valley were designated scenic corridors. The Grass Valley General Plan also recognizes that the main scenic resources in the city are the views available from many roadways to surrounding open space areas and vistas of the foothills and mountains, and that aesthetic qualities of hillsides and ridgelines should be protected. The 1982 General Plan reinforced previous scenic highway efforts through new policies and actions designed to enhance the City's "entryways" along SR 49 and SR 20. Those policies included strengthening entryway identity through landscaping, preserving and promoting the scenic quality of City streets, preserving and promoting visually pleasing arterials and highways, and regulate signs and billboards.

The COS element of the General Plan determines goals and objectives related to preservation and enhancement of natural resources and provides policies and implementation actions designed to achieve them. The following goals (G), objectives (O), and policy (P) are applicable to the proposed project.

4-COSG: Protect and enhance town entryways, visual corridors and important viewsheds including ridgelines.

11-COSO: Identification of particular corridors and views requiring protection or enhancement.

12-COSO: Identification of specific aesthetic considerations important to the protection and enhancement of particular corridors and views.

6-COSP: Prevent excessive alteration of the natural topography.

The Community Design (CD) Element of the General Plan concerns the built character, order and essence of the City. This element determines goals and objectives and provides policies and implementation actions related to preservation of historical and open spaces while accommodating growth and revitalization. The following goals (G), objectives (O), and implementation action (I) are applicable to the project.

1-CDG: Preserve and enhance the existing community.

3-CDO: Recognition and protection of major views in the planning area, with particular attention to notable buildings, open space, hillsides, valleys, ridgelines, and forested views.

3-CDG: Assure that new development is sensitive to and strengthens the existing built and natural environment.

12-CDO: Creation of new development areas that are unique and interesting.

4-CDG: Create, maintain and enhance civic places.

17-CDO: Design of new development and infill projects that create a safe and visually interesting environment for the residents and visitors of Grass Valley.

10-CDI: Require shielding or downward direction of lighting and require that illumination be so arranged as to reflect away from adjoining properties.

City of Grass Valley Municipal Code

Sections 12.20.030 and 17.30.060 of the Municipal Code defines allowable heights and intensity for outdoor lighting, and provides light design guidelines (City of Grass Valley 2017, City of Grass Valley 2018).

5.3 IMPACTS

Methods of Analysis

The value attached to changes in visual character is largely subjective. This Draft EIR evaluates whether the project would result in a "substantial adverse effect" to existing scenic resources and the visual character of the site and surrounding area.

A description of the project site and the surrounding area was prepared based on site visits and review of aerial photographs. This EIR relies upon the City's General Plan to determine what visual elements have been deemed valuable by the community. The impact analysis focuses on the manner in which development could alter the visual elements or features defined as important visual resources by the General Plan that exist in or near the project site.

The project site does not contain any scenic vistas, is not a feature within any scenic vistas, is not designated as a visual resource in any City policy documents and is designated for urban development (as opposed to Open Space). Therefore, development of the project would have no effect on any scenic vistas. In addition, there are no scenic highways in the vicinity of the project site and development of the project would have no effect related to damage to scenic resources visible from a state scenic highway. Therefore, these issues are not further addressed.

Significance Criteria

The significance criteria in the aesthetics section of Appendix G of the California Environmental Quality Act (CEQA) Guidelines were used to establish the criteria for determining whether the proposed project would have a significant environmental impact on existing visual resources (14 CCR 15000 et seq.). The project would have a significant impact on aesthetics if it would:

- Substantially damage scenic resources, including but not limited to, trees, rock outcroppings, and historic buildings.
- Substantially degrade the existing visual character or quality of the project site and its surroundings.
- Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

Impact Analysis

Impact 5-1: Would the project substantially damage scenic resources, including but not limited to, trees, rocks, outcroppings, and historic buildings?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 5a	Mitigation Measure 5a
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The City's General Plan includes objectives for the protection of major views in the planning area, including hillsides, ridgelines and forested areas. The project site is not located along a ridgeline, but does include a forested hillside area. Scenic resources present within the project site include

areas of ponderosa pine and McNab cypress woodland, manzanita and other small shrubs, and small rock outcrops. Many of the trees within the ponderosa pine woodland are diseased and dying, as evident in the photographs of the project site provided in Figure 5-2a, Figure 5-2b, and Figure 5-2c, Existing Site Photographs. Alternative A and Alternative B would involve a similar area of disturbance within the project site and thus would result in the same impacts to scenic resources due to the tree removal necessary to construct either alternative.

Remnants of the Spring Hill mine are scattered primarily in the western and central portions of the site. The Spring Hill mine was determined not eligible for listing on either the California Register of Historic Resources or the National Register of Historic Places, thus it is not considered a historic resource (see Chapter 7, Cultural Resources). Further, the remnants consist of five concrete foundation features that do not provide any scenic qualities and they are not visible from offsite locations. Thus these are not considered a scenic resource. Under both Alternative A and Alternative B, the project proposes to remove the mine remnants as well as trees and other vegetation from the majority of the site to construct the proposed commercial and residential uses.

Impacts to the scenic resource provided by the existing tree canopy cover from ponderosa pines and McNab cypress woodland would occur in the short term after tree removal and as the project landscaping matures. The site supports 6.6 acres of ponderosa pine woodland, and 3.3 acres of McNab cypress woodland; these areas support moderately dense trees. In addition, there are approximately 60 trees outside of these woodland vegetation communities that are considered protected trees under the Grass Valley Tree Preservation Ordinance, as described in Chapter 6, Biological Resources. The majority of the trees on site would be removed in support of the excavation and soil remediation needed to address soil contamination and in support of construction of the proposed roads, parking, structures, and other site improvements necessary to support the proposed development. As required by the City's Tree Preservation Ordinance, the project would be required to plant either a one and one-half inch caliper healthy and well-branched deciduous tree or a five to six-foot tall evergreen tree for each tree removed. The proposed landscaping plans for both Alternative A and Alternative B demonstrate that all tree planting required under the Tree Preservation Ordinance would be accommodated within the project site. Although the Tree Preservation Ordinance allows for planting replacement trees off-site in locations approved by the City and/or paying the City's in-lieu fee for tree mitigation, it is not expected that either of these options would be necessary. To ensure that sufficient tree planting occurs within the project site to retain some of the scenic value provided by the existing trees on site, Mitigation Measure 5a reiterates the requirements of the Tree Preservation Ordinance to replace trees with onsite replanting of either a one and one-half inch caliper healthy and well-branched deciduous tree or a 5–6-foot-tall evergreen tree for each protected tree removed, in compliance with the City's Tree Preservation Ordinance. This may include planting individual McNab cypress and/or Fremont cottonwood trees. Refer to Chapter 6, Biological Resources, regarding the loss of the McNab cypress woodland and Fremont cottonwood vegetation communities within the project site. Mitigation Measure 6e requires that the project applicant provide compensation for the loss of McNab cypress

woodland and cottonwood forest from the project site through a combination of on-site replanting and off-site restoration sufficient to ensure no net loss of habitat functions or values. To the degree that on-site replanting undertaken in implementation of Mitigation Measure 6e includes planting of individual trees that meet the size standards of Mitigation Measure 5a, those trees would also satisfy the requirements of Mitigation Measure 5a.

The project proposes to plant trees and other landscaping throughout the project site, as shown in Figures 5-3a and 5-3b, Conceptual Views. While the views in this figure reflect Alternative A, they are similar to the proposed landscaping and anticipated views under Alternative B. Trees and other landscaping would be planted along the project site frontage on Dorsey Drive, along the eastern project site boundary, and along the southern project site boundary. Landscaping would also be provided at both of the site entrances, throughout the parking lots, and along pedestrian zones. The proposed design includes a variety of deciduous ornamental, deciduous shade and coniferous trees, as well as shrubs, for the frontages of the project site. To ensure that the site landscaping provides sufficient and appropriate vegetation to provide for replacement of the existing scenic values provided by the on-site trees, Mitigation Measure 5a identifies performance standards that must be met by the final landscaping plans for the project site. This includes providing sufficient new trees to replace the removed trees consistent with the City's Tree Preservation Ordinance, providing trees and shrubs at the project site entrances from Dorsey Drive and Spring Hill Drive, dense tree planting along the southern, western, and eastern project boundaries, and planting sufficiently large canopy trees in the parking areas to provide 50% shade in 15 years in accordance with the Grass Valley Zoning Ordinance. Although the new trees may not reach the same height as the existing ponderosa pines, once mature, the project landscaping would provide a canopy cover similar to the canopy cover that exists in the surrounding environment. The project landscaping would not incorporate the existing small rock outcroppings, but these features are not visible from off-site locations.

With compliance with the City's Tree Preservation Ordinance as demonstrated on the proposed landscaping plans and replacement of some of the vegetation lost to development through site landscaping (particularly around the perimeter of the site) in accordance with Mitigation Measure 5a, the project's impacts related to loss of or damage to scenic resources would be **less than significant**.

Impact 5-2: Would the project substantially degrade the existing visual character or quality of the project site and its surroundings?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 5a	Mitigation Measure 5a
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The project site is an infill lot that is surrounded by development on all sides and the City of Grass Valley General Plan anticipates that the site would be developed to an urban level. Additionally, the property is not within a scenic highway corridor and does not provide any scenic vistas. The project site is located immediately to the south and west of existing apartment, mobile home, and single-family neighborhoods, north of existing light industrial buildings, and east of SR 20/49, as shown in Figure 2-3, Project Site, in Chapter 2, Project Description. As shown on Figures 5-2a through 5-2c, the project site currently consists of unimproved, previously disturbed open land with a mixture of woodland, low shrubs, and a large flat area surfaced with gravel along the project site's frontage on Dorsey Drive.

The project consists of infill among existing development within the City of Grass Valley. Under Alternative A, the project proposes to place two- and three-story apartment buildings in the southeastern corner of the site, bordering the existing apartment complexes along Dorsey Drive east of the project site, and to place commercial development in the northern and western portions of the site, bordering the industrial development to the south and SR 20/49 to the west. Under Alternative B, the project proposes the same residential uses in the southeastern corner of the site. It would develop a smaller commercial development across the northern portion of the site, and place two- and three-story buildings that support a mixture of office space and multifamily residential units in the southwestern corner of the site.

Physical compatibility of the project under both alternatives with surrounding and nearby land uses and properties is addressed more thoroughly within the appropriate resource sections of this Draft EIR (i.e., Land Use, Air Quality, Noise); this analysis considers the changes in the project site's visual character as observed from each of the four key viewpoints.

The proposed project would comply with the City's Design Standards, Construction Standards, and Standard Details, which address requirements such as setbacks, building heights, lot coverage, street design, and landscaping. The project plans include use of colors, materials, and accent features that reflect the history and current visual character of the City of Grass Valley, as shown on Figures 5-4 through 5-6, Alternative A Building Elevations 1, 2, and 3, and on Figures 5-7 through 5-9, Alternative B Building Elevations 1, 2, and 3, respectively.

Alternative A and Alternative B propose similar development intensity and design, and involve a similar area of disturbance during project construction. The primary change in the visual impact of the project between the two alternatives is in the southwestern corner of the site and along the western project site boundary. Views of each alternative from the four key viewpoints are described as follows and proposed elevations of the buildings that would be visible from the viewpoints are shown on Figures 5-4 through 5-9.

Key Viewpoint 1

Key Viewpoint 1 represents views from the terminus of Spring Hill Drive, where several industrial businesses are located. The views from this viewpoint consist of grassland and interspersed woodland, as shown on Figures 5-2b (southeast corner) and 5-2c (southwest corner).

Alternative A would replace the existing terrain in this viewshed with 90 apartment units in two- and three-story buildings, a 3,200-square-foot clubhouse, and three major commercial/retail tenant spaces, with "Major 4" being located nearest to this viewpoint. Elevations of this building as well as the apartment buildings are shown on Figure 5-4.

Alternative B would have similar development to Alternative A in the southeastern corner of the site, with 90 apartment units in two- and three-story buildings. The clubhouse would be placed on the western side of Spring Hill Road, and would be visible from this viewpoint. The development in the southwestern portion of the project site would consist of office spaces and more apartment units, again in a series of two- and three-story buildings, with apartment units facing south. Elevations of the buildings proposed for the southern portion of the project site under Alternative B are provided on Figure 5-7.

Under either alternative, the project would also construct infrastructure (including roads) and install landscaping within each project component and around the boundary of the project site. After project construction and once landscaping matures, views from this viewpoint would consist of a heavily landscaped entrance to the residential and commercial areas. Spring Hill Drive would be extended into the project site. The southwestern border of the site, to the left of Spring Hill Drive, would be screened with densely planted evergreen trees to screen the anchor buildings and service areas. Trees and landscaping would also be planted to the right of Spring Hill Drive. By replacing views of woodland and grassland habitat with residential and commercial/retail land uses, under either Alternative A or Alternative B, the project would result in a **potentially significant** change in the visual character of the site as seen from Key Viewpoint 1.

Key Viewpoint 2

Key Viewpoint 2 represents southerly views for travelers along Dorsey Drive. The view consists of an informal gravel parking lot, open disturbed land with low shrubs, with tall woodland in the

mid-ground. The existing conditions within the northern portion of the site are shown in Figure 5-2a. From some points along Dorsey Drive, southerly views across the project site include forested hills and ridgeline in the background. Views to the west are highly urban, consisting of SR 20/49 and dense office, health care, and residential development on the other side of the highway. The view to the project site looking south along Dorsey Drive near the eastern side of the project site would be replaced by a four-lane entrance to the project site and views of the four small commercial buildings, some of which may include drive-through service, near the site entrance. Further west along Dorsey Drive, southerly views under Alternative A would include the minor tenant commercial spaces proposed for the northwestern portion of the project site while views under Alternative B would include the northern façade of the Major stores proposed for the western portion of the site. Elevations of these buildings under Alternative A are provided in Figure 5-5 while elevations of these buildings under Alternative B are provided in Figure 5-8 The tall trees in the center of the site, which are visible from Dorsey Drive, would be removed and replaced with the proposed commercial land uses and associated landscaping. By replacing views of woodland and unimproved open area with landscaping and residential and commercial/retail land uses, the project would result in a **potentially significant** change in the visual character of the site as seen from Key Viewpoint 2.

Key Viewpoint 3

Key Viewpoint 3 is located along SR 20/49 south of Dorsey Drive. This is the view that drivers and passengers on SR 20/49 would see traveling either northbound or southbound, and while exiting northbound SR 20/49 onto the Dorsey Drive off-ramp. From northbound SR 20/49 approaching the Dorsey Drive off-ramp, drivers can see a clear view of the entire project site, including the rooftops of industrial buildings to the south of the project boundary, tall woodland sloping downhill on the project site, and tree-covered ridgelines beyond the project site. The off-ramp to Dorsey Drive is higher in elevation and blocks the direct easterly view of the project site from a small portion of SR 20/49, although the tops of the taller trees in the center of the project site are visible. The view from the off-ramp, at the higher elevation, provides expansive views of the project site, consisting mostly of open, disturbed land with low shrubs and tall woodland in the center of the site. Drivers on the off-ramp would also approach Dorsey Drive at slower speeds than if they were continuing north on SR 20/49, so drivers would be exposed to the view for more time.

Goals and objectives in the COS element of the General Plan require protection and enhancement of the town's entryways and ridgelines, and identification of aesthetic considerations important to the protection and enhancement of particular corridors and views. The project would be visible from SR 20/49. The existing view would be replaced with landscaping and trees bordering the perimeter of the site, the rear façade of the commercial buildings proposed near the western site boundary, and the front façade of commercial buildings proposed to be placed further east from the highway. Elevations of the buildings that would be visible from this viewpoint under Alternative A are

provided on Figure 5-6 while elevations of the buildings that would be visible from this viewpoint under Alternative B are provided on Figure 5-9. The tall trees in the center of the project site would be removed. The ridgelines to the east would still be visible. Buildings on the project site would be a maximum of three stories high, and would not obstruct views of the ridgelines to the east. However, by replacing views of woodland and open area with residential and commercial/retail land uses, the project would result in a **potentially significant** change in the visual character of the site as seen from Key Viewpoint 3.

Key Viewpoint 4

Key Viewpoint 4 is located at the terminus of Glasson Way near the Sierra Nevada Memorial Hospital. This viewpoint is representative of the view from the hospital and from other nearby buildings bordering the western side of SR 20/49. Foreground views in this area includes the highway, with the project site is the mid-ground. The view consists of clear views of woodland at the upper elevations of the project site sloping downhill to the lower elevations of the project site. The visual quality of the southwestern corner of the site is show on Figure 5-2c. Views of the ridgelines to the east are also visible from Key Viewpoint 4. This view would be replaced with landscaping and trees bordering the perimeter of the site, and commercial buildings to the east of that landscaping, similar to the views from Key Viewpoint 3. The ridgelines to the east would still be visible. By replacing views of woodland and open area with residential and commercial/retail land uses, the project would result in a **potentially significant** change in the visual character of the site as seen from Key Viewpoint 4.

Urban Decay

In addition to the key viewpoints, the project would have the potential to draw customers from other retail areas around the city, such as downtown, which could result in a degradation of visual character in the older retail areas. This potential is analyzed in Appendix D, Dorsey Marketplace Economic Analysis. With respect to Downtown Grass Valley, the analysis of retail sales trends highlights the strong and specialized character of that retail destination. The Economic Analysis found that sales activity downtown is more influenced by general economic conditions and factors affecting visitor travel and discretionary spending on entertainment and recreation. Development of the proposed project would not change the reasons for shopping and dining downtown. The report states that roughly $150 million in existing retail spending is spent outside of the western Nevada County market area (in the combined comparison and eating and drinking out categories). The report anticipates the proposed project could recapture some of that retail leakage spent outside of the county and would not depend on taking business from existing retail establishments in Grass Valley. Therefore, the proposed project would not be expected to decrease economic activity in downtown or other parts of Grass Valley and thus would not lead to urban decay associated with commercial buildings becoming vacant and owners deferring maintenance on such buildings.

Conclusion

In summary, the proposed project would alter the existing visual character of the project site by constructing residential and commercial development on land that is undeveloped. Construction of the proposed project under either Alternative A or Alternative B would result in a transition from views of previously disturbed, open land with patches of tall woodland and low shrubs to primarily developed uses and related infrastructure surrounded by landscaping. Implementation of Mitigation Measure 5a would ensure that some of the vegetation lost to development is replaced through site landscaping (particularly around the perimeter of the site). The proposed landscaping plan incorporates a variety of large shrub sizes to help achieve a strong buffer and uses evergreen shrubs and large deciduous accent shrubs to further develop a layered effect and provide year-round color and screening. Once matured, the perimeter landscaping would help screen views of the proposed development, while trees planted within the parking lots and along circulation routes would be visible between and over the tops of the proposed buildings. Additionally, the project architecture and design would comply with the City's Design Standards, which were developed to ensure compatibility with the existing character of the City of Grass Valley.

The project site is an infill development site surrounded by existing residential, office, transportation, and light industrial uses that has been anticipated for development in the City of Grass Valley General Plan. While the project would remove the visual resources currently supported on site, implementation of Mitigation Measure 5a would ensure that the project site retains some of the existing visual character and scenic quality by incorporating trees and layered landscapes, meets the City's landscaping and design standards, and is compatible with the existing character of the surrounding property. This would reduce the project's impacts to visual character to a **less-than-significant** level.

Impact 5-3: Would the project create a new source of substantial light or glare?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Lighting is necessary to provide proper site visibility, guide movement at and around the site, provide security, emphasize signs, and enhance architectural and landscape features. Site lighting design considerations include mounting heights, light color, and shielding to focus lighting and avoid glare. Currently, there are streetlights surrounding the project site but there is no source of light or glare within the project site. Construction of the proposed project under either Alternative A or Alternative B would introduce the potential for light and glare from the project site to affect surrounding properties and roadways. Potential sources of light and glare associated with the project include

building lights, parking lot lights, car headlights, and any reflective building materials, including windows. Outdoor lighting sources create the greatest potential for light and glare impacts on adjacent properties. Removal of vegetation and trees, which can act as a natural shield, would also increase the potential for outdoor lighting to shine on adjacent property.

Direct glare is caused by a light source such as a light fixture or the sun. Sources of glare can also be surfaces that, after being illuminated by direct lighting or other indirect sources, have measurable luminance and, in turn, become light sources themselves. Potential sources of light and glare at nighttime include lights and structural building features made of glass, metallic, painted surfaces, and vehicles accessing the site. Commercial uses residences, parks, and all of the associated infrastructure and roads during non-daylight hours would emit light.

Under either Alternative A or Alternative B, the project's design includes fixtures that meet modern performance standards while maintaining consistency with the historical context of Grass Valley. Lighting fixtures adjacent to neighboring properties will use cut-off luminaries to mitigate light trespassing. All lighting, including height, streetlight, and luminaire design, would conform to Grass Valley Design Standards, the Community Design Guidelines, the Municipal Code, and the Community Design Element of the General Plan. Per the Community Design Guidelines, lighting fixtures should be thoughtfully placed to avoid light spillage and glare on adjacent properties, and lighting "spill over" shall not exceed 0.5 foot candles at any point on residential premises (City of Grass Valley 2010). Shielding or downward direction of lighting is required so that illumination reflects away from adjoining properties. As required by the City's Design Standards, all signals and street lights shall be powder coated black. Shielding shall be required on the mast arm side of all luminaires installed on the same side of the street as residential properties. Although the project is not in downtown Grass Valley, the City Engineer may require antique luminaire lamps or antique style street light poles (City of Grass Valley 2009). The Municipal Code states the exact location, type of pole, height of pole, type and size of luminaire, and fixture will be determined by the city engineer after consultation with the local utility company.

In the daytime, glare sources would come from building materials and vehicles accessing the site. The project does not propose to use highly reflective surfaces, such as mirrored glass or black glass. Further, the proposed site plan would place most of the new development away from existing public streets and screened by landscaping and trees. Buildings would be constructed with cement plaster in neutral earth tones which does not reflect glare, and metal siding which would incorporate low glare finishes. The Community Design Guidelines encourage design that incorporates the use of natural resources and that conserve community and historic attributes. Per the guidelines, all metal on buildings should be composed of low glare materials which will not result in off-site light glare or have an unfavorable appearance when viewed from surrounding areas (City of Grass Valley 2010). The guidelines also include requirements for setbacks, building heights, and grading. Adhering to these guidelines would ensure that glare from new light sources

at the project site would not adversely affect nighttime views or daytime safety. The potential for light and glare impacts would remain **less than significant** with compliance with the Grass Valley Design Standards, the Community Design Guidelines, the Municipal Code, and the Community Design Element of the General Plan.

Impact 5-4: Would the project contribute to cumulative impacts to the visual character of the region?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The geographic scope for consideration of cumulative impacts to visual character is the City of Grass Valley. The reasonably foreseeable projects within the City are identified in Table 3-2 in Chapter 3, Land Use. Like many of the other projects in the cumulative scenario, the proposed project would develop an infill site that is surrounded by existing development. These projects reflect the objectives in the Grass Valley General Plan that encourage infill development as a way to limit sprawl and conserve land. The General Plan identifies this objective as an important strategy for maintaining the City's "small town rural character and sense of community while also fulfilling its destiny as the cultural and economic hub of western Nevada County" (City of Grass Valley 1999). There are several projects in the cumulative scenario that would involve greenfield development—which is development of vacant land at the edge of the existing City. For example, the Loma Rica Ranch Specific Plan anticipates development of 700 dwelling units on 450 acres along the eastern side of Grass Valley and the Southern Sphere of Influence Annexation and Planning Area would develop 416 acres at the southern end of the City. However, these greenfield development projects also include substantial amounts of open space – with 314 acres of open space in the Loma Rica Specific Plan and 117 acres of open space in the Southern Sphere area. Thus in the cumulative development scenario, the most scenic and important visual resources would be protected and the visual character of the City would be retained. Thus the cumulative impact to scenic resources and visual character would be less than significant.

The addition of multifamily residential and commercial land uses to the site under Alternative A and the addition of multifamily residential, commercial, and office land uses to the site under Alternative B would meet the City's goals to support infill development and would not result in a visual contrast to the existing surrounding development. The project would remove a patch of tall woodland on the project site, but implementation of Mitigation Measure 5a would ensure that this is replaced with landscaping that would enhance and visually screen the project once the trees and landscaping mature. By adhering to the Grass Valley Design Standards, the Community Design Guidelines, the Municipal Code, and the Community Design Element of the General Plan, the project's design

would be consistent with the City's desired visual character for new development. Thus the project's impact would remain **less than significant.**

As described in Appendix D, the Dorsey Marketplace Economic Analysis anticipates the proposed project and additional development planned for Western Nevada County would accommodate planned growth in the area and could recapture some of the retail leakage spent outside of the county. The report indicates the proposed project and other planned projects would not depend on taking business from existing retail establishments in Grass Valley, and would therefore not lead to degradation or widespread abandonment of existing businesses. Therefore, the proposed project would not contribute to substantial degradation of the existing visual character or quality of the area through urban decay effects.

5.4 MITIGATION MEASURES

Mitigation Measure 5a Final landscaping plans shall be approved by the City of Grass Valley Planning Division prior to issuance of any grading permits for the project site. The landscape plan shall be drawn to scale and shall show the locations of existing trees and plant material to be retained and the location and proposed design of landscaped areas and the varieties and sizes of plant materials to be planted. The final landscaping plans shall demonstrate compliance with the following standards:

- The trees proposed to be planted onsite shall include a minimum of either a one and one-half inch caliper healthy and well-branched deciduous tree or a 5–6-foot-tall evergreen tree for each protected tree removed, in compliance with the City's Tree Preservation Ordinance.
- Landscaping along the western, southern, and eastern site boundaries shall include a mixture of shrubs and trees spaced such that there is sufficient room for each plant to grow while also providing visual screening of large walls, loading docks, and parking areas. This may be accomplished with staggered meandering rows of planting that provide depth and natural variation in placement and plant materials/species. At a minimum, perimeter landscaping shall include species that typically reach heights at least as tall as the proposed buildings, and shall have sufficient quantities of vegetation such that at maturity, the vegetation will fully block sections of views that are at least 10 feet in length, spaced a minimum of 30 feet apart to a height of 8 feet. In the sections between those where views are fully blocked and at

heights greater than 8 feet, views of the development must be screened with varying amounts of landscaping.

- Loading and service areas for delivery or transfer of merchandise including vehicle access to those areas shall be screened from public view corridors and building entries by a combination of building design, layout, grade separations, masonry walls and dense landscaping.
- Site areas not used for buildings, parking or other designated functions shall be landscaped.
- All trees planted within the site shall be transplanted from five-gallon or larger size containers.
- Landscaped areas shall utilize predominantly low-maintenance, native and adaptive drought-tolerant plantings that conserve water and facilitate the use of drip irrigation.
- Landscaped areas shall use native trees and vegetation selected and placed to create a "natural forest" character in the landscape.
- Parking lot landscaping shall meet the requirements of the City of Grass Valley Municipal Code Section 17.34.030.
- The project site entrances at Dorsey Drive and Spring Hill Drive shall be landscaped with a mixture of ground cover, flowers, shrubs, and trees. At each entrance, landscaping shall be provided on both sides of the street and in median islands.
- Along the project site frontage on Dorsey Drive and along the on-site section of Spring Hill Drive, at least one street tree shall be properly installed for each 30-foot length of right-of-way and shall be maintained in compliance with the City of Grass Valley Municipal Code Section 17.34.140 (Maintenance of Landscape Areas). The review authority may modify this requirement depending on the chosen tree species and its typical spread at maturity.
- The project applicant shall post with the City of Grass Valley surety in the form of cash, letter of credit, performance bond, or instrument of credit, in an amount equal to 150% of the total value of all plant materials, irrigation, installation, and maintenance. Such surety shall be posted with the City for a 2-year period in compliance with Grass Valley Municipal Code Section 17.74.050 (Performance Guarantees).

- Prior to issuance of any certificates of occupancy for structures within the project site, the project applicant shall submit to the Planning Division a letter signed by a licensed landscape architect, or the landscape contractor who performed the installation certifying that the landscaping and irrigation for the project has been installed in compliance with the approved plans.

5.5 REFERENCES CITED

Caltrans (California Department of Transportation). 2016. Officially Designated State Scenic Highways And Historic Parkways. Accessed at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed on May 17, 2016.

City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

City of Grass Valley. 2010. *City of Grass Valley Community Design Guidelines*. Adopted February 26, 2002; Amended September 14, 2010.

City of Grass Valley. 2009. Construction Standards Section 9 Signals and Lighting. March 2009.

City of Grass Valley. 2017. City of Grass Valley Municipal Code, Code of Ordinances, Supplement 3. Amended September 26, 2017City of Grass Valley. 2018. City of Grass Valley Development Code. Adopted March 6, 2007. Amended April 24, 2018.

SOURCE: Bing 2018

DUDEK

0 150 300 Feet

FIGURE 5-1

Key Viewpoints

Dorsey Marketplace EIR

Northern portion of the site.

View to Dorsey Drive intersection across northern portion of the site.

Dudek 2016

FIGURE 5-2a

Existing Site Photographs

Dorsey Marketplace EIR

DUDEK

Southeastern corner of the site.

Existing vegetation along western site boundary.

Dudek 2016

FIGURE 5-2b

Existing Site Photographs

Dorsey Marketplace EIR

DUDEK

View to the south along eastern site boundary.

Project site southwestern corner.

Dudek 2016

FIGURE 5-2c

Existing Site Photographs

Dorsey Marketplace EIR

DUDEK

Aerial view

View from Dorsey Drive off-ramp

Williams + Paddon 2017

FIGURE 5-3a

Conceptual Views

Dorsey Marketplace EIR

DUDEK

Shops C and D, Dorsey

Major 1

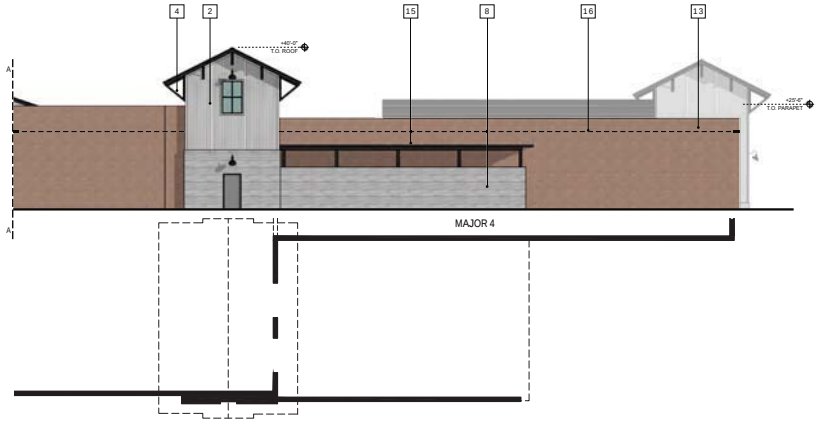
Williams + Paddon 2017

FIGURE 5-3b

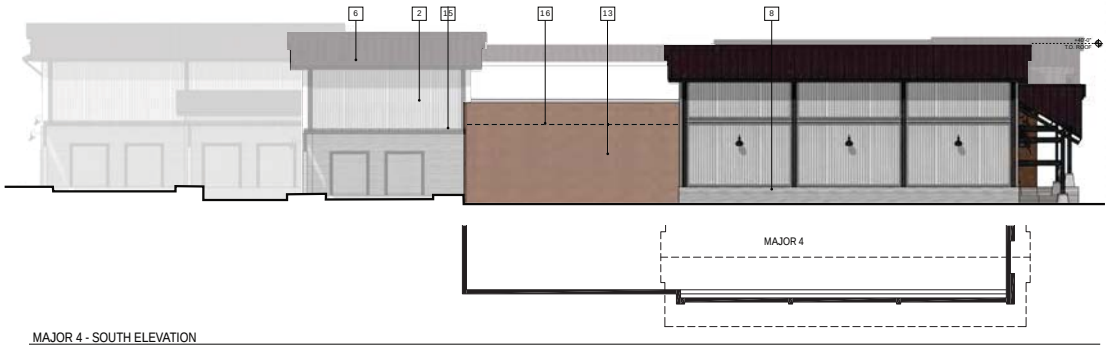
Conceptual Views

Dorsey Marketplace EIR

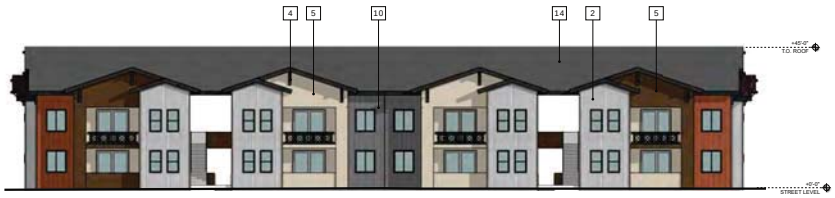
DUDEK



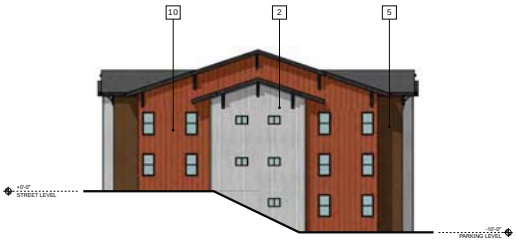
MAJOR 4 - WEST ELEVATION



MAJOR 4 - SOUTH ELEVATION



APARTMENT ELEVATION (2 BEDROOM UNITS) - FRONT

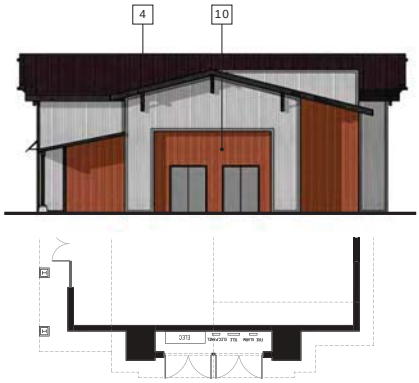


APARTMENT ELEVATION (2 BEDROOM UNITS) - SIDE

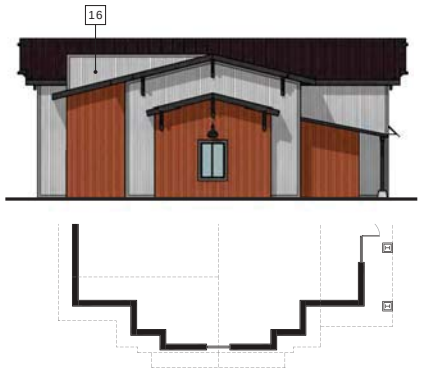
SOURCE: Williams + Paddon 2016

FIGURE 5-4
Alternative A Building Elevations 1
Dorsey Marketplace EIR

DUDEK



PAD 3 - EAST ELEVATION



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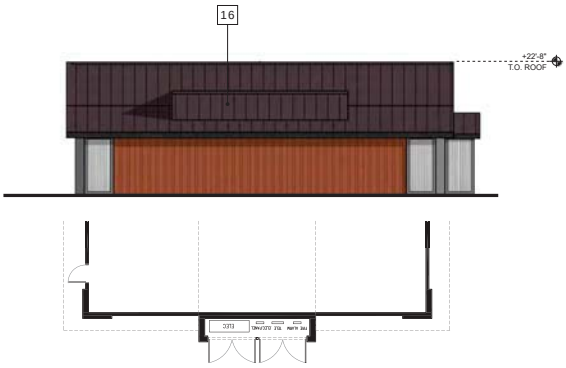
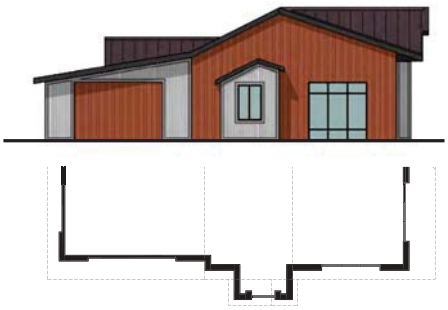


PAD 4 - NORTH ELEVATION



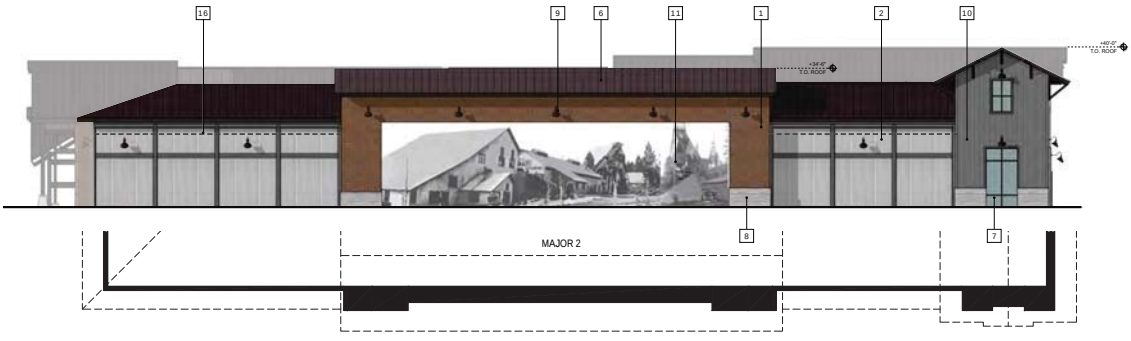
PAD 4 - WEST ELEVATION

SOURCE: Williams + Paddon 2016

FIGURE 5-5
Alternative A Building Elevations 2
Dorsey Marketplace EIR

SHOP A & MAJOR 1 SOUTH ELEVATION

MAJOR 1, SHOP B, SHOP A, SHOP F - WEST ELEVATION



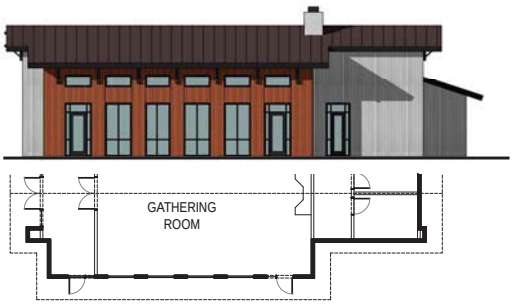
MAJOR 2 - NORTH ELEVATION

SOURCE: Williams + Paddon 2016

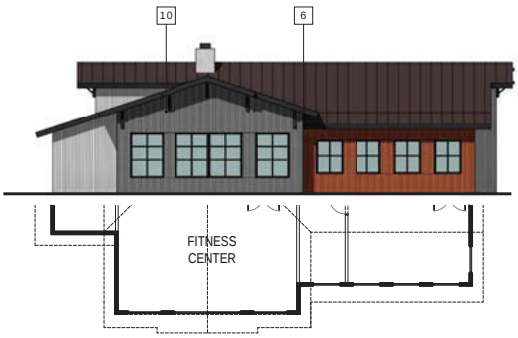
FIGURE 5-6
Alternative A Building Elevations 3
Dorsey Marketplace EIR

MIXED USE ELEVATION - BACK

APARTMENT ELEVATION (3 BED / 1 BED UNITS) - BACK



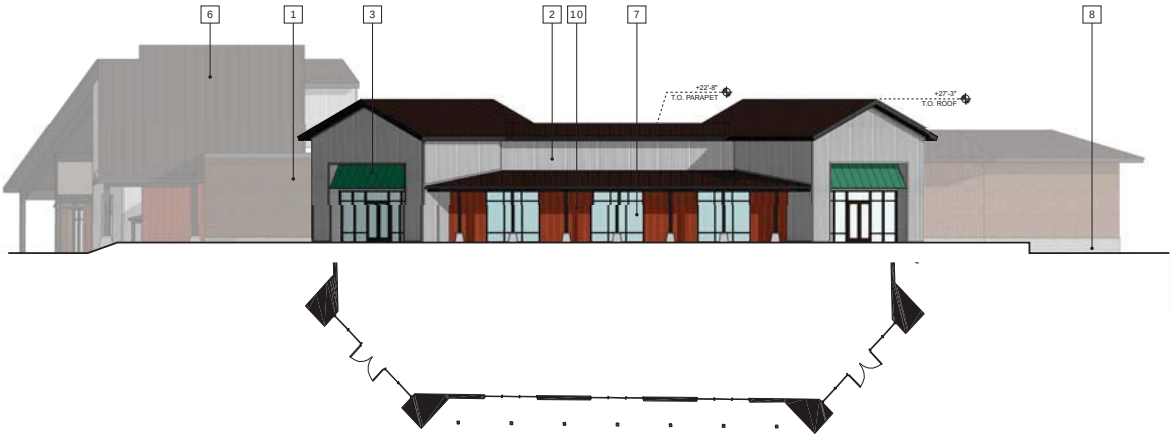
APARTMENT CLUBHOUSE - SOUTH ELEVATION



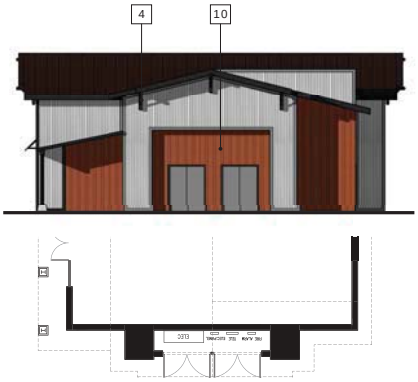
APARTMENT CLUBHOUSE - NORTH ELEVATION

SOURCE: Williams + Paddon 2016

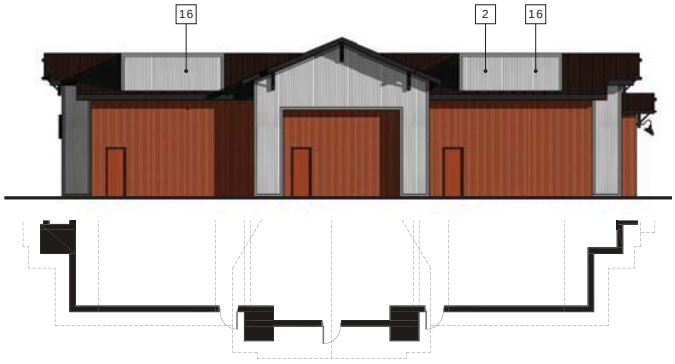
FIGURE 5-7
Alternative B Building Elevations 1
Dorsey Marketplace EIR



MAJOR - NORTH ELEVATION



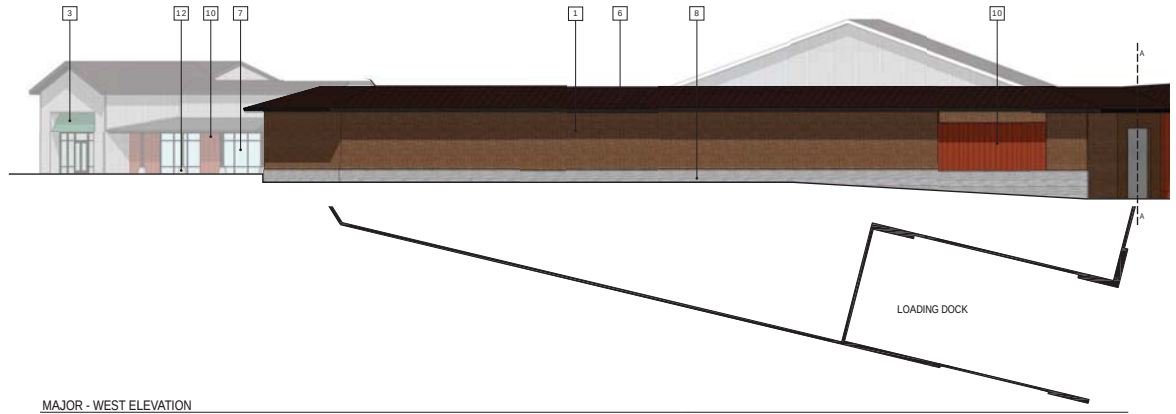
PAD 3 - EAST ELEVATION



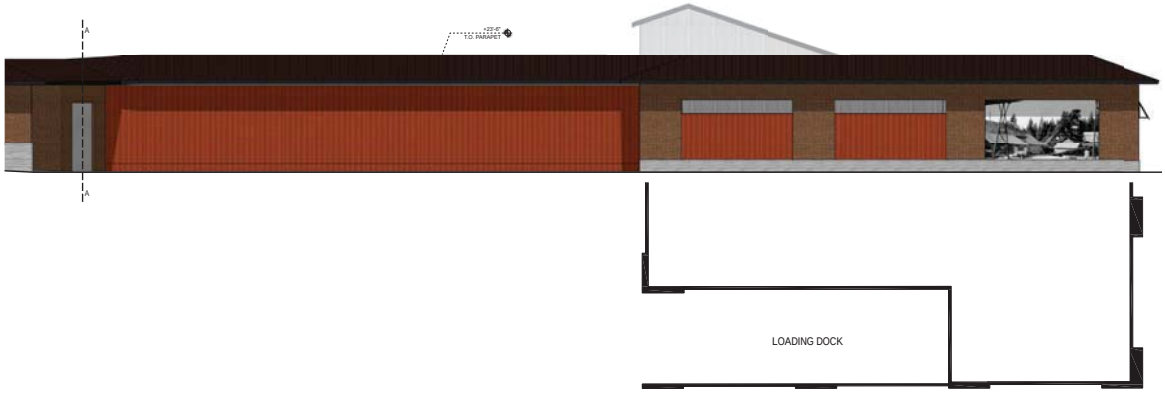
PAD 3 - NORTH ELEVATION

SOURCE: Williams + Paddon 2016

FIGURE 5-8
Alternative B Building Elevations 2
Dorsey Marketplace EIR



MAJOR - WEST ELEVATION



MAJOR - WEST ELEVATION

SOURCE: Williams + Paddon 2016

FIGURE 5-9

Alternative B Building Elevations 3

Dorsey Marketplace EIR

DUDEK

CHAPTER 6
BIOLOGICAL RESOURCES

This chapter evaluates the potential effects on biological resources associated with development and operation of the proposed Dorsey Marketplace (proposed project). Alternative A would provide for up to 90 apartment units, approximately 178,960 square feet of commercial space, and a 3,200-square-foot clubhouse. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and a 3,200-square-foot clubhouse. This chapter describes the biological resources present within the project site; identifies special-status plant and wildlife species that are known to occur or potentially occur within the project site; outlines applicable federal, state, and regional regulations pertaining to protection of plant and wildlife species; evaluates potential project-specific impacts on biological resources; identifies mitigation measures to minimize these impacts; and evaluates the degree to which the project could contribute to cumulative impacts.

Information referenced to prepare this chapter includes:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- *Grass Valley General Plan Background Report* (Quad Knopf 1998)
- *Biological Technical Report* (Appendix E)

One comment concerning biological resources was received in response to the Notice of Preparation (NOP). The comment from the Wolf Creek Community Alliance stated that existing trees and vegetation on the hilltop of the proposed project site are an important visual community resource, and emphasized the rarity of the site's McNab cypress stands which are limited in the City. Verbal comments provided at the Planning Commission hearing to receive comments on the NOP identified concerns regarding the removal of trees from the project site. The NOP and comments received in response to the NOP is provided in Appendix A.

6.1 ENVIRONMENTAL SETTING

Regional Setting

The project site lies within the western edge of the Sierra Nevada geomorphic province on the eastern edge of California's Great Central Valley. This region is a transition zone between the lower foothill elevations and the higher Sierra Nevada Mountains. Grass Valley has four main soil associations: central Grass valley and land to the east is located within the Josephine-Sites-Mariposa association; land to the northeast of central Grass Valley is located within the Secca-

Boomer association; land to the northwest of the City center is located within the Aiken-Cohasset association soils; and land southeast of the central city is located in the Boomer-Sites-Sobrante association (Quad Knopf 1998). Vegetation communities found in Grass Valley include a mosaic of herbaceous, shrub and tree dominated types as well as aquatic and developed types.

Local Setting

The 26.8-acre project site is located in the City of Grass Valley in Section 23, Township 16 North, and Range 8 East of the U.S. Geological Survey (USGS) Grass Valley 7.5-minute quadrangle. The project site is surrounded by development, bordered by State Route (SR) 20/49 to the west, Dorsey Drive to the north, the Old Barn and Ernie's Storage to the south and the Grass Valley Terrace Apartments to the east. The portion of the site bordering the corner of Dorsey Drive and SR 20/49 is relatively flat, but slopes downhill with elevations on the property ranging from 2,560 to 2,794 feet above mean sea level (MSL). The project site is the former location of the Spring Hill Mine, which operated on the site intermittently during the late 1800s and through the 1940s. Abandoned mine features located on the project site include excavations, pits, remnants of building foundations, stockpiles of mine waste rock, and dry tailings ponds.

Native topsoil on site generally consists of clay, gravelly clay, and sandy clay underlain by a layer of bedrock consisting of diabase and serpentine, which appears to be moderately to severely weathered. Soils on the project site are part of the ultramafic-mafic basement of the Lake Combie complex and are dominated by the Dubakella complex. According to the Natural Resources Conservation Service (Appendix E) the three soil types mapped within the site include placer diggings, rock outcrop Dubakella complex 5 to 50 percent slopes and sites loam 9 to 15 percent slopes. Generally, placer diggings are found where historic mining practices have altered the land and consist of numerous minor components. Rock outcrops-Dubakella complex soils consist of ultrabasic rock outcrops in Dubakella soils on hills and mountains, which are rocky, well-drained soils often containing serpentinite components. Sites loam soils consist of well-drained clay loams derived from metabasic residuum weathered from metasedimentary rock.

Vegetation Communities

The communities identified on the project site are broadly classified, whenever possible, into alliances and associations as described in *A Manual of California Vegetation* (Sawyer et al., 2009 as cited in Appendix E). Five land cover types exist on the project site. A majority of the site is composed of whiteleaf manzanita (*Arctostaphylos manzanita* ssp. *glaucescens)* chaparral and McNab cypress (*Hesperocyparis macnabiana*) woodland with smaller portions consisting of ponderosa pine (*Pinus ponderosa*) forest, Fremont cottonwood (*Populus fremonti*) woodland, and ruderal/developed lands (Appendix E). The distribution of these vegetation communities within

the project site is shown on Figure 6-1 and each community is described in further detail in the following paragraphs. Table 6-1 identifies the extent of each community within the site.

Table 6-1
Vegetation Communities and Vegetation Types

Alliance	Vegetation Type	Acres
Arctostaphylos viscida shrubland	California chaparral	11.10
(NA)	Developed	0.64
(NA)	Disturbed/Ruderal	4.94
Populous fremontii	Cottonwood forest	0.62
Pinus ponderosa forest	Mixed coniferous forest	6.25
Callitropsis macnabiana forest	McNabb Cypress Woodland	3.15
	Total	26.80*

* Acreage total is off by 0.01 due to rounding

Whiteleaf Manzanita Chaparral

Chaparral communities are located throughout the site including: along the southern boundary adjacent to the existing Spring Hill Drive; along the northeastern boundary of the project site adjacent to the Grass Valley Terrace Apartments; in the tip of the southeastern corner; and along most of the western portion of the site. The whiteleaf manzanita chaparral on site is dominated in most areas by whiteleaf manzanita and in other areas is codominant in the canopy with scrub oaks (*Quercus berberidifolia and Q. durata)* and ceanothus (*Ceanothus cuneatus*) (Appendix E). The shrub canopy in the chaparral is dense and little vegetation grows under the shrubs. The few herbaceous species noted in the chaparral included bedstraw (*Galium aparine*). Openings in the chaparral were either barren or dominated by annual grasses and forbs.

McNab Cypress Woodland

McNab cypress woodlands are located in the northeastern corner adjacent to Dorsey Drive and in the southeastern corner. The overstory vegetation in both locations is dominated by McNab cypress with minimal herbaceous vegetation in the understory (Appendix E). This canopy is generally short (less than 20 feet in height) and either densely clustered or scattered with whiteleaf manzanita chaparral between trees. McNab cypress woodland is a fire-adapted species known to occur primarily on soils derived from basalt, conglomerate, gabbro, greenstone or serpentine substrates (Appendix E).

This vegetation community has a State rarity ranking of S3.2 and a global rarity rank of G3 (Appendix E). The State rarity rank of S3 indicates that there are 21 to 80 element occurrences, or 3,000 to 10,000 individuals, or 10,000 to 50,000 acres in California. The threat designation of .2 indicates that this species is fairly threatened in California, meaning between 20% and 80% of all

occurrences in the state are threatened. The global rarity rank of G3 indicates that there are 21 to 80 element occurrences, or 3,000 to 10,000 individuals, or 10,000 to 50,000 acres globally (Appendix E). Although the CNPS determined this species is threatened within the state, it is not listed as threatened, or protected, under the California Endangered Species Act.

Ponderosa Pine Forest

Ponderosa pine forests are located in the central portion of the project site extending to the eastern boundary adjacent to the Grass Valley Terrace Apartments. Ponderosa pine trees are the dominant plant in this vegetation community and trees on site are tall and well-spaced allowing for the growth of a sparse shrub layer in the understory (Appendix E). The shrub layer consists of ceanothus, whiteleaf manzanita, toyon (*Heteromeles arbutifolia*), and immature madrone trees (*Arbutus menziesii*) (Appendix E). Herbaceous vegetation in this community on site was sparse and consisted primarily of an unidentifiable lily. Many of the trees in the on-site ponderosa pine forest are diseased and dying.

Cottonwood Forest

One patch of cottonwood forest is located on the project site in the western portion along the southern boundary. This area is the lowest point on the property and it appears that water runoff from the hillside collects there; although no standing water was noted during the site survey conducted by Dudek on March 4, 2016 (Appendix E). Himalayan blackberry (*Rubus armeniacus*) is an associated species with this vegetation community (Appendix E).

Cottonwood forest has a State rarity ranking of S3.2 and a global rarity rank of G4 (Appendix E). As described previously, the state rarity rank of S3.2 indicates that this community is fairly threatened in California. The global rarity rank of G4 indicates that this species is apparently secure but factors still exist to cause some concern such as a somewhat narrow habitat (Appendix E).

Ruderal/Developed

Ruderal and developed land consists of a gravel parking lot and several cleared dirt access roads along the northern boundary of the site adjacent to Dorsey Drive extending south toward the center of the project site and historic mining facilities including cement foundations and mine tailing depressions in the western portion of the project site bordering SR 20/49 (Appendix E). Ruderal and developed lands are areas that have been altered through human disturbance and may support a variety of native and nonnative vegetation.

Sensitive Natural Communities

Sensitive natural communities are communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects. The General Plan EIR lists seven important biological resources areas within the City. These seven areas include: Scadden Flat Marsh located west of Grass Valley along SR 20 north of the Nevada County Fairgrounds; Hell's Half Acre located approximately 1.5 miles northwest of the City; Slate Creek Area adjacent to the southern boundary of Hell's Half Acre; Serpentine and Gabbro soil plant communities located north of Grass Valley near SR 20/49 along Dorsey Drive/Hughes Road; Union Hill Meadow located adjacent to Empire Mine State Historic Park; Wolf Creek which runs through the City; and Canadian Geese wintering habitat located southwest of the City on the 130 acre Conway Ranch (City of Grass Valley 1999a).

Two sensitive natural communities, as defined by the California Native Plant Society's Inventory of Rare and Endangered Plants occur within the project site. The McNab cypress woodland is ranked S3.2 and G3, as described above, and is known in the Sierra Nevada only from a few isolated stands in Butte, Yuba, Nevada and Amador counties (Appendix E). The cottonwood forest is ranked S3.2 and G4, as described above. The location and extent of the McNab cypress woodland and cottonwood forest within the project site is depicted in Figure 6-1.

Special-Status Plant and Animal Species

For the purposes of this EIR, special-status plant and animal species are defined as those species that fall into one or more of the following categories:

1. Officially listed or proposed for listing under the state and/or federal Endangered Species Acts.
2. State or federal candidate for possible listing.
3. Species meeting the criteria for listing, even if not currently included on any list, as described in Section 15380 of the California Environmental Quality Act (CEQA) Guidelines.
4. Protected under the Federal Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act.
5. Species considered by the California Department of Fish and Wildlife (CDFW) to be "Species of Special Concern."
6. Species that are biologically rare, very restricted in distribution, declining throughout their range, or have a critical, vulnerable stage in their life cycle that warrants monitoring.
7. Populations in California that may be on the periphery of a species' range, but are threatened with extirpation in California.

8. Species closely associated with habitat that is declining in California at an alarming rate (e.g., wetlands, riparian, old growth forests, desert aquatic systems, native grasslands, vernal pools).
9. Species designated as a special-status, sensitive, or declining species by other state or federal agencies, or non-governmental organizations.

The potential occurrence of special-status plant and animal species on the project site was initially evaluated by developing a list of special-status species that are known or have the potential to occur in the project vicinity. This list was derived from a review of the CDFW's California Natural Diversity Database (CNDDB), the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants, and the U.S. Fish and Wildlife Service (USFWS) lists of federal endangered and threatened species for the following USGS 7.5-minute quadrangles: Grass Valley, French Corral, Nevada City, North Bloomfield, Chicago Park, Rough and Ready, Wolf, Lake Combie and Colfax (Appendix E).

Special-Status Plant Species

Dudek staff biologist Laura Burris conducted a field survey on March 4, 2016 to analyze the project site and surrounding habitat for special-status plant species. All plant species encountered during the field survey were identified to the lowest taxonomic group possible and recorded directly into a field notebook. Based on review of the databases and other information sources 11 special-status plant species have the potential to occur on or in the vicinity of the project site. Of these, four were removed from consideration due to lack of suitable habitat within or adjacent to the project area, or the project site is outside of the species' known range (Appendix E). Four special-status plant species have low potential to occur on the project site due to lack of appropriate soil substrates or habitats on site (Appendix E). Three special-status plant species have moderate potential to occur at the project site and are shown in Table 6-2 and discussed below. The site survey conducted by Dudek on March 4, 2016 was conducted at a time when special-status plants would not be evident and identifiable, so no special-status plant species were observed on the project site during the field survey.

Table 6-2
Special-Status Plant Species with Potential to Occur

Scientific Name	Common Name	Status (Federal/State/CRPR)
Calystegia stebbinsii	Stebbins' morning-glory	FE/CE/1B.1
Monardella follettii	Follett's monardella	None/None/1B.2
Poa sierrae	Sierra blue grass	None/None/1B.3

Status Legend:
FE: Federally endangered, CE: California endangered
CRPR: California Rare Plant Rank 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
.1 Seriously endangered in California (over 80% of occurrences threatened/high degree and immediacy of threat)
.2 Moderately endangered in California (20%–80% occurrences threatened/moderate degree and immediacy of threat)
.3 Not very endangered in California (less than 20% occurrences threatened or no current threats known)

Stebbins' morning-glory (*Calystegia stebbinsii*)

Stebbins' morning-glory is a low growing perennial herb that generally occurs on red clay soils of gabbro or serpentine origins. Stebbins' morning-glory maintains a dormant seed bank or rootstock that germinates following fires or other ecological disturbance that weakens the seed coat. Historically, Stebbins' morning-glory has been found in only two areas of El Dorado and Nevada counties and is listed as a federal and California endangered species, as well as having a California Rare Plant Rank (CRPR) of 1B.1 indicating that this species is seriously endangered in California (Appendix E). The chaparral and serpentine soil substrates on site may provide suitable habitat for this species. The nearest CNDDB documented occurrence for this species is located approximately 3.9 miles southwest of the project site (Appendix E).

Follett's monardella (*Monardella follettii*)

Follett's monardella is a perennial herb that generally occurs in rocky mountain forests and slopes and sometimes on serpentine soils (Appendix E). Generally, Follett's monardella is found in Plumas and Nevada counties and has a CRPR of 1B.2 indicating that it is moderately endangered in California. The rocky soils of the ponderosa pine forest on site may provide suitable habitat for this species.

Sierra blue grass (*Poa sierrae*)

Sierra blue grass is a perennial grass that generally occurs in shady moist slopes, on mossy rocks and in canyons and forests (Appendix E). Generally, sierra blue grass is found in Shasta, Plumas, Butte, Nevada, Placer and El Dorado counties and has a CRPR of 1B.3 indicating that it is not very endangered in California. The ponderosa pine forest on site may provide suitable habitat for this species.

Special-status Animal Species

Dudek staff biologist Laura Burris conducted a survey of the project site for special-status animal species. Survey techniques included binocular surveys of the property and perimeter, identification of potential habitat on site for special-status species and identification of wildlife based on sight, calls, tracks, scat or other signs. Based on review of the databases and other information sources, nine special-status animal species have been documented as occurring or potentially occurring in the vicinity of the project site. Of these species, seven were removed from consideration due to lack of suitable habitat within or adjacent to the site, or location of the site outside the species' known range (Appendix E). These seven species include California red-legged frog (*Rana draytonii*), foothill yellow-legged frog (*Rana boylii*), western pond turtle (*Actinemys marmorata*), California black rail (*Laterallus jamaicensis coturniculus*), Sierra Nevada red fox (*Vulpes vulpes necator*), west coast distinct population of fisher (*Pekania pennant*), and valley elderberry

longhorn beetle (*Desmocerus californicus dimorphus*). No suitable aquatic or riparian habitat exists on site for California red-legged frog, foothill yellow-legged frog, California black rail, or western pond turtle (Appendix E). There is an extremely low possibility of California black rail to utilize the depression in the southwestern corner of the project site due to the depression's exposed nature and small size (Appendix E).

The remaining two species, Blainville's horned lizard (*Phrynosoma blainvillii*) and northern goshawk (*Accipiter gentilis*), were determined to have a low potential to occur on the project site based on the available habitat (Appendix E). The Biological Technical Report concluded that although openings in the chaparral habitat may provide potentially suitable habitat for Blainville's horned lizard, it is unlikely that this species would occur on the project site due to the lack of appropriate sandy soil substrates preferred by this species (Appendix E). The Biological Technical Report also concluded that although northern goshawks are known to nest within ponderosa pine forests, it unlikely that this species would utilize the isolated stand on the project site for nesting since it is surrounded by development and highly degraded areas (Appendix E).

All raptor species found in California are protected by the California Fish and Game Code Section 3503.5 and some may use the site for nesting and foraging. Raptor species have the potential to nest on the site and forage adjacent to the site; however, due to its small size, the site does not provide substantially important habitat that would affect raptor species from continuing to exist within the area.

Aquatic Habitats and Jurisdictional Wetlands

Potentially jurisdictional waters and wetlands are regulated by the U.S. Army Corps of Engineers (ACOE) under Section 404 of the federal Clean Water Act, the Regional Water Quality Control Board (RWQCB) under Section 401 of the Clean Water Act and the Porter-Cologne Act, and CDFW under Section 1602 of the California Fish and Game Code. Pursuant to the federal Clean Water Act, ACOE jurisdictional areas include those supporting hydric soils, hydrology and hydrophytic vegetation. Areas regulated by the RWQCB are generally consistent with the ACOE criteria but may also include isolated features that have evidence of surface water inundation pursuant to the state Porter Cologne Act. Features are considered isolated through the lack of surface water hydrology and connectivity downstream but generally support at least one of the three ACOE wetlands indicators. CDFW regulated areas typically include those supporting a predominance of hydrophytic vegetation (i.e., 50 percent cover or greater) where associated with a stream channel.

The project site is located in the Upper Bear hydrological unit (HUC 18020126). Aquatic features on site include numerous erosional channels and one depression located at the southwestern end of the project site (Figure 6-2). Based on historical aerial photos and visual inspection during the

site visit, the Biological Technical Report completed for the project concluded that these features are only periodically inundated and tend to remain inundated for short periods, depending on frequency and duration of rainfall events. However, the intermittent drainage in the southwestern portion of the site ties into an existing City of Grass Valley storm drain, which outfalls to Wolf Creek. Because the intermittent drainage is hydrologically connected to a waters of the United States, this feature is also likely to fall within the jurisdiction of the ACOE as a waters of the United States (Appendix E).

Wildlife Corridors and Habitat Linkages

Wildlife corridors are natural areas interspersed within developed areas that provide avenues for the migration of animals. Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation; they may be continuous habitat or discrete habitat islands that function as stepping stones for wildlife dispersal. The project site is bounded on all sides by development and is not contiguous with any wildlife habitat or corridors (Appendix E). The site may provide important island habitat for birds and other wildlife adapted to urban environments.

6.2 REGULATORY FRAMEWORK

Federal Regulations

Federal Endangered Species Act

Projects that would result in impacts to federally listed threatened or endangered species are required to comply with the Federal Endangered Species Act (FESA), which is administered by USFWS. Section 9 of the FESA prohibits unauthorized take of listed species. "Take" is defined by the FESA as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." The USFWS has further defined the terms "harass" and "harm." "Harassment" is defined as an act that "creates the likelihood of injury to a listed species by annoying it to such an extent as to significantly disrupt normal behavior patterns that include, but are not limited to, breeding, feeding, or sheltering." "Harm" is defined to include the following: "significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, or sheltering."

The FESA defines "incidental take" as take that is incidental to, and not the purpose of, an otherwise lawful activity. Incidental take of listed species can be authorized by USFWS as long as the incidental take will not result in extinction of the species.

FESA compliance for projects that may affect federally listed species can be accomplished by federal agencies under Section 7 of the FESA or by private parties or non-federal agencies under

Section 10 of the FESA. The objective under Section 7 of the FESA is to determine whether a federally funded or federally authorized project would adversely affect a listed species or designated critical habitat, and to identify measures necessary to reduce impacts to the species to an acceptable level. Section 10 of the FESA applies when there is no federal nexus, i.e., when no federal agencies are involved with the project. Different standards apply in the two different contexts. For example, under Section 7, the participating federal agencies must consider whether a proposed action could destroy or adversely modify critical habitat. This inquiry is not specifically required under Section 10.

Section 404 of the Clean Water Act

The ACOE and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredge and fill material into waters of the United States under Section 404 of the Clean Water Act. Waters of the United States are defined as "all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide." These include:

- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters;
- Territorial seas; and
- Wetlands adjacent to waters (other than waters that are themselves wetlands).

The ACOE will typically exert jurisdiction over that portion of the project site that contains waters of the United States. This jurisdiction includes approximately the bank-to-bank portion of a creek up to the ordinary high water mark along its entire length, and adjacent wetland areas.

Section 401 of the Clean Water Act

The State Water Resources Control Board has authority over discharges of dredged or fill material into waters of the United States through Section 401 of the Clean Water Act, which requires that an applicant for a Section 404 permit also obtain certification from the appropriate state agency stating that the fill is consistent with the state's water quality standards and criteria. In California, the authority to either grant certification or waive the requirement for permits is delegated by the State Water Resources Control Board to the nine regional boards. The Central Valley Regional Water

Quality Control Board is the appointed authority for Section 401 compliance in the project area. Once an application is filed with the ACOE, a request for certification or waiver must be submitted to the regional board. The regional board has 60 days to review the application and act on it. If a CEQA document is being prepared for the project requesting the certification, the CEQA document must first be certified before the regional board can issue the water quality certification. Because no ACOE permit is valid under the Clean Water Act unless certified by the state, these boards may effectively veto or add conditions to any ACOE permit.

Migratory Bird Treaty Act

The federal Migratory Bird Treaty Act (16 U.S.C., Section 703, Supplement I, 1989) regulates and prohibits taking, killing, possession of, or harm to migratory bird species listed in Title 50 of the Code of Federal Regulations, Section 10.13. This international treaty for the conservation and management of bird species that migrate through more than one country is enforced in the United States by the USFWS. Additionally, as discussed below, Section 3513 of the California Fish and Game Code states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. This provides CDFW with enforcement authority for project-related impacts that would result in the take of bird species protected under the Migratory Bird Treaty Act. Hunting of specific migratory game birds is permitted under the regulations listed in Title 50 of the Code of Federal Regulations, Section 20. The Migratory Bird Treaty Act was amended in 1972 to include protection for migratory birds of prey (raptors).

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA), established under California Fish and Game Code Section 2050 et seq., identifies measures to ensure that endangered species and their habitats are conserved, protected, restored, and enhanced. The CESA restricts the take of plant and wildlife species listed by the state as endangered or threatened, as well as candidates for listing. Section 86 of the California Fish and Game Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Under Section 2081(b) of the Fish and Game Code, CDFW has the authority to issue permits for incidental take for otherwise lawful activities. Under this section, CDFW may authorize incidental take, but the take must be minimal and permittees must fully mitigate project impacts. CDFW cannot issue permits for projects that would jeopardize the continued existence of state listed species.

CDFW maintains lists for Candidate-Endangered Species and Candidate-Threatened Species. Candidate species and listed species are given equal protection under the law. CDFW also lists Species of Special Concern based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value. Designation of Species of Special

Concern is intended by the CDFW to be used as a management tool for consideration in future land use decisions; these species do not receive protection under the CESA or any section of the California Fish and Game Code, and do not necessarily meet CEQA Guidelines Section 15380 criteria as rare, threatened, endangered, or of other public concern (14 CCR 15000 et seq.). The determination of significance for California Species of Special Concern must be made on a case-by-case basis.

Section 2080.1 of the California Fish and Game Code stipulates that for persons obtaining incidental take statements or permits from the Department of the Interior (e.g., USFWS) for a federally listed species that is also state listed or a candidate for state listing, no further authorization or approval is necessary under CESA for that person to take that listed species if that person does both of the following:

1. Notifies CDFW in writing that the person has received an incidental take statement or an incidental take permit issued pursuant to the FESA; and
2. Includes in the notice to CDFW a copy of the incidental take statement or incidental take permit.

CDFW publishes receipt of the notice in the General Public Interest section of the California Regulatory Notice Register. Within 30 days of their receipt of the notice, CDFW determines whether the federal incidental take statement or incidental take permit is consistent with the requirements of CESA. If CDFW determines that the incidental take statement or incidental take permit is not consistent with CESA, then the taking of that species may only be authorized pursuant to California Fish and Game Code Section 2080 et seq.

Nesting Birds, Raptors, and Migratory Birds

California Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto. California Fish and Game Code Section 3503.5 protects all birds of prey (raptors) and their eggs and nests, while Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. These regulations could require that vegetation removal or construction near nest trees be reduced or eliminated during critical periods of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed, subject to approval by CDFW and/or USFWS.

Fully Protected Species

Sections 3511 (birds), 4700 (mammals), 5050 (reptiles and amphibians), and 5515 (fish) of the California Fish and Game Code designate certain species as fully protected. Fully protected species, or parts thereof, may not be taken or possessed at any time, and no provision of the California Fish and Game Code or any other law may be construed to authorize the issuance of permits or licenses to take any fully protected species.

Streambed Alteration Agreements

Under Chapter 6 of the California Fish and Game Code, CDFW is responsible for the protection and conservation of the state's fish and wildlife resources. As amended effective January 1, 2004, California Fish and Game Code Sections 1600 through 1616 regulate activities by which a public or private entity proposes to "substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of, any river, stream or lake, or deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake." Section 1600 et seq. of the code defines the responsibilities of CDFW and the requirements for public and private applicants to obtain an agreement for the activities referenced above. In general, a Streambed Alteration Agreement is necessary where any such proposed activity would "substantially adversely affect an existing fish or wildlife resource." The local CDFW warden or unit biologist typically has responsibility for issuing Streambed Alteration Agreements. These agreements usually include specific requirements related to construction techniques and remedial and compensatory measures to mitigate for adverse impacts. CDFW may also require long-term monitoring as part of an agreement to assess the effectiveness of the proposed mitigation.

California Native Plant Protection Act

The California Native Plant Protection Act (California Fish and Game Code Sections 1900-1913) and the Natural Communities Conservation Planning Act provide guidance on the preservation of plant resources. Vascular plants which have no designated status or protection under state or federal endangered species legislation, but are listed as rare or endangered by the CNPS, are defined as follows:

1. List 1A: Plants presumed extinct
2. List 1B: Plants rare, threatened or endangered in California and elsewhere
3. List 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere
4. List 3: Plants about which more information is needed – a review list
5. List 4: Plants of limited distribution – a watch list

Plants on the CNPS List 1A, 1B, or 2 are generally considered to meet the criteria for endangered, threatened, or rare species as outlined by Section 15380 of the CEQA Guidelines. These plants also meet the definition of Section 1901, Chapter 10 (Native Plant Protection Act) and Sections 2062 and 2067 (CESA) of the California Fish and Game Code. Plants on the CNPS List 3 or 4 do not meet these criteria or definitions.

Local Regulations

Grass Valley General Plan

The Conservation and Open Space Element of the Grass Valley General Plan (City of Grass Valley 1999b) identifies a goal of balancing considerations related to land use development and the natural environment to protect and properly utilize Grass Valley's sensitive environmental areas/features, natural resources and open space lands. This element also identifies a series of objectives (COSO), policies (COSP), and implementation measures related to the protection of open space and the conservation, development and utilization of natural resources. The following objectives and policies are applicable to the proposed project:

3-COSO: Protection of rare and endangered animals and plants.

4-COSO: Reduction of urban development impacts on native vegetation, wildlife and topography.

3-COSG:Ensure the protection of Grass Valley's trees and forested areas.

5-COSO:Encouragement of wildlife through habitat protection.

6-COSO: Assurance of appropriate resource conservation and environmental protection measures as prerequisites to development.

9-COSO: Identification of heritage trees for special recognition and protection.

10-COSO: Identification of significant groves and groupings of trees for permanent open space designation.

3-COSP: Encourage clustering, density averaging, and other techniques in larger-scale new developments, as means of preserving open space and natural systems.

4-COSP: Establish standards for inclusion and management of permanent open space in new developments.

12-COSP: Enhance the City's tree ordinance addressing tree maintenance and protection both within new developments and elsewhere in the City.

Tree Protection and Preservation Ordinance

The City of Grass Valley Tree Protection and Preservation Ordinance is found in Chapter 12.36 of the City's Municipal Code. The ordinance requires permits for the removal of protected trees and mitigation consisting of replanting on or off-site of a minimum of one and one-half inch caliper healthy and well-branched deciduous tree or a five to six-foot tall evergreen tree for each removed tree (City of Grass Valley 2011). Protected trees fall into four categories: trees with a trunk of ten caliper inches or larger in diameter at breast height (DBH); significant trees which measure 24 caliper inches or larger in DBH; heritage trees which are trees listed on the official City of Grass Valley heritage tree list adopted by the City Council due to distinct form, size, age, location, species, unique qualities or historical significance; and street trees located within the public right-of-way (City of Grass Valley 2011).

6.3 IMPACTS

Methods of Analysis

The project setting was developed by reviewing available information on special-status species and sensitive habitats known to occur in the project vicinity. This review was supplemented with a field survey to determine which of these species occurs on site or whether potential habitat for these species is present on the proposed project site. A field visit was conducted by Dudek biologist Laura Burris on March 4, 2016. These assessments form the basis of the Biological Technical Report found in Appendix E.

CEQA requires that projects analyze the potential impacts on special-status plant and animal species, as well as on sensitive habitats, wildlife corridors, and waters of the United States. For the purposes of this EIR, impacts on wildlife species that are not considered special status are generally not considered significant unless impacts are associated with the species' migration routes or movements, or the species are considered locally important. In the region of the project site, deer or other common species (e.g., skunk, raccoon, opossum, and coyote) would not be considered special-status species; however, potential adverse effects on their movements and migration routes must be evaluated. Regardless of status, all nesting native bird species are protected from harm under the California Fish and Game Code and the federal Migratory Bird Treaty Act.

The geographic context for the analysis of cumulative biological impacts includes the areas contained within the Sierra Foothills, but primarily focused on the area within the City limits. Present and probable future projects within the region as discussed in Chapter 3, Land Use, are anticipated to permanently remove plant and wildlife resources, which could affect both common and special-status species and their habitat.

Significance Criteria

A biological resources impact would be significant if any of the following conditions, as described in Appendix G of the CEQA Guidelines, would result with implementation of the proposed project. Would the project:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Project Impacts

Impact 6-1: Would the project have a substantial adverse effect on candidate, sensitive or special-status species?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measures 6a through 6d	Mitigation Measures 6a through 6d
Significance after mitigation:	Less than significant	Less than significant

Alternative A

Three special-status plant species, Stebbins' morning-glory (*Calystegia stebbinsii*), Follett's monardella (*Monardella follettii*), and Sierra blue grass (*Poa sierrae*), have the potential to occur within the project site. The nearest CNDDB documented occurrence for Stebbins' morning-glory is located approximately 3.9 miles southwest of the project site (Appendix E). No evidence

for presence of any special-status plant species was found based on surveys and vegetation observed on or near the project footprint. However, on-site surveys were conducted at a time when special-status plant species were not evident or identifiable. Since suitable habitat for special-status plant species exists on the project site there is potential that these species may be present. Removal of special-status plant species for grading of the project site would result in a significant impact. Mitigation Measure 6a requires that a special-status plant species survey be completed before construction begins and stipulates protection and relocation measures to ensure the survival of any special-status plant species on site. Implementation of Mitigation Measure 6a would ensure that potential impacts to special-status plant species are reduced to a **less-than-significant** level.

Only two special-status animal species, Blainville's horned lizard and northern goshawk (*Accipiter gentilis*), have the potential to utilize the project site for nesting, foraging cover and/or for localized movement within the project vicinity. However, the Biological Technical Report (Appendix E) concluded that it is unlikely Blainville's horned lizard would occur on the project site due to lack of appropriate soils. The Biological Technical Report also concluded that although northern goshawks are known to nest within the ponderosa pine forest, it is unlikely this species would use the project site for nesting since the site is surrounded by development and highly degraded areas. The surveys conducted on the project site found no evidence of the presence of special-status animal species, however due to weather conditions at the time the survey was conducted, the survey is not considered to be determinative of the absence of these species. If these species are present within the project site during construction, construction activities could disrupt or harm individuals. In addition, suitable habitat for nesting birds and raptors is present in the trees within the project site. Nesting birds and raptors are protected by the Migratory Bird Treaty Act and California Fish and Game Code. Vegetation removal or other noise and vibration from construction activities could result in direct impacts to nesting birds, should they be present at the time of construction. Direct impacts to nesting birds, if present, would be considered significant if they result in nest abandonment during the breeding season. Any harm to Blainville's horned lizard or harm or nesting disruption that occurs to, northern goshawk or any nesting bird would be a significant impact.

Mitigation Measure 6b requires that a pre-construction survey be completed to identify presence of Blainville's horned lizard and that avoidance measures be implemented if the species occurs on site. Mitigation Measure 6c requires a preconstruction nesting bird survey be conducted and establishes avoidance measures to protect any active nests. Mitigation Measure 6d requires that all construction workers complete worker environmental awareness training prior to conducting construction activities on site so that all workers are familiar with the types of biological resources that are known to occur on site or have potential to occur on site, and the best management practices for avoiding impacts to these resources. With implementation of Mitigation Measure 6b through 6d, potential impacts to Blainville's horned lizard and nesting birds would be reduced to a **less-than-significant** level.

Alternative B

Alternative B would involve a similar area of disturbance within the project site as Alternative A; it would involve slightly more grading in the southwestern portion of the project site. It would result in the same potential as Alternative A to affect special-status plants and wildlife, including potential effects to the special-status plant species Stebbins' morning-glory (*Calystegia stebbinsii*), Follett's monardella (*Monardella follettii*), and Sierra blue grass (*Poa sierrae*). Removal of special-status plant species for grading of the project site would result in a significant impact. Mitigation Measure 6a, which would require a special-status plant species survey and protection and/or relocation measures, would be implemented to ensure that potential impacts to special-status plant species are reduced to a **less-than-significant** level because it would ensure survival of a local population of these species.

As discussed previously, the site has the potential to support Blainville's horned lizard, northern goshawks, and other nesting birds. Implementation of Mitigation Measures 6b through 6d, which require preconstruction surveys, avoidance measures, and worker environmental awareness training, would ensure that the potential for construction activities to harm special-status wildlife species would be reduced to a **less-than-significant** level.

Impact 6-2: Would the project have a substantial adverse effect on riparian habitat or other sensitive natural communities?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Significant	Significant
Mitigation measures:	Mitigation Measure 6e	Mitigation Measure 6e
Significance after mitigation:	Less than significant	Less than significant

As described in Section 6.1, Environmental Setting, there are two sensitive habitats within the project site. This includes 3.15 acres of McNab cypress woodland, located in two patches – one in the northeastern corner of the site and one in the southeastern corner, and a small stand (0.62 acre) of cottonwood forest in the southwestern corner of the site (Appendix E).

Alternative A and Alternative B

Under both Alternative A and Alternative B, the project proposes to remove all of the McNab cypress woodland within the project site. The project entrance from Dorsey Drive is proposed to be placed in the northeastern corner of the site, generally consistent with the existing easement that delineates the anticipated alignment of Spring Hill Drive through the project site. One retail pad, Pad 3, is proposed to be located on the west side of Spring Hill Drive, within the site's northeastern patch of McNab cypress woodland. Under Alternative A, Pad 3 is proposed to include 3,300 square feet while under Alternative B it would include 3,200 square feet. The proposed grading plan

involves lowering the northernmost portions of the project site, to create a relatively flat area between Pad 3, Pad 1, and Major 1 under both alternatives. The elevation of Dorsey Drive is approximately 2,705 feet above MSL, and the proposed elevation for Pad 3 is approximately 2,673 feet above MSL. Thus, the grading plan anticipates lowering the site of Pad 3 approximately 26 feet below the existing elevation. The extent of grading required to create this relatively flat area and construct Spring Hill Drive, Pad 3, and the associated parking lot, would remove all of the McNab cypress woodland in this portion of the site.

Similarly, both alternatives propose placing multi-family apartments in the southeastern corner of the project site. The extent of grading required to create building pads and construct the associated parking lot, retaining walls and a stormwater detention basin would remove all of the McNab cypress woodland in this portion of the site.

The project proposes to create a stormwater detention basin in the southwestern portion of the project site under both alternatives. The project would also involve grading, construction of retaining walls, and construction of parking lots in this area. These elements of the project would require the removal of the majority of the cottonwood forest community from the project site.

Removal of all 3.15 acres of McNab cypress woodland and the majority of the 0.62 acres of cottonwood forest from the project site would be a **significant** impact of the project because these vegetation communities are considered sensitive natural communities due to their State rarity ranking of S3.2, as discussed in Section 6.1, Environmental Setting.

Mitigation Measure 6e requires that the project applicant provide compensation for the loss of McNab cypress woodland and cottonwood forest from the project site through a combination of on-site replanting and off-site restoration sufficient to ensure no net loss of habitat functions or values. This would reduce the impact to a **less-than-significant** level.

Impact 6-3: Would the project have a substantial adverse effect on federally protected wetlands?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Significant	Significant
Mitigation measures:	Mitigation Measure 6f	Mitigation Measure 6f
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

As described in Section 6.1, Environmental Setting, the southwestern portion of the project site supports an intermittent drainage and a seasonal wetland (Appendix E). These features are presumed to be federally protected wetlands (under the Clean Water Act) because they flow into an existing City storm drain located under Spring Hill Drive, which outflows to Wolf Creek. As discussed in

Impact 6-1, under both Alternative A and Alternative B, the project proposes to alter the natural grade, create a stormwater detention basin, and construct retaining walls and parking lots in this portion of the project site. These elements of the project would require the removal of the majority of the seasonal wetland from the project site. This loss of federally protected wetlands constitutes a **significant** impact of the project. Mitigation Measure 6f requires that the project applicant complete a jurisdictional delineation to establish the limit of federally protected wetlands within the project site, obtain a permit to impact wetlands from the ACOE, and provide compensation for the lost wetlands through a mitigation bank approved by the ACOE and the City of Grass Valley. Implementation of Mitigation Measure 6f would ensure that there is no net loss of habitat values and functions in the region, and would reduce this impact to **less than significant.**

Impact 6-4: Would the project interfere substantially with wildlife movement?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Alternative A and Alternative B would involve a similar area of disturbance and both alternatives would result in the loss of most of the existing natural habitat within the project site. The project site is not a regional migratory wildlife corridor. The CDFW Essential Connectivity Map shows a statewide network of 850 relatively intact natural landscapes connected by 192 essential connectivity areas. According to this map, the nearest essential connectivity area is located approximately 4.51 miles north of the project site (Appendix E). The project site is bounded on all sides by development and is not contiguous with any wildlife habitat or corridors. The site may provide island habitat for birds and other wildlife adapted to urban environments. As island habitat, the site can facilitate localized movement patterns associated with foraging. Birds and other wildlife adapted to urban environments would be unlikely to use the site during construction. The site does not provide any unique habitat qualities thus the temporary loss of use of the site would not impair wildlife movement and foraging in the project vicinity. Upon completion of construction, localized wildlife movement could occur within the limited natural habitat areas that would remain around the perimeter of the site. Because the site does not support substantial wildlife movement or migration, and the qualities of the site that support localized wildlife movement would remain after site development, either Alternative A or Alternative B would have a **less than significant** effect on wildlife movement.

Impact 6-5: Would the project conflict with local policies or ordinances protecting biological resources?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Construction of the project under either Alternative A or Alternative B would require removal of most of the existing trees within the project site. As described in Section 6.2, Regulatory Framework, the Grass Valley Tree Preservation Ordinance requires mitigation for removal of any trees that are have a trunk that measures ten inches or larger in diameter DBH. In compliance with the Tree Preservation Ordinance, the project would be required to obtain a construction related tree removal permit. To obtain this tree removal permit, the project applicant must: (a) file an application and filing fee with the tree permit administrator, (b) submit a site plan indicating the location of the trees proposed for removal, (c) tag all trees proposed for removal with pink tagging tape, and (d) submit a tree protection plan for any trees proposed to be retained on site.

As required by the City's Tree Preservation Ordinance, the project would be required to plant either a one and one-half inch caliper healthy and well-branched deciduous tree or a five to six-foot tall evergreen tree for each tree removed. The proposed landscaping plan demonstrates that all tree planting required under the Tree Preservation Ordinance would be accommodated within the project site. Although the Tree Preservation Ordinance allows for planting replacement trees off-site in locations approved by the City and/or paying the City's in-lieu fee for tree mitigation, it is not expected that either of these options would be necessary. Because the Tree Preservation Ordinance stipulates that the requirements for obtaining a tree removal permit must be made conditions of project approval and issuance of the construction related tree removal permit, the City would ensure that the project complies with the Tree Preservation Ordinance prior to issuance of grading permits for the site. Thus the project would have a **less than significant** impact associated with potential conflicts with the City's policies and regulations for the protection of biological resources.

Impact 6-6: Would the project conflict with provisions of an approved regional, state, or local habitat conservation plan?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

There are no adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) within the City of Grass Valley or Nevada County. Therefore, under Alternative A or Alternative B, the project would have **no impact** related to conflict with an adopted HCP or NCCP.

Impact 6-7: Would the project contribute to significant cumulative impacts to biological resources?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The geographic scope for consideration of cumulative impacts to biological resources is the City of Grass Valley. The main habitat types found in the City include northern mixed chaparral, non-native grassland, black oak woodland, blue oak woodland, canyon live oak forest, foothill pine-oak woodland, west side ponderosa pine forest, and riparian habitats (City of Grass Valley 1999a). A CNDDB search indicated that 3 special-status animals and 12 special-status plants have the potential to occur within the Grass Valley USGS 7.5-minute quadrangle (Appendix E). The City of Grass Valley General Plan EIR found that while buildout of the General Plan would have the potential to result in significant impacts to biological resources, these impacts would be reduced to a less than significant level through compliance with the policies and standards identified in the General Plan. For example, the General Plan EIR found that with a requirement that development cause "no net loss of habitat functions or values" through "avoidance of the resource, or through creation or restoration of habitat of superior or comparably quality, in accordance with guidelines of the U.S. Fish and Wildlife Service and the California Department of Fish and Game," cumulative impacts to habitat would be reduced to a less than significant level. Specifically, the General Plan EIR found that potential cumulative impacts related to loss of habitat, particularly for sensitive species, loss of wetlands, and adverse effects on movement and dispersal of wildlife and wildlife migration corridors would all be reduced to less than significant levels through compliance with the General Plan and City ordinances. Thus, there would be no significant cumulative impact to which the project could contribute. Further, implementation of Mitigation

Measures 6a through 6f would ensure that the project would result in no net loss of habitat functions or values, as discussed in Impacts 6-1 through 6-3.

6.4 MITIGATION MEASURES

Mitigation Measure 6a Prior to issuance of grading permits, a special-status plant species survey shall be conducted at a time when special-status plants are evident and identifiable to determine if they are present on site. Typically this occurs between April and July each year, but may vary somewhat based on weather patterns. The specific timing of the surveys shall be determined by a qualified biologist. Surveys shall be conducted by a qualified biologist knowledgeable of the plant species in the region and shall be floristic in nature. If any special-status plant species are identified during the surveys, a no-disturbance buffer shall be created by the qualified biologist around the species. The perimeter of the buffer zone shall be fenced or marked with staked flags. If avoidance is not possible, consultation shall be initiated with CDFW or USFWS, depending on the status of the species, to establish a plan to ensure the continued presence of these species in the project region. This may include removing plants from the site and transplanting them to a location that is subject to a conservation easement or other mechanism to ensure it remains in open space, seed salvage, other plant propagation measures, and/or offsite habitat creation or restoration. If no evidence exists that special-status plant species are present on the project site, then no further mitigation is required.

Mitigation Measure 6b Prior to issuance of grading permits, a pre-construction survey shall be conducted to determine if Blainville's horned lizard is present on site. Surveys shall be conducted by a qualified biologist knowledgeable of the lizard species in the region and shall occur either mid-day in spring or early morning in summer, on a day with full sun or partly cloudy conditions and no precipitation. If any Blainville's horned lizard are identified during the surveys, a no-disturbance buffer shall be created by the qualified biologist around the species. The perimeter of the buffer zone shall be fenced or marked with staked flags. If avoidance is not possible, consultation shall be initiated with CDFW to determine if relocation is appropriate to conserve the species. If no evidence exists that Blainville's horned lizard are present on the project site, then no further mitigation is required.

Mitigation Measure 6c Should construction begin during the bird breeding season (February 1 through September 30), a pre-construction nesting bird survey shall be performed no sooner than 14 days prior to any groundbreaking activities or tree removal to determine if there are any active nests within the project area (including a 200-foot buffer for raptors). If the construction site remains inactive for more than 1 month during the breeding season and construction would resume during the breeding season, another pre-construction nesting bird survey shall be performed no sooner than 14 days prior to reactivation of construction activities on site. If any active nests are observed during surveys, an avoidance buffer shall be determined and flagged by the qualified biologist based on species, location, and planned construction activity. These nests shall be avoided until the chicks have fledged and the nests are no longer active, as determined by the qualified biologist. Avoidance could consist of delaying construction in proximity to the nest during the nesting season, or creating a buffer zone between the nest and the activity. Project activities shall be confined to daylight hours to prevent impacts to foraging nocturnal avian species. If preconstruction surveys indicate nests are inactive or potential habitat is unoccupied during construction period, no further mitigation is required.

Mitigation Measure 6d All construction workers shall receive worker environmental awareness program training conducted by a qualified biologist or an environmentally trained construction manager. Worker environmental awareness program training may also be conducted through a video created by a qualified biologist specifically for this project. Worker environmental awareness program training shall instruct workers to recognize all special-status species potentially present in the project area; identify their habitat; and discuss the nature and purpose of protective measures, including best management practices and other required mitigation measures. Personnel shall be instructed to avoid wetlands and waters on the project site, other than where impacts have been authorized, and to prevent spills, and shall be given contact information for the qualified biologist.

Mitigation Measure 6e Prior to issuance of grading permits, the project applicant shall submit to the City evidence that compensatory habitat conservation and/or restoration for the loss of McNab cypress woodland and cottonwood forest is incorporated within the proposed landscaping plans and/or has been provided for through purchase of credits in a habitat mitigation bank

and/or offsite habitat creation/restoration has been completed on a site subject to a conservation easement or other mechanism providing for the site's perpetual conservation. The habitat conservation and/or restoration shall occur over a total area of 3.15 acres for McNab cypress woodland and 0.62 acres for cottonwood forest. This may include a combination of on-site replanting and restoration and off-site restoration sufficient to ensure no net loss of habitat functions or values. On-site planting may include restoration of the disturbed areas of McNab cypress woodland and cottonwood forest, as well as planting of individual McNab cypress and Fremont cottonwood trees as part of the proposed landscaping plan.

Mitigation Measure 6f Prior to issuance of a grading permit, the project applicant shall acquire a Clean Water Act Section 404 permit and Section 401 Water Quality Certification. To compensate for the loss of jurisdictional wetlands associated with proposed activities, the project applicant shall (1) restore and/or create wetlands on site; (2) create wetlands at an off-site location acceptable to the resource agencies; (3) purchase compensatory mitigation credits at an agency-approved mitigation bank; or (4) a combination of 1, 2, or 3. The project applicant shall develop the mitigation approach in conjunction with the resource agencies during the permitting process. The mitigation requirements shall be in compliance with federal and state Clean Water Act laws. The final mitigation ratios, design, and implementation shall comply with the terms and conditions of the Section 404 permit issued by the Sacramento District U.S. Army Corps of Engineers and the Section 401 Water Quality Certification and Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board.

6.5 REFERENCES CITED

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 23, 1999.

City of Grass Valley. 1999b. *Grass Valley General Plan Update Environmental Impact Report.* Prepared for the City of Grass Valley by Quad Knopf. August 1999.

City of Grass Valley. 2011. "City of Grass Valley Municipal Code – Title 12 – Streets, Sidewalks and Public Places Chapter 12.36 Tree Preservation and Protection." Adopted April 12, 2011. Accessed Available at http://www.cityofgrassvalley.com/government/municipal-codes

Quad Knopf. 1998. *Grass Valley General Plan Background Report*. Prepared November 1998.

SOURCE: USDA 2016

DUDEK

0 100 200 Feet

FIGURE 6-1

Vegetation Comminities

Dorsey Marketplace EIR

SOURCE: USDA 2016

DUDEK

0 100 200 Feet

FIGURE 6-2

Aquatic Features

Dorsey Marketplace EIR

CHAPTER 7
CULTURAL RESOURCES

This section describes the potential for prehistoric resources, historical resources, and tribal cultural resources to be damaged as a result of development of the project, identifies associated regulatory requirements, evaluates potential impacts, and identifies mitigation measures related to implementation of the proposed Dorsey Marketplace Project (proposed project). Prehistoric resources include sites and artifacts associated with the indigenous, non-Euro-American population, generally prior to contact with people of the European descent. Historical resources consist of structures, features, artifacts, and sites that date from Euro-American settlement of the region. Information referenced to prepare this section includes the following:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999)
- *Grass Valley General Plan Update Background Report* (Quad Knopf 1998)
- *Cultural Resources Inventory Report for the Dorsey Marketplace Project Grass Valley, Nevada County*, prepared by Dudek (Appendix F)

One comment letter addressing cultural resources was received in response to the Notice of Preparation (NOP) for this EIR. The letter was sent by the Native American Heritage Commission (NAHC) and requested compliance with the tribal consultation requirements of Assembly Bill 52 and Senate Bill 18. A copy of the NOP and comments received in response to the NOP is included in Appendix A.

7.1 ENVIRONMENTAL SETTING

Paleoindian Period (Pre-5500 BC)

Occupation of the Sierra Nevada region is likely to have occurred at least 9,000 years ago, however, only a handful of Paleoindian Period lithic bifacial points have been recorded. Of these recorded points, the nearest were found in the Sierra Valley west of Reno, Nevada, Ebbett's Pass south of Lake Tahoe, and at the Sailor Flat site in the Tahoe National Forest (Appendix F). Typical assemblages of the Paleoindian period include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools (Appendix F).

Late Prehistoric Period (AD 500 to AD 1750)

The Tahoe Reach is currently the most commonly applied cultural temporal sequence in this region (Appendix F). This sequence contains the Washoe Lake Phase, Tahoe Reach Phase, Spooner Phase, Martis Complex, and Kings Beach Complex; of which the Martis Complex and the Kings Beach Complex are most applicable to the project area (Appendix F).

Martis Complex (3000 BC to AD 500)

The Martis complex has been identified to extend from Lassen County to Alpine County from 3000 BC to approximately 500 AD Subsidence during the Martis Complex was based on hunting and seed collecting economy, with highly mobile populations that exploited both upper and lower regions based on seasonal abundance of resources (Appendix F). Temporally representative tools include finger-held drills or punches, retouched volcanic flake scrapers, spokeshave-notched tools, and large biface blades and cores (Appendix F).

Kings Beach Complex (AD 500 – Historic Contact)

The Kings Beach Complex was characterized by migrating populations that traveled between upper areas during the warmer months and lower elevations during the fall and winter months with subsidence being primarily based on fishing and gathering (Appendix F). A reduction in size and weight of projectile points corresponded with adoption of bow and arrow technology and typical point forms within the region included desert side-notched, cottonwood, and rosegate series (Appendix F). Obsidian and chert, which are not local to the region, replaced volcanic materials such as basalt as the preferred materials for the manufacturing of lithic tools. The greater presence of these exotic materials and greater use of marine shell resources attests to increased trade capabilities with neighboring tribes. The Kings Beach Complex also included a reliance on acorns as exemplified by the increased presence of bedrock mortars and pestles formed from local cobbles. While the creation of mortars indicated a relatively high investment of time and energy, such bedrock milling features are just as frequently found at sites with limited-to-no subsurface cultural deposits as at intensive use occupations area with well-developed midden soils (Appendix F).

Ethnohistoric Period (Post-AD 1750)

During the ethnohistoric period, the region surrounding the project area would have been in Hill Nisenan (also known as the Southern Maidu) tribal territory (Appendix F). The Hill Nisenan tribal group utilized the resources of the Yuba, Bear, and American River watersheds extending from the Sierra Nevada summit to the Sacramento River. Habitations were commonly situated near primary drainages, along ridgelines with mild slopes and south-facing exposures and traditional village features included bedrock milling stations, granaries, conical housing structures, and sweat and ceremonial houses (Appendix F). Five major villages existed within an approximately 6-mile radius of Grass Valley, including Tuyi to the southeast, Tetema northeast of Nevada City, Kayempaskan northwest of Grass Valley, Hi'et on Wolf Creek and Tsekankanto the west of Grass Valley (Quad Knopf 1998). Typically, the dead were cremated and buried within the boundaries of the habitation area.

The Nisenan were highly mobile and their diet was centered on fishing, hunting, and collecting vegetative resources. Common tools of this time period included bows and arrows, traps,

harpoons, hooks, nets, portable and stationary grinding implements, and pestles and handstones. Some goods, such as canoes, were constructed from fibrous plants like tule balsa or logs. Imported items included shell ornaments and beads, green pigment, tobacco, steatite items and obsidian, while exported goods included bows and arrows, animal skins, pine nuts and other local resources (Appendix F).

The Nisenan spoke one of four closely related Maiduan languages, which include Konkow, Chico Maidu, Mountain Maidu, and Nisenan. The structure of these Maiduan languages suggests that all four languages were descended from the same proto-Maiduan speaking population to the north (Appendix F). Likely, these populations spread southward in the last 1,200 years as the Nisenan encroached into area previously occupied by the Miwok tribal groups sometime in the past few centuries. This population movement is substantiated by the high frequency of Miwok loan words in the Nisenan language, which is not a trait found in the other three Maiduan languages (Appendix F).

Historic Period

Spanish Period (1769-1822)

Exploration of the San Francisco Bay began in 1769 by Gaspar de Portola. Additional explorations of the bay and the plains to the east were conducted in 1772 by Father Pedro Eages and in 1776 by Juan Bautista De Anza. The first expedition to the Sacramento Valley was completed in 1808 by Lieutenant Gabriel Moragain, and explored areas along the American, Calaveras, Cosumnes, Feather, Merced, Mokelumne, Sacramento, and Stanislaus River Watersheds. The most recent Spanish expedition into this region was conducted in 1817 by Luis Arguello, which traveled up the Sacramento River to the mouth of the Feather River.

The Spanish missionization of Alta California was initiated in San Diego in 1796 and lasted until 1823. During this period, a total of 21missions were constructed including five in the region: San Francisco de Asis (1776), Santa Clara de Asis (1776), San Jose de Guadalupe (1797 in Alameda County), San Rafael Arcangle (1817 in Marin County), and San Francisco Solano (1823 in Sonoma County). While missionization had a detrimental effect on tribes throughout the region, there is no record of forcible transport of Nisenan communities by the Spanish to the missions (Appendix F).

Mexican Period (1822-1848)

Native populations were further disrupted by Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the late 1830s. Native American lands were seized by the Mexican republic and provided as part of larger Land Grants to affluent Mexican citizens and rancheros. The two largest areas of land in Sacramento Valley area was granted to Captain John Sutter. In 1839 Sutter founded New Helvetica, a trading and agricultural empire that

was headquartered within the Valley Nisenan territory at the confluence of the Sacramento and American rivers (Appendix F).

American fur trappers and traders conducted a number of exploratory intrusions into west Sierra Nevada Mexican territory. In 1826, Jedidiah Smith led a small party of trappers in an expedition along the Sierra Nevada and eventually entered the Sacramento Valley in 1827 (Appendix F). This expedition created maps of the territory that provided for the waves of European prospectors, ranchers, and settlers that would come in the following decades.

American Period (Post 1848)

California's physical and cultural landscapes were extensively changed and shaped by the mining of precious metals and other minerals following the discovery of gold in January of 1848 at Sutter's Mill in Coloma, on the South Fork of the American River. The following historic context is restricted to the origins and effects of mining in the American River Basin focusing on the Auburn area where the project is located. A comprehensive discussion of the history and context of mining activities at the statewide level can be found in *A Historical Context and Archaeological Research Design for Mining Properties in California* (Appendix F).

Within months following the initial discovery of gold, gold was being collected in the gravel bars of the North, Middle and South Forks of the American River. The effects of mining activities are still evident in the form of tailings ditches, and other mining features scattered throughout these areas. Gold was first discovered in the Auburn area on May 16, 1848, by Claude Chana and for the remainder of the month of May, Chana and his group continued to pan for gold just south of what is today the City of Auburn (Appendix F). By the summer of 1849, the area was transformed into a small community of wood and fabric buildings, originally known as North Fork Dry Diggings but was renamed Auburn sometime between Summer and Fall 1849.

Dr. Saunders built a cabin on Badger Hill at the eastern edge of present day Grass Valley in August of 1849. Others soon moved to the area including Reverend H.H. Cummings who built four cabins on the south side of the Boston Ravine. A sawmill was established in Fall 1849 and the post office was established on July 10, 1851, under the name of Centerville, which was changed to Grass Valley on August 20, 1852 (Quad Knopf 1998).

Development of the Mining Industry

Gold-bearing quartz was discovered at Gold Hill in 1850 and at Ophir, Rich and Massachusetts Hills shortly after; Gold Hill and Allison Ranch were the leading load mines during the 1850s (Quad Knopf 1998). A total of 98 mines are listed for Grass Valley with much of the mining activity taking place between 1850 and 1900. Mining operations slowed down following the Comstock bust in the mid-1960s but placer mining around Grass Valley was revived in 1870 due to the increase in

hydraulic-mining technology (ACS 2008). Mining operations began to slow down again in the early part of the 1900s; however, small scale placer mining using Gold Rush ear techniques made a brief reappearance during the Great Depression. Depression-era miners typically reworked old diggings in formerly mined areas or moved into previously unmined locations, often on public lands (Appendix F). During World War II mining operations were suspended, which led to the failure of many mines in Nevada County. After the war four mines (Empire, Pennsylvania, North Star and Idaho-Maryland) reopened, but eventually the last two closed in 1956 and 1957 ending 106 years of mining operations in the Grass Valley District (ACS 2008).

Record Search Results

Previous Research

Staff at the North Central Information Center (NCIC) at California State University Sacramento completed a records search for a 1-mile radius around the project area on April 11, 2016. A total of 49 previous studies were identified by the records search, of which three have covered at least a portion of the project area. These three reports are summarized below.

Jensen 2001

This report documents the results of an archaeological inventory completed for the DeSena 6.5-acre Development Project located close to Highway 49 and north Empire Mine Road. A records search conducted at the NCIC indicated that no previous surveys have been completed for the project site and no cultural resources had been identified within or immediately adjacent to the site. Jensen & Associates conducted an intensive pedestrian survey of the project site in 2001. The survey did not identify any prehistoric or historic cultural resources or materials on the project site but did observe that the site had been impacted by previous mining operations at Spring Hill and Idaho-Maryland. The negative results of the records search and field survey concluded that development of the property would not affect archaeological or built environmental resources, and no further mitigation was required (Appendix F).

Werner 1989

This report details the results of an archaeological pedestrian survey conducted for the 5.6-acre Nevada Terraces Development project in 1989 located generally south of the currently proposed Dorsey Marketplace area of potential effect (APE). No cultural resources have been recorded on the project site, no previous studies have been conducted and no archaeological site or materials were identified during the pedestrian survey. The negative results of the records search and field survey concluded that development of the property would not affect archaeological or built environmental resources, and no further mitigation was required (Appendix F).

Medin 2005

This report presents the results of an archaeological pedestrian survey conducted for the Dorsey Drive Interchange Project by the California Department of Transportation (Caltrans) in 2005. The initial archaeological survey was conducted in August 2001 and a follow-up survey was conducted in November 2005. The surveys identified two resources within the project area—the Spring Hill Mine and the Stone Ditch, which was a water conveyance feature; however, Caltrans archaeologists noted that neither of these properties appears to be important under NRHP criteria. The Spring Hill Mine consists of five concrete foundation features that correspond to buildings documented in the county assessor's building records. However, the integrity of the site was compromised because all of the buildings and Spring Hill mining equipment have been removed from the area. The remaining concrete features provide limited data potential beyond the descriptive recordation that has previously been completed. Stone Ditch has been destroyed by development and no remains of the site were present during the recent Dudek survey. No further study was recommended by Caltrans (Appendix F).

Historical Map Review

As part of the Cultural Resources Inventory Report (Appendix F) prepared for the project, historical aerial photographs from the years 1947, 1998, 2005, 2009, 2010, and 2012 were reviewed for the project area. The 1947 photograph shows the Spring Hill Mine and associated structures located in the central portion hill, with evidence of grading/clearing activities located west of the project area. The surrounding area is vegetated with pine, oak and cotton trees. In 1998, the central portion of Spring Hill is surrounded by development on the north, south, east and west sides making Spring Hill Mine and the associated structures no longer visible. A couple of dirt trails bisect the project area, running north-south. The 2005, 2009, 2010, and 2012 photographs did not show any changes to the project site or surrounding area and represent what the project site looks like to date.

Geoarchaeological Information

There is a very low potential for intact prehistorical cultural resources to be present on the project site due to the substantial disturbance of native soils from historical mining (Appendix F). However, there is also a potential that past mining activity resulted in the deposition of historical deposits and/or features. A geotechnical investigation of the project area was conducted by Holdrege & Kull (Appendix J1) between July and August 2007. A surface reconnaissance of the site completed by Holdrege & Kull noted that the western and central portions of the property contained abandoned mine features and the eastern portion was disturbed but undeveloped. Holdrege & Kull identified the Spring Hill shaft in the central portion of the property, which had been capped with concrete, as depicted on the historical Spring Hill Mine map. Several concrete foundations corresponding to the

locations of the mining features were observed and Holdrege & Kull noted that approximately 6.5 acres of the 27-acre project site contained mine waste (waste rock composed of mineralized serpentine and diabase rock with quartz).

Current Research Results

The records search identified one cultural resource, Spring Hill Mine, within the project site and an additional 26 cultural resources within the records search area. The Spring Hill Mine site was recorded by Caltrans archaeologists Medin and Schinke in 2001 as previously described. The mine was claimed in 1871 and operated until approximately the 1970s. It was evident that the mine had undergone improvements in the 1930s, which most likely destroyed any archaeological deposits or features that remained from the 1870s era of operations. The site consists of five mine features corresponding to the buildings documented in the county assessor's building records: a concrete foundation, warehouse and shower, head frame foundation, hoist house, and the former mill location. According to Caltrans, the Spring Hill Mine does not appear eligible for NRHP or CRHR listing in 2001 (Appendix F).

Native American Heritage Commission Search Results

Dudek contacted the Native American Heritage Commission (NAHC) on March 14, 2016, to request a search of the Sacred Lands File. The NAHC's response on March 24, 2016, indicated that the search failed to identify any Native American resources in the vicinity of the project (Appendix F). Letters containing a brief description of the planned project, reference maps and a summary of the NAHC Sacred Lands File and the NCIC search results were sent on April 5, 2016 to the listed tribal representatives. No response to these outreach attempts have been received to date (Appendix F).

Pedestrian Survey Results

An intensive pedestrian cultural survey of the project area was conducted by Dudek Archaeologist Kurt Lambert on April 28, 2016. The survey was conducted in compliance with the Secretary of the Interior's standards and guidelines for a cultural resources inventory. Survey methods consisted of walking parallel transects spaced no more than 10 meters apart over the entire project area and examining the ground surface for prehistoric artifacts, soil discoloration, soil depressions, features indicative of the current or former presence of structures or buildings and historic artifacts. Documentation of the site conditions and Spring Hill Mine complied with the Office of Historic Preservation and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a). Additionally, the Spring Hill Mine was recorded on California Department of Parks and Recreation Form DPR 523L (Series 1/95) Continuation Sheet, using the *Instructions for Recording Historical Resources* (Appendix F).

As previously recorded, the abandoned Spring Hill Mine concrete foundations, machinery anchor features, and shaft location were identified in the western portion of the site and the eastern portion of the site was disturbed but no mining or other features were present. The previously recorded historic Spring Hill Mine site (P-29-2455) was relocated during the field survey. The distribution and number of features observed during the survey were consistent with the observations recorded by Caltrans in 2001. Additional graffiti and illicit dumping of modern refuse was recorded at the features but no historical or cultural constituents were observed on the surface of the site (Appendix F).

Assembly Bill 52 Tribal Consultation

The City drafted contact letters to the United Auburn Indian Community (UAIC), which is the only tribe that has requested to be notified of projects within the City of Grass Valley under Assembly Bill (AB) 52. On February 16, 2016, a letter was sent via certified mail to the UAIC. This tribe is traditionally and culturally affiliated with the project area. The letter provided information regarding the project and requested that UAIC share any information or concerns regarding tribal cultural resources that could be affected by the project. The letter informed the UAIC of the initiation of the environmental review process for the project, project location and details, and the opportunity for consultation regarding the project. The letter conveyed that the recipient had 30 days from the receipt of the letter to request or deny, in writing, consultation for the project.

The UAIC responded to the City's notification letter on April 27, 2016, via the U.S. Postal Service to request consultation for the project. and providing recommended mitigation measures. Although this response was received outside of the 30-day consultation period allowed under AB 52, the City responded to the UAIC request for consultation via email. The City and UAIC representatives discussed the project by telephone and email. Subsequent to those discussions, UAIC informed the City that there was no further need for consultation.

7.2 REGULATORY SETTING

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Several laws and regulations at the federal and state level govern archaeological and historic resources deemed to have scientific, historic, or cultural value. The pertinent regulatory framework, as it applies to the proposed project, is summarized in the following text.

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 established the National Register of Historic Places (NRHP) as the official federal list of cultural resources that have been nominated by state offices for their historical significance at the local, state, or national level. Properties listed in the NRHP, or determined eligible for listing, must meet certain criteria for historical significance and possess integrity of form, location, and setting. Under Section 106 of the act and its implementing regulations, federal agencies are required to consider the effects of their actions, or those they fund or permit, on properties that may be eligible for listing or that are listed in the NRHP. The regulations in 36 CFR 60.4 describe the criteria to evaluate cultural resources for inclusion in the NRHP. Properties may be listed in the NRHP if they possess integrity of location, design, setting, materials, workmanship, feeling, and association, and they:

A. Are associated with events that have made a significant contribution to the broad patterns of our history;

B. Are associated with the lives of persons significant in our past;

C. Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded, or may be likely to yield, information important in prehistory or history.

These factors are known as Criteria A, B, C, and D.

In addition, the resource must be at least 50 years old, except in exceptional circumstances. Eligible properties must meet at least one of the criteria and exhibit integrity, which is measured by the degree to which the resource retains its historical properties and conveys its historical character, the degree to which the original fabric has been retained, and the reversibility of the changes to the property. Archaeological sites are evaluated under Criterion D, which concerns the potential to yield information important in prehistory or history.

The Section 106 review process, typically undertaken between the U.S. Army Corps of Engineers as part of issuing a Section 404 permit and the State Historic Preservation Officer, involves a four-step procedure:

- Initiate the Section 106 process by establishing the undertaking, developing a plan for public involvement, and identifying other consulting parties.

- Identify historic properties by determining the scope of efforts, identifying cultural resources, and evaluating their eligibility for inclusion in the NRHP.
- Assess adverse effects by applying the criteria of adverse effect on historic properties (resources that are eligible for inclusion in the NRHP).
- Resolve adverse effects by consulting with the State Historic Preservation Officer and other consulting agencies, including the Advisory Council on Historic Preservation, if necessary, to develop an agreement that addresses the treatment of historic properties.

The Department of the Interior has set forth Standards and Guidelines for Archaeology and Historic Preservation. These standards and guidelines are not regulatory and do not set or interpret agency policy. A project that follows the standards and guidelines generally shall be considered mitigated to a less-than-significant level, according to Section 15064.5(b)(3) of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.).

State Regulations

California Register of Historical Resources

California Public Resources Code, Section 5024.1, authorizes the establishment of the CRHR. Any identified cultural resources must therefore be evaluated against the CRHR criteria. In order to be determined eligible for listing in the CRHR, a property must be significant at the local, state, or national level under one or more of the four significance criteria, modeled on the NRHP. In order to be determined eligible for listing in the CRHR, a property must be significant at the national, state, or local level under one or more of the following four criteria:

1. It is associated with events or patterns of events that have made a significant contribution to the broad patterns of the history and cultural heritage of California and the United States.
2. It is associated with the lives of persons important to the nation or to California's past.
3. It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. It has yielded, or may be likely to yield, information important to the prehistory or history of the state and the nation.

In addition to meeting one or more of the previous criteria, a significant property must also retain integrity. Properties eligible for listing in the CRHR must retain enough of their historic character to convey the reason(s) for their significance. Integrity is judged in relation to location, design, setting, materials, workmanship, feeling, and association.

California Environmental Quality Act

Under CEQA (California Public Resources Code, Section 21000 et seq.), public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to CEQA Section 21084.1, a "project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on "unique archaeological resources."

"Historical resource" is a term of art with a defined statutory meaning (see California Public Resources Code, Section 21084.1, and 14 CCR 15064.5(a) and 15064.5(b)). The term embraces any resource listed in or determined to be eligible for listing in the CRHR. The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be "historical resources" for purposes of CEQA unless a preponderance of evidence indicates otherwise (California Public Resources Code, Section 5024.1, and 14 CCR 4850). Unless a resource listed in a survey has been demolished or has lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria as discussed previously, prior to making a finding as to a proposed project's impacts to historical resources (California Public Resources Code, Section 21084.1, and 14 CCR 15064.5(a)(3)). The fact that a resource is not listed or determined to be eligible for listing does not preclude a lead agency from determining that it may be a historical resource (California Public Resources Code, Section 21084.1, and 14 CCR 15064.5(a)(4)).

CEQA also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource, as described previously, and unique archaeological resources. Under CEQA, an archaeological resource is considered "unique" if it:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;
- Has a special and 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 (California Public Resources Code, Section 21083.2(g)).

CEQA states that if a proposed project would result in an impact that might cause a substantial adverse change in the significance of a historical resource, then an EIR must be prepared and mitigation measures and alternatives must be considered. A "substantial adverse change" in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (14 CCR 15064.5(b)(1)).

The CEQA Guidelines (Section 15064.5(c)) also provide specific guidance on the treatment of archaeological resources, depending on whether they meet the definition of a historical resource or a unique archaeological resource. If the site meets the definition of a unique archaeological resource, it must be treated in accordance with the provisions of California Public Resources Code, Section 21083.2.

CEQA Guidelines, Section 15064.5(e), requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the remains are those of Native Americans, the NAHC must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as identified in a timely manner by the NAHC. Section 15064.5 of the CEQA Guidelines directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Senate Bill 18

Senate Bill (SB) 18 (Government Code, Sections 65352.3, 65352.4) requires that, prior to the adoption or amendment of a general plan proposed on or after March 1, 2005, a city or county must consult with Native American tribes with respect to the possible preservation of, or the mitigation of impacts to, specified Native American places, features, and objects located within that jurisdiction.

Senate Bill 297

SB 297 addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction; and establishes the NAHC to resolve disputes regarding the disposition of such remains. The provisions of SB 297 have been incorporated into Section 15064.5(e) of the CEQA Guidelines.

Assembly Bill 52

Assembly Bill (AB) 52 requires consultation with Native American tribes traditionally and culturally affiliated with the geographic area in which a project requiring CEQA review is proposed if those tribes have requested to be informed of such proposed projects. The intention of such consultation is to avoid adverse impacts to tribal cultural resources. This law is in addition to existing legislature protecting archaeological resources associated with California Native American tribes. AB 52 applies to all projects initiating environmental review in or after July 2015.

California Health and Safety Code

Section 7050.5(b) of the California Health and Safety Code specifies protocols to address any human remains that may be discovered. The code states:

> In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in section 5097.98 of the Public Resources Code.

Local Regulations

Grass Valley 2020 General Plan

The Grass Valley General Plan Historical Element has adopted goals, objectives, policies, and implementation measures aimed at the preservation and enhancement of historical and cultural resources within the City. The following goal (HG) and policies (HP) are applicable to the proposed project:

1-HG: Conserve and enhance the historical identity of Grass Valley.

4-HP: Enhance the appearance of the City entryways, commercial areas, and streetscapes, in part through the use of elements in the design standards that complement Grass Valley's historic heritage.

10-HP: Where historic and prehistoric cultural resources have been identified, the City shall require that development be designed to protect such resources from damage, destruction, or defacement.

11-HP: If previously undiscovered cultural resources or human remains are encountered during construction or excavation, the procedures identified in Section 15064.5 of the CEQA Guidelines shall be followed.

7.3 IMPACTS

Methods of Analysis

A records search along with a pedestrian survey of the site was conducted in April 2016 by Dudek. The results of these searches and surveys are included in the *Cultural Resources Inventory Report for the Dorsey Marketplace Project Grass Valley, Nevada County* (Appendix D). The survey also included consultation with the NAHC and a sacred lands file search. No Native American cultural resources were identified within the survey area. This research established the historic context and derived locations of other resources that may exist or have existed within the project area.

Although the project-specific impact analysis for cultural resources necessarily includes separate analyses for prehistoric resources, historic-period resources, and human remains, the cumulative analysis combines these resources into a single, non-renewable resource base and considers the additive effect of project-specific impacts to significant regional impacts on cultural resources.

Significance Criteria

Potential impacts associated with cultural resources have been evaluated using the following criteria, based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). The proposed project would have a potentially significant impact related to cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical or archaeological resource as defined in CEQA Guidelines, Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.

An adverse change in the significance of a historical or archaeological resource is one that would disturb, damage, or destroy the resource, while the disturbance of damage would reduce or eliminate the potential for the resource to yield important information and context regarding history.

Impact Analysis

Impact 7-1: Would the project cause a substantial adverse change in the significance of a historical resource, archaeological resource, or tribal cultural resource?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 7a	Mitigation Measure 7a
Significance after mitigation:	Less than significant	Less than significant

Alternative A

As described in Section 7.1, Environmental Setting, the records search identified one cultural resource, Spring Hill Mine, within the project site. The Spring Hill Mine consists of five concrete foundation features that correspond to buildings documented in the county assessor's building records, but all buildings and mine equipment have been removed from the area. An earlier archaeological survey identified the Stone Ditch feature within the project area. The Stone Ditch was destroyed by development of the Dorsey interchange and no remains of the site were present during the most recent survey. According to Caltrans, neither the Spring Hill Mine or the Stone Ditch appeared eligible for NRHP or CRHR listing in 2001 (Appendix F). Per correspondence with the NAHC, no Native American resources have been identified in the vicinity of the project, and no responses to NAHC outreach attempts regarding the proposed project have been received (Appendix F). Further, consultation with UAIC under AB 52 did not identify any tribal cultural resources within the project site or the vicinity that could be adversely affected by development of the proposed project.

Due to the substantial disturbance of native soils from historical mining, there is a very low potential for intact prehistorical cultural resources to be present on the project site (Appendix F). However, there is also a potential that past mining activity resulted in the deposition of historical deposits and/or features, such as mining historic period mining deposits and other artifacts, and that those could be uncovered during construction. Unanticipated discovery of historical or archaeological resources could result in adverse effects to the integrity and significance of those resources; therefore the chance for such discovery is considered a **potentially significant** impact under Alternative A. Implementation of **Mitigation Measure 7a** would reduce this impact to **less than significant** by requiring construction worker training to identify potential resources and requiring that earth-disturbing activities within 100 feet of a potential resource be halted until a qualified archaeologist completes a significance evaluation.

Alternative B

Alternative B would involve a similar area of disturbance as Alternative A. Therefore, Alternative B would result in the same **potentially significant** impact associated with unanticipated discovery

of prehistorical and historical cultural resources. Implementation of **Mitigation Measure 7a**, as described previously, would reduce this impact to **less than significant**.

Impact 7-2: Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A

As described under Impact 7-1, no burial sites or cemeteries were identified within the project site during the 1989, 2001, 2005, or 2016 archaeological surveys. However, the field surveys relied on ground-level observations and did not include excavation. It is possible that informal burials could have occurred on site during prehistoric and historic periods. If any burials occurred, earth-moving construction activities, such as grading and excavation, could disturb human remains, which would be a significant impact. However, the project site has already experienced substantial disturbance of native soils from historical mining. Therefore, there is a very low potential for intact cultural resources or human remains to be present on the project site. Per the State Health and Safety Code (Section 7050.5), in the unlikely event that human remains are discovered, work will halt in that area and procedures set forth in the will be followed, beginning with notification to the City of Grass Valley and County Coroner. Construction contractors must comply with Section 7050.5(b) as a matter of law. As described in Section 7.2 Regulatory Setting, Section 7050.5(b) of the California Health and Safety Code requires that when any human remains are discovered, no further disturbance of the discovery site or nearby areas until the County coroner has investigated and made recommendations "concerning treatment and disposition of the human remains." Further, if the remains are determined to be of Native American descent, this section requires notification of and consultation with "those persons [the coroner] believes to be most likely descended from the deceased Native American. The descendants may, with the permission of the owner of the land, or his or her authorized representative, inspect the site of the discovery of the Native American human remains and may recommend to the owner or the person responsible for the excavation work means for treatment or disposition, with appropriate dignity, of the human remains and any associated grave goods," as provided by section 5097.98 of the Public Resources Code.

Compliance with the applicable provisions of the California Health and Safety Code and Public Resources Code would ensure that this impact remains **less than significant** because the proper protocols, as set forth by state law, would be followed in the event human remains are discovered.

Alternative B

Similar to Impact 7-1, Alternative B would involve a similar area of disturbance within the project site and therefore carries the same chance as Alternative A of discovering presently unidentified burials or human remains on the project site. If any burials occurred on site, earth-moving construction activities, such as grading and excavation, could disturb human remains, which would be a significant impact. In the unlikely event that remains are discovered on site, Alternative A would be required by state law to comply with State Health and Safety Code (Section 7050.5) and Public Resources Code (Section 5097.98), in which case, construction would halt in the area of the discovery, the County coroner would be notified and would investigate, and if the remains are determined to be of Native American descent, the most likely descendants would be notified and allowed to inspect and make recommendations for the appropriate treatment of the remains. Compliance with state law would ensure that Alternative B would have a **less-than-significant** impact associated with any discovery of human remains.

Impact 7-3: Could project construction contribute to a cumulative loss of cultural resources?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Alternative A and Alternative B would occur on the same project site and involve similar areas of disturbance. The project site is not known to support any archaeological or historic resources. The two alternatives have the same potential to result in significant impacts to presently unknown archaeological and historic resources that may be encountered during construction; thus they have the same potential to contribute to cumulative impacts to these resources.

Archaeological Resources and Tribal Cultural Resources

For the analysis of cumulative impacts to archaeological resources and tribal cultural resources, the geographic area is the project region, which includes the City of Grass Valley and adjacent areas within Nevada City, the unincorporated community of Alta Sierra, and other unincorporated areas of Nevada County. Development under the cumulative scenario in this area is expected to include buildout of the City of Grass Valley 2020 General Plan and the individual projects described in Chapter 3, Land Use, of this EIR.

Because all significant archaeological resources and human remains are unique and non-renewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base.

The loss of any one archaeological site affects all others in a region, because the cultural setting context for a given region is a reflection of all the cultural resources in that region and these resources are best understood in the context of the entirety of the cultural system of which they are a part. Tribal cultural resources are resources that are related to or may reflect a tribe's traditional and cultural activities and beliefs. They may occur in a specific individual location or may range across a broad landscape. These resources also contribute to the cultural setting context for a given region. While there are no currently known tribal cultural resources in the project region, some may be identified through the AB 52 consultation process as development occurs. There could therefore be a significant cumulative impact to archaeological resources if any cultural resources (including subsurface and surface archaeological resources) or tribal cultural resources are disturbed and/or destroyed.

The general plans of each jurisdiction in the area, as well as state and federal law, require that archaeological resources be preserved in place whenever feasible, and require resources that cannot be preserved be properly recorded, evaluated, and curated. State law also requires consultation with tribes that have been traditionally and culturally affiliated with a region to identify and develop mitigation for any potential effects to tribal cultural resources. Therefore, although development is anticipated in the region and could occur in proximity to known archaeological resource sites and has the potential to affect tribal cultural resources, compliance with the applicable state and federal regulations and general plan policies would ensure that the potential for loss of archaeological resources and associated research potential and the potential for loss of tribal cultural resources in the cumulative scenario would remain less than significant. Thus, there is no cumulative impact to which the project could contribute. Further, the project site is not known to support any archaeological resources, and potential impacts to presently unknown archaeological resources would be reduced to a less-than-significant level with implementation of Mitigation Measure 7a.

Historic Resources

For the analysis of cumulative impacts to historic resources, the geographic area is the City of Grass Valley. The Grass Valley General Plan states that "Grass Valley exhibits the settlement and progression of western towns from the mid-nineteenth century through the early twentieth century. A sense of history is pervasive, from ever-present reminders of gold mining heritage to fine examples of architecturally interesting and significant buildings. Historic preservation and enhancement figure prominently in the General Plan and supporting implementation measures" (City of Grass Valley 1999).

A wide range of historical resources are present within the City of Grass Valley. These include historic buildings, such as those in the downtown area, and specifically within the Downtown Historic District, and individual residences throughout the City, mining-related structures and

sites, such as those within the Empire Mine State Park. Specifically, historic resources within the City of Grass Valley include:

- Properties listed on the NRHP – the Grass Valley Public Library, the Empire Mine, and Mount St. Mary's Academy and Convent.
- Properties listed on the CRHR – the Holbrooke Hotel, the North Star Mine Powerhouse, and the three previously identified as being listed on the NRHP
- Seven California Historical landmarks,
- Ten California Points of Historic Interest, and
- Seven Nevada County Historical Landmarks (City of Grass Valley 2011).

Several of the goals, objectives, policies, and actions identified in the City of Grass Valley 2020 General Plan require preservation of historic resources. These include Historical Policy 10 which requires development be designed to protect identified historic and prehistoric cultural resources from damage, destruction, or defacement, Historical Implementation Action 1 that requires the City to "maintain a Historic Resources Ordinance and active programs to implement City policy for historic conservation and enhancement." Compliance with these and other applicable General Plan policies and municipal code would be ensured as part of the City's standard process for reviewing development proposals and would ensure that historic resources within the City are preserved. Therefore, impacts to historic resources in the cumulative scenario would remain less than significant, and there is no cumulative impact to which the project could contribute. Further, there are no known historical resources within the project site.

7.4 MITIGATION MEASURES

Mitigation Measure 7a All construction workers shall receive worker cultural resources awareness training conducted by a qualified archaeologist, and shall receive a worker cultural resources awareness brochure prepared by the same qualified archaeologist. Worker cultural resources awareness training may also be conducted through a video created by a qualified archaeologist specifically for this project. The program shall include relevant information regarding sensitive tribal cultural resources, including applicable regulations, protocols for avoidance, and consequences of violating state laws and regulations. The worker cultural resources awareness training shall also describe appropriate avoidance and minimization measures for resources that have the potential to be located on the project site, and shall outline what to do and who to contact if any potential archaeological resources or artifacts

are encountered. The program shall also underscore the requirement for confidentiality and culturally appropriate treatment of any kind of significance related to Native Americans and behaviors, consistent with Native American tribal values. Worker cultural resources awareness training shall instruct workers to recognize potential cultural resources, such as the presence of discolored or dark soil, fire-affected material, concentrations of lithic materials, or other characteristics observed to be atypical of the surrounding area; lithic or bone tools that appear to have been used for chopping, drilling, or grinding; projectile points; fired clay ceramics or non-functional items; non-local high-quality materials such as chert and obsidian; and historic artifacts such as glass bottles and shards, ceramic material, building or domestic refuse, ferrous metal, or old features such as concrete foundations or privies.

Prior to issuance of a grading permit, the City of Grass Valley shall verify that project construction documents include the following note: "If any cultural resources, such as structural features, mining equipment, unusual amounts of bone or shell artifacts, or architectural remains, are encountered during any construction activities, the contractor shall suspend all work within 100 feet of the find and immediately notify the City's Community Development Director." Further, the project applicant shall undertake the following:

- Retain a qualified archaeologist to conduct an investigation of the site as needed to assess the resources (i.e., whether it is a "historical resource" or a "unique archaeological resource") and to provide management recommendations should potential impacts to the resource be found to be significant (possible management recommendations for historical or unique archaeological resources could include resource avoidance or data recovery excavations where avoidance is infeasible in light of project design or layout, or is unnecessary to avoid significant effects).
- Consult with the United Auburn Indian Community (UAIC) to determine if the find is a tribal cultural resource. If so, consultation with the UAIC shall be consistent with the requirements of California Public Resources Code Sections 21084.3(a) and (b) and CEQA Guidelines Section 15370, and shall include consideration of requiring compensation for the impact by replacing or providing substitute resources or environments.

- As warranted by any cultural resources found on site, prepare reports for resources identified as potentially eligible for listing in the California Register of Historical Resources in consultation with the State Historic Preservation Officer, and if applicable, tribal representatives.

7.5 REFERENCES CITED

16 U.S.C. 470–470x-6. National Historic Preservation Act of 1966, as amended.

36 CFR 60. National Register of Historic Places.

36 CFR 800.1–800.16 and Appendix A. Protection of Historic Properties.

48 FR 44720–44726. "The Secretary of the Interior's Standards and Guidelines for Federal Agency Historic Preservation Programs Pursuant to the National Historic Preservation Act." April 24, 1998.

ACS (Anthropological Studies Center) Sonoma State University. 2008. *Historic Context for Empire Mine Historic District, Nevada County, California.* July 2008.

City of Grass Valley. 1999. *Grass Valley 2020 General Plan*. Prepared by Quad Knopf on behalf of the City of Grass Valley. Adopted 1999.

City of Grass Valley. 2011. *Draft Environmental Impact report for the Proposed Grass Valley Redevelopment Plan Fourth Amendment*. January 2011.

Quad Knopf. 1998. *Grass Valley General Plan Update Background Report*. November 1998.

CHAPTER 8
TRANSPORTATION

This section describes the results of the transportation impact analysis conducted to evaluate potential transportation-related impacts of the proposed Dorsey Marketplace (proposed project) on roadways, intersections, transit, bicycle, and pedestrian movements. The analysis includes a discussion of existing and cumulative transportation and circulation conditions as well as potential impacts from construction and operation of the project. Quantitative transportation analyses have been conducted for the following scenarios: Existing (without project), Existing Plus Project, Year 2030 (no project), and Year 2030 Plus Project.

Alternative A site plan shows a total of 178,960 square feet for commercial uses however the analysis in this EIR is based on an assumption that 181,900 square feet would be developed. This would allow the project developer to make minor modifications to the site plan as project designs are finalized. Alternative A would provide for up to 90 multiple-family residential units, a 3,200-sqaure foot clubhouse, and approximately 178,960 square feet of commercial space. Alternative B would provide 171 apartments, a 3,200 square foot clubhouse, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space.

Two comments were received from the California Department of Transportation (Caltrans) in response to the Notice of Preparation regarding the extent of the study intersections contained in the Transportation Impact Analysis Report. One comment was received from the Wolf Creek Community Alliance regarding the project's consistency with the City's goals and objectives regarding walking and bicycle trails as well as non-vehicular traffic plans such as the Wolf Creek Parkway and others implemented by the Bear Yuba Land Trust. One comment was received from a business owner on Spring Hill Drive, discussing the limitations and condition of Spring Hill Drive. The Notice of Preparation and comments received in response to it are included in Appendix A.

A copy of the Transportation Impact Analysis Report, prepared by GHD is included in Appendix G. Note that the Transportation Impact Analysis Report switches Alternative A and Alternative B compared to this EIR – it treats the alternative that includes 171 apartments, 8,500 square feet of office space, and 104,350 square feet of commercial space as Alternative A and the alternative that includes 90 apartments and 178,960 square feet of commercial space as Alternative B. Consistent with the rest of this Draft EIR, in this chapter Alternative A is defined as the project that includes apartments and commercial space and Alternative B is defined as the project that includes apartments, office space, and commercial space.

8.1 ENVIRONMENTAL SETTING

Study Area

For traffic analysis purposes, a set of intersections and mainline and ramp segments were selected for inclusion in the study area. The study area was identified based on knowledge of local traffic patterns and represents those locations that could potentially be impacted by the proposed project. The following locations were identified as part of the study area:

- Study Intersections
    1. Nevada City/Olympia Drive and Brunswick Road
    2. State Route (SR) 49/20 Southbound (SB) Off-Ramp and Brunswick Road
    3. SR 20/49 Northbound (NB) Ramps and Brunswick Road
    4. Sutton Way and Brunswick Road
    5. Main Street and Dorsey Drive
    6. Catherine Lane and Dorsey Drive
    7. SR 20/49 SB On-Ramp/Joerschke Drive and Dorsey Drive
    8. SR 20/49 NB Ramps and Dorsey Drive
    9. Apartment Driveway and Dorsey Drive
    10. Sutton Way and Dorsey Drive
    11. Sutton Way and Idaho Maryland Road
    12. Brunswick Road and Idaho Maryland Road
    13. Spring Hill Drive and Idaho Maryland Road
    14. Centennial Drive and Idaho Maryland Road
    15. SR 20/49 SB Ramps/Idaho Maryland Road and Main Street
    16. SR 20/49 NB Ramps and Idaho Maryland Road
    17. SR 20/49 SB Off-Ramp/Tinloy Street and Bennett Street
    18. SR 20/49NB On-Ramp/Hansen Way and Bennett Street
- Mainline and Ramp Segments
    1. SR 20/49 NB/ Eastbound (EB) south of Bennett Street - Mainline
    2. Bennett Street NB/EB On-Ramp – Weave
    3. SR 20/49 NB/EB Off-Ramp – Weave

4. Idaho Maryland Road NB/EB Off-Ramp – Weave
5. Idaho Maryland Road NB/EB On-Ramp – Weave
6. SR 20/49 NB/EB between Idaho Maryland Road and Dorsey Drive – Mainline
7. Dorsey Drive NB/EB Off-Ramp – Weave
8. Dorsey Drive NB/EB On-Ramp – Weave
9. SR 20/49 NB/EB between Dorsey Drive and Brunswick Road – Mainline
10. Brunswick Road NB/EB Off-Ramp – Weave
11. Brunswick Road NB/EB On-Ramp – Merge
12. SR 20/49 NB/EB north of Brunswick Road
13. Brunswick SB/Westbound (WB) Off-Ramp – Diverge
14. Brunswick SB/WB On-Ramp – Weave
15. SR 20/49 SB/WB north of Brunswick Road
16. Dorsey Drive SB/WB Off-Ramp – Weave
17. Dorsey Drive SB/WB On-Ramp – Weave
18. SR 20/49 SB/WB between Dorsey Drive and Idaho Maryland Road/Main Street – Mainline
19. Idaho Maryland Road/Main Street SB/WB Off-Ramp – Weave
20. Idaho Maryland Road/Main Street SB/WB On-Ramp – Weave
21. SR 20/49 SB/WB between Idaho Maryland Road/Main Street and Bennett Street – Mainline
22. Bennett Street SB/WB Off-Ramp – Weave
23. SR 20/49 SB/WB south of Bennett Street – Mainline

Pedestrian and Bicycle Facilities

The pedestrian system near the site consists primarily of the sidewalk system along City streets. The only formal trails in Grass Valley are the Empire Mine State Park and the Litton Trail (City of Grass Valley 1999). Dorsey Drive has continuous sidewalks on both sides of the road. Both ramps of SR49/20 have marked crosswalks; the next closest crosswalks are at East Main Street and Sutton Way. Spring Hill Drive maintains sidewalks on both sides on the street from Idaho Maryland Road to the project site.

Currently, there are on-street bike lanes around the City, including on Ridge Road from Hughes Road to Nevada Union High School and on East Main from Hughes Road to the Nevada City highway (City of Grass Valley 1999). The Nevada County Master Bicycle Plan, most recently updated in 2013, identifies bike lanes within the City of Grass Valley; the City adopted this plan in 2013. There are existing Class II bike lanes on Dorsey Drive and portions on Sutton Way but no facilities on Idaho Maryland Road or Springhill Drive.

Transit Services

Transit services in western Nevada County are provided through a joint powers agreement between Nevada County, the City of Grass Valley and Nevada City that was executed in October 2003 (LSC Transportation Consultants Inc. 2016). The Nevada County Transit Services Division (TSD) is responsible for the oversight of the western Nevada County public transit system, which includes two main programs: Gold Country Stage and Gold Country Lift. Gold Country Stage is a fixed-route operated directly by TSD using County employees and Gold Country Lift is a demand-response service providing paratransit required under the Americans with Disabilities Act (ADA) as well as additional services. The Gold Country Lift is operated by Paratransit Services Inc. who is under contract to the TSD.

Gold Country Stage operates six routes along the SR 49 corridor between Auburn and Nevada City to serve the Nevada City/Grass Valley area and unincorporated Western Nevada County. The main transfer points for transit in Grass Valley are the Tinloy Street Transit Center (serving all routes), the Fowler Center and City Hall (LSC Transportation Consultants Inc. 2016). The Tinloy Street Transit Center is located approximately 1.11 miles southwest of the project site. Generally, the six routes include the following:

- **Route 1 Nevada City/Grass Valley:** This route connects Nevada City and Grass Valley from the Nevada County Government Center to the Tinloy Street Transit Center (the first two runs at 6:15 a.m. and 7:15 a.m. start at the Gold Country Staging offices). Service on this route is offered on an hourly basis between 6:15 a.m. and 8:15 p.m. Monday through Friday and 7:15 a.m. to 5:30 p.m. on Saturday.
- **Route 2 Ridge Road:** This route begins and ends at the Tinloy Street Transit Center and operates a loop in Grass Valley via Ridge Road, Sierra College Drive, and Hughes Road. Service is offered between 7:15 a.m. and 6:56 p.m. Monday through Friday and from 7:15 a.m. to 2:55 p.m. on Saturday.
- **Route 3 Grass Valley Loop:** This route begins and ends at the Tinloy Street Transit Center and serves the lower Grass Valley area. Service is offered every hour between 6:45 a.m. and 7:45 p.m. Monday through Friday and between 8:00 a.m. and 4:45 p.m. on Saturday.

Additionally, this route travels to Loma Rica six times per day between 8:28 a.m. and 5:53 p.m. Monday through Friday.

- **Route 4 Brunswick Basin:** This route runs between the Tinloy Street Transit Center in Grass Valley and loops past Sierra College, Gold Country Center and the Fowler Center hourly between 6:15 a.m. and 8:00 p.m. Monday through Friday, and between 7:15 a.m. and 4:45 p.m. on Saturday.
- **Route 5 Auburn:** This route provides service from Grass Valley to Auburn (Auburn Station) via SR 49. This route serves Nevada City at 5:30 a.m. only and departs the Tinloy Street Transit Center in Grass Valley at 6:00 a.m. Six round-trip runs are offered each day between 5:30 a.m. and 7:30 p.m., including an express trip at 9:00 a.m. that offers limited stops along the SR 49 corridor.
- **Route 6 Penn Valley:** This route begins at the Tinloy Street Transit Center in Grass Valley and serves the Rough and Ready and Penn Valley communities to the west via the Rough and Ready Highway terminating at the Wildwood Center in Penn Valley. Service is offered between 6:30 a.m. and 8:00 p.m. Monday through Friday and four times per day between 7:00 a.m. and 5:15 p.m. on Saturday.

From July 2014 to June 2015 186,667 riders utilized the Gold Country Stage transit system with Route 1 being the most utilized at 61,852 riders or 33.1% of the total (LSC Transportation Consultants Inc. 2016). Peak ridership occurred during October 2014 with a total of 18,599 riders (LSC Transportation Consultants Inc. 2016).

Gold Country Lift provides ADA paratransit service for those who cannot use the Gold Country Stage transit system. Services are offered from 6:35 a.m.to 8:00 p.m. Monday through Friday and between 7:30 a.m. and 5:00 p.m. on Saturday. The paratransit program operates within a specific Paratransit Service Area, which has a main ADA corridor within 0.75 mile from the fixed routes and service is provided to an outlying defined paratransit service area in the western portion of the county as resources allow. From July 2014 to June 2015 39,625 riders utilized the Gold Country Lift transit system with June 2015 providing the highest number of month rides at 3,713 or 9.4% of the total (LSC Transportation Consultants Inc. 2016).

Level of Service

To assess the quality of existing traffic conditions, operating levels of service (LOS) were calculated at each study intersection. LOS is a qualitative measure of traffic operating conditions whereby a letter grade "A" through "F," corresponding to progressively worsening traffic operating conditions, is assigned to an intersection.

Table 8-1 presents the characteristics associated with each LOS grade. As shown in the table, LOS A, B, and C are considered satisfactory to most motorists, and LOS D is marginally acceptable. LOS E and F are associated with increasingly long delays and congestion and are unacceptable to most motorists.

Table 8-1
Level of Service Definitions

LOS	Signalized Intersection	Unsignalized Intersection	Roadway Conditions
A	Uncongested operations, all queues clear in a single-signal cycle. Delay < 10.0 sec	Little or no delay. Delay < 10 sec/veh	Completely free flow.
B	Uncongested operations, all queues clear in a single cycle. Delay > 10.0 sec and < 20.0 sec	Short traffic delays. Delay > 10 sec/veh and < 15 sec/veh	Free flow, presence of other vehicles noticeable.
C	Light congestion, occasional backups on critical approaches. Delay > 20.0 sec and < 35.0 sec	Average traffic delays. Delay > 15 sec/veh and < 25 sec/veh	Ability to maneuver and select operating speed affected.
D	Significant congestion of critical approaches but intersection functional. Cars required to wait through more than one cycle during short peaks. No long queues formed. Delay > 35.0 sec and < 55.0 sec	Long traffic delays. Delay > 25 sec/veh and < 35 sec/veh	Unstable flow, speeds and ability to maneuver restricted.
E	Severe congestion with some long standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements. Traffic queue may block nearby intersection(s) upstream of critical approach(es). Delay > 55.0 sec and < 80.0 sec	Very long traffic delays, failure, extreme congestion. Delay > 35 sec/veh and < 50 sec/veh	At or near capacity, flow quite unstable.
F	Total breakdown, stop-and-go operation. Delay > 80.0 sec	Intersection blocked by external causes. Delay > 50 sec/veh	Forced flow, breakdown.

Source: TRB 2000.
Notes: LOS = level of service; sec = seconds; sec/veh = seconds per vehicle.
Overall LOS for unsignalized intersections is weighted average of delays experienced by all motorists yielding the right of way, excluding through traffic.

Existing Levels of Service

Existing No Project weekday AM and PM peak hour intersection traffic operations were quantified utilizing the existing traffic volumes and lane geometrics and controls. Figure 8-1 and Table 8-2 identify the Existing No Project study intersection LOS conditions. The LOS for two-way stop controlled intersections is based on the worst minor street approach. The LOS for intersections with other control types is based on the average of all approaches. Where an unsignalized intersection operates at an unacceptable LOS, a traffic signal warrant analysis was completed using

the criteria established in the California Manual on Uniform Traffic Control Devices (MUTCD) based on the peak hour traffic volume (Warrant 3).

Table 8-2
Existing Level of Service

#	Intersection	Control Type	Target LOS	AM Peak Hour			PM Peak Hour		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
1	Brunswick Rd/Olympia Dr & Nevada City Hwy	Signal	D	35.6	D	-	39.1	D	-
2	Brunswick Rd & SR 20/49 SB/WB Off Ramp/Maltman Dr	Signal	D	33.1	C	-	36.3	D	-
3	Brunswick Rd & SR 20/49 NB/EB Ramps	Signal	D	14.4	B	-	12.5	B	-
4	Brunswick Rd & Sutton Way	Signal	D	29.4	C	-	40.6	D	-
5	Dorsey Dr & Main St	Signal	D	18.2	B	-	22.5	C	-
6	Dorsey Dr & Catherine Lane	TWSC	D	16.6	C	-	19.7	C	-
7	Dorsey Dr & SR 20/49 SB/EB On-Ramp/Joerschke Dr	Signal	D	8.3	A	-	11.5	B	-
8	Dorsey Dr & SR 20/49 NB/WB Ramps	Signal	D	16.5	B	-	15.0	B	-
9	Dorsey Dr & Apartment Driveway	TWSC	D	10.6	B	-	11.8	B	-
10	Dorsey Dr & Sutton Way	AWSC	D	10.0	A	-	13.1	B	-
11	Idaho Maryland Rd & Sutton Way	AWSC	D	9.3	A	-	11.1	B	-
12	Idaho Maryland Rd & Brunswick Rd	TWSC	D	16.4	C	-	122.1	F	NO
13	Idaho Maryland Rd & Spring Hill Dr	TWSC	D	11.8	B	-	15.2	C	-
14	Idaho Maryland Rd & Centennial Dr	TWSC	D	12.2	B	-	16.8	C	-
15	Idaho Maryland Rd/Main St & SR 20/49 SB/EB Ramps/Main St	RNDBT	D	7.8	A	-	9.9	A	-
16	Idaho Maryland Rd & SR 20/49 NB Ramps	AWSC	D	14.5	B	-	29.4	D	-
17	Bennett St & SR 20/49 SB Off-Ramp/Tinloy St	TWSC	D	14.5	B	-	17.8	C	-
18	Bennett St & SR 20/49 On-Ramp/Hansen Way	AWSC	D	14.9	B	-	14.0	B	-

Source: Appendix G

As shown in Table 8-2, one intersection currently operates at an unacceptable LOS during the PM peak hour: Intersection 12 – Idaho Maryland Road and Brunswick Road.

Existing Traffic Volumes

Due to the project's site close proximity to SR 20/49, Table 8-3 below outlines the Existing No Project ramp merge, diverge and freeway mainline operations.

Table 8-3
Existing SR 20/49 Traffic Volumes

#	Interchange Location	Segment Type	Target LOS	# of Lanes	AM Peak Hour			PM Peak Hour		
					Volume	*Density*	*LOS*	*Volume*	*Density*	*LOS*
1	North of Brunswick NB	Freeway	D	2	991	9.3	A	1,762	16.4	B
2	Brunswick On-Ramp NB	Merge	D	1	219	11.9	B	397	18.9	B
3	Brunswick Loop On-Ramp NB	Merge	D	1	87	9.7	A	138	16.4	B
4	Dorsey to Brunswick NB	Weave	D	1	-	10.1	B	-	12.3	B
5	Idaho Maryland to Dorsey NB	Weave	D	1	-	14.2	B	-	14.8	B
6	Bennett to Idaho Maryland NB	Weave	D	1	-	24.1	C	-	18.0	B
7	South of Bennett NB	Freeway	D	2	1,648	16.3	B	1,626	16.0	B
8	North of Brunswick SB	Freeway	D	2	1,625	16.0	B	1,242	12.3	B
9	Brunswick Off-Ramp SB	Diverge	D	1	385	14.1	B	521	4.8	B
10	Brunswick Loop On-Ramp SB	Merge	D	1	208	15.9	B	411	16.5	B
11	Brunswick to Dorsey SB	Weave	D	1	-	10.2	B	-	9.9	A
12	Dorsey to Idaho Maryland SB	Weave	D	1	-	11.8	B	-	14.4	B
13	Idaho Maryland to Bennett SB	Weave	D	1	-	14.4	B	-	18.4	B
14	South of Bennett SB	Freeway	D	2	1,379	13.6	B	1,811	17.9	B

Source: Appendix G

As presented in Table 8-3, all study ramps and freeway segments are currently found to operate at an acceptable LOS.

8.2 REGULATORY SETTING

Federal Regulations

There are no known federal standards that would affect the transportation and circulation aspects of the proposed project.

State Regulations

Transportation Concept Report

The Transportation Concept Report (TCR) is Caltrans' long-range (20-year) planning document for each State Highway route. The TCR identifies existing route conditions and future needs, including existing and forecasted travel data, a concept LOS standard, and the facility needed to maintain the concept LOS and address mobility needs over the next 20 years. Segment 16 of the

Transportation Concept Report for State Route 20 (Caltrans 2013) covers the portion of SR 20 from the junction of SR 49 South to the junction of SR 49 North, which runs parallel to the west edge of the project site. Segment 7 of the *Transportation Concept Report for State Route 49* (Caltrans 2000) covers the segment of SR 49 from the Placer and Nevada County line to the junction of SR 20, just south of the City.

Caltrans Traffic Study Guidelines

The *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002) includes the following generalized statement regarding target LOS goals for Caltrans facilities. Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, however, Caltrans acknowledges that this may not be always feasible and recommends that the lead agency consult with Caltrans to determine the appropriate target LOS. If an existing State highway facility is operating at less than the appropriate target LOS, the existing Measure of Efficiency should be maintained.

Local Regulations

Nevada County Bicycle Master Plan

The Nevada County Transportation Commission's (NCTC) *Nevada County Bicycle Master Plan* (NCTC 2013) aims to provide safe, well-maintained bikeways and support facilities in order to improve the bicycling environment in Nevada County and promote alternative modes of transportation. This plan includes goals, policies and objectives for guiding plan implementation; details of existing conditions in the County; a demand analysis; recommendations for bikeway improvements, including bicycle parking, and education, outreach and encouragement programs; and an implementation strategy including a project priority list, feasibility analysis and cost estimates (NCTC 2013).

Nevada County Pedestrian Improvement Plan

The NCTC's *Nevada County Pedestrian Improvement Plan* (NCTC 2011) aims to influence and improve pedestrian infrastructure, policies, programs and development standards to make walking more safe, comfortable and convenient for all pedestrians. The Plan includes five chapters: Existing conditions, Goals and Policies, Proposed Pedestrian Projects, Implementation and Design Guidance.

Grass Valley Parks and Recreation Master Plan

The *Grass Valley Parks and Recreation Master Plan* (City of Grass Valley 2001) contains a bikeway and trails category that provides goals for the provision of bike lanes, multi-use pedestrian

paths and trails in the City. The plan aims to add on-street bike lanes to all arterial and collector streets; establish multi-use bike/pedestrian paths to link neighborhoods to community destinations including park and recreation facilities, schools, town center, and the transit system; and establish trails to provide access to and within parks and open space and link neighborhoods with parks and recreation facilities.

City of Grass Valley 2020 General Plan

The Grass Valley General Plan Circulation (C) Element defines the transportation facilities in the City and includes goals (G), objectives (O), policies (P), and implementation measures (I) to improve the City's circulation system. The goals of the Circulation Element are to promote safe, efficient, and reliable movement of people and goods; facilitate some transition to alternate modes of transportation; and provide an adequate level of transportation services for all people traveling in and through the City (City of Grass Valley 1999). The following goals, objectives, policies and implementation measures are applicable to the proposed project:

1-CG: Provide a circulation system that utilizes a variety of transportation modes, including alternative means of transportation.

1-CO: Development of a viable pedestrian and bicycle transportation network (sidewalks, paths, lanes and trails) providing alternatives to motorized vehicular transportation.

2-CG: Ensure that street and roadway improvements complement and support land use goals, objectives, policies and plans.

5-CO: Convenient, safe and functional facilities for pedestrians, bicyclists and equestrians.

3-CG: Provide for the safe and efficient movement of people and goods in a manner that respects existing neighborhoods and the natural environment.

9-CO: Use of traffic calming techniques to protect neighborhoods and residents from adverse traffic impacts.

5-CG: Maintain adequate emergency access.

12-CO: Improvement and maintenance of adequate emergency access throughout the City.

2-CP: Plan for multi-purpose transportation/recreation bicycle and pedestrian facilities to optimize facility usage and enhance potential funding.

6-CP: Locate transit stops and park and ride facilities near freeway interchanges and in conjunction with higher density residential and mixed-use developments.

7-CI: Continue to update the Capital Improvement Program to implement policy which strives to maintain LOS "D" at all locations during the weekday p.m. peak hour. Define "normally accepted maximum"

improvements that are consistent with the character and terrain of Grass Valley. If forecasted traffic volumes cannot maintain LOS "D", the City Council may consider additional "extraordinary" improvements. The City Council may determine, on a case by case basis, that "extraordinary" improvements are not feasible or desirable and may relax the LOS "D" standard for a particular intersection or roadway segment. In considering exceptions to the LOS "D" standard, the City shall consider the following factors:

- The number of hours per day that the intersection or roadway segment would operate at conditions worse than LOS "D".
- The ability of improvement to reduce peak hour delay and improve traffic operations.
- The impact on accessibility to surrounding projects.
- The right-of-way needs and the physical impact on surrounding properties.
- The visual aesthetics of the required improvements and its impact on community identity and character.
- Environmental impacts including air quality and noise impacts.
- Construction and right-of-way acquisition costs.
- Impacts on pedestrian and bicycle accessibility and safety.
- The impacts of the required construction phasing and traffic maintenance.

In no case should the City plan for worse than LOS "E" at any intersection or roadway segment during the afternoon peak hour.

8.3 IMPACTS

Methods of Analysis

The following analysis of impacts to transportation is based on the Transportation Impact Analysis Report provided in Appendix G.

Trip Generation

To determine the number of vehicle trips that may result from development of commercial space under either Alternative A or Alternative B, peak hour traffic counts were conducted at three local shopping centers that have uses similar to those anticipated under the proposed project.

The average trip generation observed at the three existing shopping centers is higher than the trip generation rates published in the Institute of Transportation Engineers (ITE) publication Trip Generation, 9th Edition. The average trip generation rate observed at the existing shopping centers has been applied to the commercial portions of the proposed project. The industry-standard ITE trip generation rates have been applied to the residential uses under both Alternative A and Alternative B and to the office uses proposed under Alternative B. Table 8-4 provides the trip generation estimated for Alternative A and Table 8-5 provides the trip generation estimated for Alternative B.

Table 8-4
Alternative A Trip Generation

Land Use Category (ITE Category)	Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
		Total	*In %*	*Out %*	*Total*	*In %*	*Out %*
Apartment (220)	DU	0.51	20	80	0.62	65	35
Shopping Center (820)	ksf	2.80	62	38	6.63	48	52
		AM Peak Hour Trips			PM Peak Hour Trips		
Project Name	Quantity	*Total*	*In*	*Out*	*Total*	*In*	*Out*
Multifamily Residential	90	46	9	37	56	36	20
To Shopping Center		-1	0	-1	-21	-11	-10
Market Place	181.9	510	316	194	1,207	579	627
To Residential		-1	-1	0	-21	-10	-11
Project Trips		554	324	230	1,220	594	626
Shopping Center Pass-by (15% for AM, 30% for PM reduction)		-76	-47	-29	-356	-171	-185
Net New Project Trips		478	277	200	865	424	441

Notes: ITE = Institute of Transportation Engineers; DU = dwelling unit; ksf = thousand square feet.
Source: Appendix G

As shown in Table 8-4 Alternative A is projected to generate 478 trips and 865 trips in the AM and PM peak hours, respectively. Table 8-5 shows that Alternative B is projected to generate 358 AM peak hour trips and 527 PM peak hour trips.

Table 8-5
Alternative B Trip Generation

Land Use Category (ITE Category)	Unit	AM Peak Hour Trip Rate/Unit			PM Peak Hour Trip Rate/Unit		
		Total	*In %*	*Out %*	*Total*	*In %*	*Out %*
Apartment (220)	DU	0.46	23	77	0.56	63	37
Shopping Center (820)	ksf	2.80	62	38	6.63	48	52
Office (710)	ksf	4.06	86	14	1.29	16	84

Table 8-5
Alternative B Trip Generation

Project Name	Quantity	AM Peak Hour Trips			PM Peak Hour Trips		
		Total	*In*	*Out*	*Total*	*In*	*Out*
Multifamily Residential	171	79	18	61	95	60	35
To Shopping Center		0	0	0	-36	-18	-18
To Office		0	0	0	0	0	0
Market Place	104.4	293	181	111	692	332	360
To Residential		0	0	0	-36	-18	-18
To Office		-2	-1	-1	-1	-1	0
General Office	8.5	34	30	5	11	2	9
To Shopping Center		-2	-1	-1	-1	0	-1
To Residential		0	0	0	0	0	0
Project Trips		402	227	175	724	357	367
Shopping Center Pass-by (15% for AM, 30% for PM reduction)		-44	-27	-17	-197	-94	-103
Net New Project Trips		358	200	158	527	263	264

Notes: Institute of Transportation Engineers; DU = dwelling unit; ksf = thousand square feet.
Source: Appendix G

Significance Criteria

Potential significant impacts associated with traffic have been evaluated using the following criteria, as identified in Appendix G of the CEQA Guidelines:

The analysis in the following text evaluates the potential for the project to result in significant transportation and circulation impacts related to the following criteria. Would the project:

- Result in an increase in traffic that is substantial in relation to the existing and/or planned future year traffic load and capacity of the roadway system?
- Exceed a level of service standard established by the local General Plan for roads affected by project traffic?
- Increase impacts to vehicle safety due to roadway design features or incompatible uses?
- Result in inadequate emergency access or access to nearby uses?
- Create hazards or barriers for pedestrians or bicyclists?
- Conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?

- Cause a change in air traffic patterns, including either an increase in traffic levels or a change in location resulting in substantial safety risks?
- Result in increased vehicle circulation or congestion due to a lack of sufficient parking capacity to support the proposed land uses?

Impact Analysis

Impact 8-1: Would the project result in an increase in traffic that is substantial in relation to the existing traffic volumes and capacity on SR 20/49?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

Alternative A proposes approximately 180,000 square feet of commercial space and 90 residential units. Table 8-6 identifies the existing plus Alternative A peak hour traffic volumes on SR 20/49. The target LOS for all facilities included in Table 8-6 is LOS D.

Table 8-6
Existing Plus Alternative A SR 20/49 Traffic Volumes

#	Interchange Location	Facility	Existing						Existing Plus Alternative A					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Volume	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*
1	North of Brunswick NB	Freeway	991	9.3	A	1,762	16.4	B	991	9.3	A	1,762	16.4	B
2	Brunswick On-Ramp NB	Merge	219	11.9	B	397	18.9	B	219	11.9	B	397	18.9	B
3	Brunswick Loop On-Ramp NB	Merge	87	9.7	A	138	15.1	B	87	9.7	A	138	15.1	B
4	Dorsey to Brunswick NB	Weave	-	10.1	B	-	12.3	B	-	10.3	B	-	14.8	B
5	Idaho Maryland to Dorsey NB	Weave	-	14.2	B	-	14.8	B	-	14.9	B	-	15.4	B
6	Bennett to Idaho Maryland NB	Weave	-	24.1	C	-	18.0	B	-	18.9	B	-	18.2	B
7	South of Bennett NB	Freeway	1,648	16.3	B	1,626	16.0	B	1,699	16.8	B	1,687	16.6	B
8	North of Brunswick SB	Freeway	1,625	16.0	B	1,242	12.3	B	1,625	16.0	B	1,242	12.3	B
9	Brunswick Off-Ramp SB	Diverge	385	14.1	B	521	4.8	A	385	14.1	B	521	10.2	B
10	Brunswick Loop On-Ramp SB	Merge	208	15.9	B	411	16.5	B	224	16.0	B	432	12.8	B
11	Brunswick to Dorsey SB	Weave	-	10.2	B	-	9.9	A	-	11.0	B	-	10.1	B
12	Dorsey to Idaho Maryland SB	Weave	-	11.8	B	-	14.4	B	-	14.9	B	-	19.0	B
13	Idaho Maryland to Bennett SB	Weave	-	14.4	B	-	18.4	B	-	14.9	B	-	19.0	B
14	South of Bennett SB	Freeway	1,379	13.6	B	1,811	17.9	B	1,447	14.3	B	1,878	18.5	C

Source: Appendix G

As shown in Table 8-6, the freeway segments and ramps would continue to operate at an acceptable LOS under existing plus Alternative A conditions. Because the project-generated traffic under Alternative A would not cause any of the freeway segments or ramps to operate at an unacceptable LOS, the impact of Alternative A under existing plus project conditions would be **less than significant**.

Alternative B

Alternative B proposes approximately 104,350 square feet of commercial space, 8,500 square feet of office space, and 171 residential units. Table 8-7 identifies the peak hour average delay and LOS on SR 20/49 that would result from the addition of project-generated traffic under existing plus Alternative B conditions.

Table 8-7
Existing Plus Alternative B SR 20/49 Traffic Volumes

#	Interchange Location	Facility	Existing						Existing Plus Alternative B					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Volume	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*
1	North of Brunswick NB	Freeway	991	9.3	A	1,762	16.4	B	991	9.3	A	1,762	16.4	B
2	Brunswick On-Ramp NB	Merge	219	11.9	B	397	18.9	B	219	11.9	B	397	18.9	B
3	Brunswick Loop On-Ramp NB	Merge	87	9.7	A	138	15.1	B	87	9.7	A	138	15.1	B
4	Dorsey to Brunswick NB	Weave	-	10.1	B	-	12.3	B	-	10.4	B	-	15.2	B
5	Idaho Maryland to Dorsey NB	Weave	-	14.2	B	-	14.8	B	-	15.3	B	-	15.9	B
6	Bennett to Idaho Maryland NB	Weave	-	24.1	C	-	18.0	B	-	19.4	B	-	18.7	B
7	South of Bennett NB	Freeway	1,648	16.3	B	1,626	16.0	B	1,723	17.0	B	1,701	16.8	B
8	North of Brunswick SB	Freeway	1,625	16.0	B	1,242	12.3	B	1,625	16.0	B	1,242	12.3	B
9	Brunswick Off-Ramp SB	Diverge	385	14.1	B	521	4.8	A	385	14.1	B	521	10.2	B
10	Brunswick Loop On-Ramp SB	Merge	208	15.9	B	411	16.5	B	230	16.1	B	445	12.9	B
11	Brunswick to Dorsey SB	Weave	-	10.2	B	-	9.9	A	-	11.0	B	-	10.2	B
12	Dorsey to Idaho Maryland SB	Weave	-	11.8	B	-	14.4	B	-	12.4	B	-	16.2	B
13	Idaho Maryland to Bennett SB	Weave	-	14.4	B	-	18.4	B	-	14.9	B	-	20.0	C
14	South of Bennett SB	Freeway	1,379	13.6	B	1,811	17.9	B	1,411	13.9	B	1,925	19.0	C

Source: Appendix G

As shown in Table 8-7, the study intersections would continue to operate at an acceptable LOS under existing plus Alternative B conditions. Therefore, the impact of the Alternative B would be **less than significant**.

Impact 8-2: Would the project result in an increase in traffic that is substantial in relation to the existing traffic volumes and capacity on City of Grass Valley roadways and intersections?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially Significant	Potentially Significant
Mitigation measures:	8a and 8b	8a
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

Development of Alternative A would generate traffic associated with residents, employees, and customers accessing the project site. This would affect intersection operations. Table 8-8 presents the Transportation Impact Analysis Report forecasts for the volume-to-capacity ratio and LOS on study area intersections under existing plus Alternative A conditions. The LOS for two-way stop controlled intersections is based on the worst minor street approach. The LOS for intersections with other control types is based on the average of all approaches. The traffic signal warrant analysis is based on the peak hour signal warrant from the California Manual on Uniform Traffic Control Devices (MUTCD Warrant 3).

Table 8-8
Existing Plus Alternative A Intersection Level of Service

#	Intersection	Control Type	Target LOS	Existing						Existing Plus Alternative A					
				AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
1	Brunswick Rd/Olympia Dr & Nevada City Hwy	Signal	D	35.6	D	-	39.1	D	-	36.2	D	-	39.2	D	-
2	Brunswick Rd & SR 20/49 SB/WB Off Ramp/Maltman Dr	Signal	D	33.1	C	-	36.3	D	-	33.2	C	-	37.7	D	-
3	Brunswick Rd & SR 20/49 NB/EB Ramps	Signal	D	14.4	B	-	12.5	B	-	14.7	B	-	13.5	B	-
4	Brunswick Rd & Sutton Way	Signal	D	29.4	C	-	40.6	D	-	29.8	C	-	40.8	D	-
5	Dorsey Dr & Main St	Signal	D	18.2	B	-	22.5	C	-	18.7	B	-	27.0	C	-
6	Dorsey Dr & Catherine Lane	TWSC	D	16.6	C	-	19.7	C	-	19.5	B	-	22.9	C	-
7	Dorsey Dr & SR 20/49 SB/EB On-Ramp/ Joerschke Dr	Signal	D	8.3	A	-	11.5	B	-	16.1	B	-	27.7	C	-
8	Dorsey Dr & SR 20/49 NB/WB Ramps	Signal	D	16.5	B	-	15.0	B	-	32.3	C	-	28.1	C	-
9	Dorsey Dr & Apartment Driveway	TWSC	D	10.6	B	-	11.8	B	-	13.4	B	-	18.1	B	-
10	Dorsey Dr & Sutton Way	AWSC	D	10.0	A	-	13.1	B	-	10.2	B	-	14.0	B	-
11	Idaho Maryland Rd & Sutton Way	AWSC	D	9.3	A	-	11.1	B	-	9.4	A	-	11.7	B	-
12	Idaho Maryland Rd & Brunswick Rd	TWSC	D	16.4	C	-	122.1	F	No	17.2	C	-	184.1	F	Yes
13	Idaho Maryland Rd & Spring Hill Dr	TWSC	D	11.8	B	-	15.2	C	-	13.0	B	-	27.9	D	-
14	Idaho Maryland Rd & Centennial Dr	TWSC	D	12.2	B	-	16.8	C	-	12.9	B	-	17.7	C	-
15	Idaho Maryland Rd/Main St & SR 20/49 SB/EB Ramps/Main St	RNDBT	D	7.8	A	-	9.9	A	-	8.7	A	-	11.9	B	-
16	Idaho Maryland Rd & SR 20/49 NB Ramps	AWSC	D	14.5	B	-	29.4	D	-	16.0	B	-	38.9	E	Yes
17	Bennett St & SR 20/49 SB Off-Ramp/Tinloy St	TWSC	D	14.5	B	-	17.8	C	-	17.0	C	-	23.8	C	-
18	Bennett St & SR 20/49 On-Ramp/Hansen Way	AWSC	D	14.9	B	-	14.0	B	-	15.4	C	-	14.6	B	-

Notes: AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
Source: Appendix G

As shown in Table 8-8, all intersections would continue to operate at an acceptable LOS D or better, with the exception of Idaho Maryland Road and Brunswick Road in the PM peak hour and Idaho Maryland Road and SR 20/49 Northbound Ramps in the PM peak hour. At the intersection of Idaho Maryland Road and Brunswick Road, the intersection is projected to operate at LOS F without the project, but the project would increase delay at this location by 62 seconds. At this location, traffic on the eastbound approach is prohibited from traveling straight through the intersection to continue along Idaho Maryland Road and from making a left turn onto Brunswick Road, as shown on Figure 8-1. Signage prohibiting left-turns is posted and a concrete barrier is present to discourage these turning movements. However, many drivers continue to make illegal movements through this intersection, which is resulting in increased delays. To more effectively prevent these illegal movements, the City plans to replace the existing concrete "porkchop" barrier with a larger barrier. Mitigation Measure 8a requires the project applicant to pay a fair share contribution towards this improvement.

The Transportation Impact Analysis Report identified two options that would reduce the impact to the Idaho Maryland Road and SR 20/49 Northbound Ramps intersection to an acceptable LOS. Mitigation Measure 8b requires the project to construct either a traffic signal or a roundabout; the Transportation Impact Analysis Report notes that due to the proximity of the intersection to adjacent intersections, signal coordination would be required.

In addition to considering traffic flow through the intersections identified in Table 8-8, the Transportation Impact Analysis Report evaluates whether the project-generated traffic could result in vehicle queues that exceed available storage at the Dorsey Drive/SR 20/49 ramps. The analysis found that in the AM peak hour, queues in the northbound right-turn lane at the Dorsey Drive/SR 20/49 NB Ramp intersection would exceed available storage by 11 feet (less than one vehicle-length) and in the PM peak hour, queues in the eastbound right-turn lane at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection would exceed available storage by 80 feet (less than four vehicles). The anticipated spillback would not result in adverse effects on adjacent intersection operations and there is adequate sight distance for vehicles to react to the expected queues. Thus the project-generated traffic under existing plus Alternative A conditions would not result in adverse effects on intersection operation and safety.

With implementation of Mitigation Measures 8a and 8b, all study area intersections would operate at acceptable LOS and Alternative A would have a **less-than-significant** impact.

Alternative B

Alternative B proposes approximately 104,350 square feet of commercial space, 8,500 square feet of office space, and 171 residential units. The development of Alternative B would bring employees, customers and residents to the project site, which would affect intersection operations.

Table 8-9 presents the Transportation Impact Analysis Report forecasts for the study area intersections under existing plus Alternative B conditions, along with the roadway classification and resulting volume-to-capacity ratio and LOS. The peak hour conditions at each intersection under existing plus Alternative B conditions are shown in Figure 8-2. The LOS for two-way stop controlled intersections is based on the worst minor street approach. The LOS for intersections with other control types is based on the average of all approaches. The traffic signal warrant analysis is based on the peak hour signal warrant from the California Manual on Uniform Traffic Control Devices (MUTCD Warrant 3).

Table 8-9
Existing Plus Alternative B Intersection Level of Service

#	Intersection	Control Type	Target LOS	Existing						Existing Plus Alternative A					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
1	Brunswick Rd/Olympia Dr & Nevada City Hwy	Signal	D	35.6	D	-	39.1	D	-	36.2	D	-	39.6	D	-
2	Brunswick Rd & SR 20/49 SB/WB Off Ramp/Maltman Dr	Signal	D	33.1	C	-	3.6	D	-	33.3	C	-	36.8	D	-
3	Brunswick Rd & SR 20/49 NB/EB Ramps	Signal	D	14.1	B	-	12.5	B	-	14.7	B	-	13.1	B	-
4	Brunswick Rd & Sutton Way	Signal	D	29.4	C	-	40.6	D	-	29.7	C	-	40.8	D	-
5	Dorsey Dr & Main St	Signal	D	18.2	B	-	22.5	C	-	18.4	B	-	23.7	C	-
6	Dorsey Dr & Catherine Lane	TWSC	D	16.6	C	-	19.7	C	-	19.1	C	-	21.3	C	-
7	Dorsey Dr & SR 20/49 SB/EB On-Ramp/ Joerschke Dr	Signal	D	8.3	A	-	11.5	B	-	14.9	B	-	21.2	C	-
8	Dorsey Dr & SR 20/49 NB/WB Ramps	Signal	D	16.5	B	-	15.0	B	-	30.8	C	-	25.4	C	-
9	Dorsey Dr & Apartment Driveway	TWSC	D	10.6	B	-	11.8	B	-	11.5	B	-	15.8	B	-
10	Dorsey Dr & Sutton Way	AWSC	D	10.0	A	-	13.1	B	-	10.2	B	-	13.6	B	-
11	Idaho Maryland Rd & Sutton Way	AWSC	D	9.3	A	-	11.1	B	-	9.4	A	-	11.4	B	-
12	Idaho Maryland Rd & Brunswick Rd	TWSC	D	16.4	C	-	122.1	F	NO	16.9	C	-	157.6	F	Yes
13	Idaho Maryland Rd & Spring Hill Dr	TWSC	D	11.8	B	-	15.2	C	-	13.0	B	-	19.7	C	-
14	Idaho Maryland Rd & Centennial Dr	TWSC	D	12.2	B	-	16.8	C	-	12.4	B	-	17.4	C	-
15	Idaho Maryland Rd/Main St & SR 20/49 SB/EB Ramps/Main St	RNDBT	D	7.8	A	-	9.9	A	-	7.9	A	-	10.1	B	-
16	Idaho Maryland Rd & SR 20/49 NB Ramps	AWSC	D	14.5	B	-	29.4	D	-	15.9	C	-	35.0	D	-

Table 8-9
Existing Plus Alternative B Intersection Level of Service

#	Intersection	Control Type	Target LOS	Existing						Existing Plus Alternative A					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
17	Bennett St & SR 20/49 SB Off-Ramp/Tinloy St	TWSC	D	14.5	B	-	17.8	C	-	14.6	B	-	18.2	C	-
18	Bennett St & SR 20/49 On-Ramp/Hansen Way	AWSC	D	14.9	B	-	14.0	B	-	15.3	C	-	14.4	B	-

Notes: AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
Source: Appendix G

As shown in Table 8-9, all intersections would continue to operate at an acceptable LOS D or better, with the exception of Idaho Maryland Road and Brunswick Road in the PM peak hour. As discussed in the previous Alternative A section, the delays at this intersection are caused by drivers making illegal moves through the intersection. The City plans to modify the intersection by replacing the existing concrete barrier with a larger one to more effectively prohibit eastbound drivers from continuing straight through the intersection or making a left turn. Mitigation Measure 8a requires the project applicant to contribute a fair-share payment towards the construction of the improved barrier at the Idaho Maryland Road and Brunswick Road Intersection.

In addition to considering traffic flow through the intersections identified in Table 8-9, the Transportation Impact Analysis Report evaluates whether the project-generated traffic could result in vehicle queues that exceed available storage at the Dorsey Drive/SR 20/49 ramps. The analysis found that in the PM peak hour, queues on the eastbound approach to the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive would exceed the available storage by 35 feet, which is less than two vehicles. Further, the queues would dissipate every cycle. Therefore, this amount of spillback would not adversely affect intersection operations. The analysis also found that in the PM peak hour, queues in the eastbound left-turn lane and eastbound through lane at the Dorsey Drive/SR 20/49 NB Ramp intersection would exceed available storage by 22 feet (one vehicle) in the left-turn lane and by 51 feet (two vehicles) in the through lane. Field observations and simulation analysis projects that the queues would dissipate every cycle and there is adequate sight distance for vehicles to react to the expected queues. Thus the project-generated traffic under existing plus Alternative B conditions would not result in adverse effects on intersection operation and safety.

Implementation of Mitigation Measure 8a would ensure that the Idaho Maryland Road and Brunswick Road intersection operates at an acceptable LOS and would reduce the impact of Alternative B to a **less-than-significant** level.

Impact 8-3: Would the project increase impacts to vehicle safety due to roadway design features or incompatible uses

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Alternative A would develop commercial and residential land uses while Alternative B would develop commercial, office, and residential land uses. The vehicle traffic associated with operation of the project under either alternative would include passenger vehicles and delivery trucks. Neither alternative would involve the use of vehicles that are not currently present on the local

roadway network. The proposed streets within the project site would meet all applicable City standards to ensure safe driving conditions are provided.

The project would extend Spring Hill Drive through the project site, creating a connection between Dorsey Drive and Idaho Maryland Road. A portion of the project-generated traffic and as well as some pass-through traffic would be expected to travel through the Spring Hill Drive/Idaho Maryland Road intersection. As shown in Table 8-7 and Table 8-8, the LOS at this intersection is expected to remain at acceptable levels under existing plus project conditions for either Alternative A or Alternative B. There are no substantial vertical or horizontal curves on Idaho Maryland Road that obstruct line of sight for drivers on either road. Therefore, the project would result in **less than significant** impacts related to roadway and vehicle safety.

Impact 8-4: Would the project result in inadequate emergency access or access to nearby uses?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Both Alternative A and Alternative B would construct an internal circulation system throughout the project site; this internal circulation would include two emergency evacuation routes from the project site: one onto Idaho-Maryland Road via Spring Hill Drive and the other onto Dorsey Drive. Internal circulation and emergency evacuation roads would comply with all federal, state, and local regulations pertaining to emergency vehicle access. The project would have a **less-than-significant** impact on emergency access.

Impact 8-5: Would the project create hazards or barriers for pedestrians or bicyclists?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

With the development of either alternative, pedestrian traffic is expected to increase slightly due to the presence of commercial and retail land uses near adjacent residential areas. Both alternatives would maintain the existing pedestrian facilities along the project frontage. On-site pedestrian facilities included in both alternatives include continuous sidewalks, crosswalks, accessible paths of travel, extension of existing Dorsey Drive sidewalks, and extension of existing Spring Hill Drive

sidewalks. Additionally, both alternatives would implement the City's development standards to satisfy on-site bicyclist needs. The on-site facilities would connect to existing off-site Class II bike facilities on Dorsey Drive. Also, all off-site roadway improvements on Spring Hill Drive and Dorsey Drive would be designed to include bicycle traffic and be consistent with adopted transportation plans of the City of Grass Valley and Nevada County. Therefore, both Alternative A and Alternative B would have a **less-than-significant** impact on pedestrian and bicycle safety.

Impact 8-6: Would the project conflict with adopted policies, plans, or programs supporting alternative transportation or otherwise decrease the performance or safety of such facilities?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

Both alternatives would generate a moderate increase in transit ridership demand; this increase is expected to be satisfied by the existing transit services. Riders would utilize existing Brunswick Basin Route transit stops on either side of Dorsey Drive. Both Alternative A and Alternative B would have a **less-than-significant** impact on alternative transportation.

Impact 8-7: Would the project cause a change in air traffic patterns, including either an increase in traffic levels or a change in location resulting in substantial safety?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The only public airport near the project site is the Nevada County Airport, which is located 1.45 miles from project site. The project site is within the 1.5-mile influence of the NCALUC. The site falls under Zone D, Traffic Pattern Zone and Urban Overlay Zone, which may require NCALUC review for proposals for new development (including buildings, antennas, and other structures) having a height of more than 100 feet within Compatibility Zone D (Mead & Hunt 2011). Land use development that may create attractions for birds is also prohibited.

The maximum proposed height of buildings under Alternative A and Alternative B is 40 feet; neither alternative would include any features that would attract birds, such as ponds, pools, or wetlands. As discussed in Chapter 15, Hazards and Hazardous Materials, the land uses under both

Alternative A and B would be consistent with the allowable uses, building heights, and population intensities for Compatibility Zone D. The completion of the Master Plan Update would not affect air traffic levels or patterns; therefore both Alternative A and Alternative B would have a less than significant impact.

Impact 8-8: Would the project result in increased vehicle circulation or congestion due to a lack of sufficient parking capacity to support the proposed land uses?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A

Alternative A would provide on-site parking for all of the proposed land uses consistent with the City's parking standards. City standards for the commercial component require 716 stalls, 18 of which would be accessible parking stalls. Alternative A proposes 746 stalls, of which 632 are standard, 81 are compact, 26 of accessible, 8 are motorcycle, and 74 are reserved for low emitting vehicles. Alternative A provides 180 parking stalls for the residential component, of which 1 is compact, 4 are motorcycle, and 7 are accessible parking. The project would provide sufficient parking for the anticipated uses and would have **no impact** related to insufficient parking capacity.

Alternative B

Alternative B would provide on-site parking for all of the proposed land uses consistent with the City's parking standards. City standards for the commercial component require 417 stalls, 12 of which would be accessible parking stalls. Alternative A proposes 624 stalls, of which 447 are standard, 77 are compact, 14 of accessible, 5 are motorcycle, 46 are low emitting and 35 are future electric vehicle charging. Alternative B provides 407 parking stalls for the residential component, of which 7 are motorcycle, 10 are accessible parking and 12 are future electric vehicle charging. Additionally, Alternative B provides 29 stalls (one of which is accessible) for the office component. The project would provide sufficient parking for the anticipated uses and would have **no impact** related to insufficient parking capacity.

Impact 8-9: Would the project contribute to a cumulative increase in traffic that conflicts with adopted policies and plans related to intersection and roadway segment function, including consideration of LOS and ADT?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Significant	Significant
Mitigation measures:	Mitigation Measures 8a through 8g	Mitigation Measures 8a, 8b, 8e, and 8h
Significance after mitigation:	Significant and unavoidable	Less than significant

Alternative A

The peak hour conditions at each intersection under cumulative no project conditions are shown in Figure 8-3. Table 8-10 presents the Transportation Impact Analysis Report forecasts for the 18 study area intersections under Year 2035 conditions and Year 2035 plus Alternative A conditions, along with the roadway classification and resulting volume-to-capacity ratio and LOS. The LOS for two-way stop controlled intersections is based on the worst minor street approach. The LOS for intersections with other control types is based on the average of all approaches. The traffic signal warrant analysis is based on the peak hour signal warrant from the MUTCD Warrant 3.

Table 8-10
Year 2035 Plus Alternative A Intersection Level of Service

#	Intersection	Control Type	Target LOS	2035 No Project						2035 Plus Alternative A					
				AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
1	Brunswick Rd/Olympia Dr & Nevada City Hwy	Signal	D	36.1	D	-	39.5	D	-	36.9	D	-	39.1	D	-
2	Brunswick Rd & SR 20/49 SB/WB Off Ramp/Maltman Dr	Signal	D	34.2	C	-	36.8	D	-	35.2	D	-	38.7	D	-
3	Brunswick Rd & SR 20/49 NB/EB Ramps	Signal	D	15.4	B	-	13.1	B	-	15.9	B	-	14.0	B	-
4	Brunswick Rd & Sutton Way	Signal	D	31.4	C	-	45.4	D	-	31.5	C	-	46.0	D	-
5	Dorsey Dr & Main St	Signal	D	19.7	B	-	28.2	C	-	21.3	C	-	33.1	C	-
6	Dorsey Dr & Catherine Lane	TWSC	D	18.8	C	-	29.4	D	-	23.0	C	-	35.9	E	Yes
7	Dorsey Dr & SR 20/49 SB/EB On-Ramp/ Joerschke Dr	Signal	D	12.5	B	-	19.8	B	-	19.3	B	-	105.2	F	-
8	Dorsey Dr & SR 20/49 NB/WB Ramps	Signal	D	17.3	B	-	17.6	B	-	34.4	C	-	35.6	D	-
9	Dorsey Dr & Apartment Driveway	TWSC	D	13.1	B	-	23.2	C	-	13.4	B	-	23.0	C	-
10	Dorsey Dr & Sutton Way	AWSC	D	45.1	E	No	291.3	F	Yes	59.0	F	No	OVR	F	Yes
11	Idaho Maryland Rd & Sutton Way	AWSC	D	10.2	B	-	13.0	B	-	10.6	B	-	14.2	B	-
12	Idaho Maryland Rd & Brunswick Rd	TWSC	D	209.8	F	Yes	OVR	F	Yes	OVR	F	Yes	OVR	F	Yes
13	Idaho Maryland Rd & Spring Hill Dr	TWSC	D	13.5	B	-	18.4	C	-	15.3	C	-	39.0	E	Yes
14	Idaho Maryland Rd & Centennial Dr	TWSC	D	13.6	B	-	29.4	D	-	13.7	B	-	33.6	D	-
15	Idaho Maryland Rd/Main St & SR 20/49 SB/EB Ramps/Main St	RNDBT	D	9.1	A	-	13.6	B	-	12.2	B	-	17.8	B	-
16	Idaho Maryland Rd & SR 20/49 NB Ramps	AWSC	D	22.6	C	-	49.3	E	Yes	27.2	D	-	65.0	F	Yes
17	Bennett St & SR 20/49 SB Off-Ramp/Tinloy St	TWSC	D	15.1	C	-	26.2	D	-	17.9	C	-	45.6	E	Yes
18	Bennett St & SR 20/49 On-Ramp/Hansen Way	AWSC	D	23.6	C	-	18.1	C	-	25.1	D	-	19.6	C	-

Notes: AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
Source: Appendix G

As shown in Table 8-10, Alternative A would contribute to unacceptable LOS at several intersections. Alternative A would cause the following impacts and require implementation of the identified mitigation measures:

In the PM peak hour under the 2035 no project condition the Dorsey Drive/Catherine Lane intersection would operate at LOS D. With the addition of Alternative A, this would decrease to LOS E and the intersection would meet the peak hour volume signal warrant. Mitigation Measure 8c would require the project applicant to contribute a fair share payment towards the construction of a traffic signal at the Dorsey Drive/Catherine Lane intersection. Installation of a traffic signal would restore the intersection to LOS D conditions.

In the PM peak hour under the 2035 no project condition the Dorsey Drive/SR 20/49 SB/EB Ramp/Joerschke Drive intersection would operate at LOS B. With the addition of Alternative A, this would decrease to LOS F. Mitigation Measure 8d would require the project applicant to contribute a fair share payment towards modification of the signal timing to restore the intersection operations to LOS D or better.

In the 2035 no project condition the Dorsey Drive/Sutton Way intersection would operate at LOS E in the AM peak hour and LOS F in the PM peak hour. The addition of traffic generated by Alternative A would increase delay in the AM peak hour by 14 seconds and decrease the LOS to F, and would increase delay in the PM peak hour. The intersection would meet the peak hour signal warrant in the PM peak hour under both no project and plus project conditions. Mitigation Measure 8e would require the project applicant to contribute a fair share payment towards the construction of a traffic signal or conversion of the intersection to a roundabout to provide for improvement of the operations at this location to LOS D or better.

In the 2035 no project condition the Idaho Maryland Road/Brunswick Road intersection would operate at LOS F and would meet the peak hour signal warrant in both the AM and PM peak hours. The addition of traffic generated by Alternative A would increase delay in each peak hour by 10 seconds or more. As discussed previously, drivers making illegal moves through the intersection contribute to the delays at this location. The City plans to modify the intersection by replacing the existing concrete barrier with a larger one to more effectively prohibit eastbound drivers from continuing straight through the intersection or making a left turn. Mitigation Measure 8a requires the project applicant to contribute a fair-share payment towards the construction of the improved barrier at the Idaho Maryland Road and Brunswick Road Intersection. Implementation of Mitigation Measure 8a would ensure that the Idaho Maryland Road and Brunswick Road intersection operates at an acceptable LOS.

In the 2035 plus Alternative A condition, operations at the Idaho Maryland Road/Spring Hill Drive intersection would decrease to LOS E in the PM peak hour, compared to the LOS C operations in

the 2035 no project condition. Mitigation Measure 8f would require modifying the lane striping on the southbound approach to the intersection to create a right turn pocket. The existing road width of approximately 38 feet is sufficient to accommodate this turn pocket with no additional right-of-way or paving. Although the impact would occur in the year 2035 conditions, Mitigation Measure 8f requires the restriping to be completed prior to issuance of certificates of occupancy for any of the buildings constructed onsite. This would not adversely affect traffic operations in the existing plus project conditions.

The Idaho Maryland Road/SR 20/49 NB Ramps intersection would operate at LOS E in the PM peak hour under 2035 no project conditions. The addition of traffic generated by Alternative A would decrease operations at this location to LOS F and increase delay by 15.7 seconds. Mitigation Measure 8b requires the project applicant to contribute a fair-share amount towards either installation of a traffic signal or construction of a roundabout at this location. Either improvement would restore the intersection operations to an acceptable LOS.

The Bennett Street/SR 20/49 SB Off-Ramp/Tinloy Street intersection would operate at LOS D in the PM peak hour under 2035 no project condition and LOS F in the 2035 plus project condition. Further, the addition of traffic generated by Alternative A would cause the intersection to meet the peak hour signal warrant in the PM peak hour. Mitigation Measure 8g requires the project applicant to contribute a fair-share payment towards the construction of a traffic signal or roundabout at the Bennett Street/SR 20/49 SB Off-Ramp/Tinloy Street intersection. Either improvement would restore the intersection operations to an acceptable LOS.

In addition to considering traffic flow through the intersections identified in Table 8-10, the Transportation Impact Analysis Report evaluates whether the project-generated traffic could result in vehicle queues that exceed available storage at the Dorsey Drive/SR 20/49 ramps. The analysis found that the following conditions would occur:

The queue in the eastbound right-turn lane, southbound left/through lane, and southbound right-turn lane at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection would exceed available storage in the PM peak hour. The eastbound right-turn lane queue would exceed available storage by 101 feet (four vehicles), the southbound left/through lane queue would exceed available storage by 535 feet (21 vehicles), and the southbound right-turn lane queue would exceed available storage by 373 feet (15 vehicles). Improving these conditions would require reconstruction of the Dorsey Drive interchange to add additional lanes on the overcrossing and off-ramp approaches or a multi-lane roundabout interchange. These improvements would involve substantial physical construction and costs and were determined to be infeasible for the project to implement.

At the Dorsey Drive/SR 20/49 NB Ramps, the queue in the eastbound through lane would exceed available storage by 37 feet (less than two vehicles) in the AM peak hour and by 9 feet (less than

one vehicle) in the PM peak hour. The queue in the northbound right-turn lane would exceed available storage by 15 feet (less than one vehicle) in the PM peak hour. The spillback in these lanes would not adversely affect intersection operations and sufficient sight distance would be available to allow vehicles to react to these queues.

With implementation of Mitigation Measures 8a through 8g, intersection operations in the cumulative plus Alternative A conditions would remain at acceptable LOS however the vehicle queues at the Dorsey Drive interchange would result in adverse effects to traffic flow and safety. Thus Alternative A would result in a **significant and unavoidable** impact due to its cumulatively considerable contribution to cumulative impacts at this location.

SR 20/49 Traffic Volumes

Table 8-11 identifies the peak hour traffic volumes and operations on the SR 20/49 ramp merge, diverge, and freeway mainline segments under the year 2035 no project and 2035 plus Alternative A conditions.

Table 8-11
Cumulative Plus Alternative A SR 20/49 Conditions

#	Location	Facility	2035 No Project						2035 Plus Alternative A					
			AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
			Volume	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*
1	North of Brunswick NB	2-lane Freeway	1,083	10.1	A	1,924	18.0	B	1,083	10.1	A	1,924	18.0	B
2	Brunswick On-Ramp NB	1-lane Merge	260	12.7	B	510	20.3	C	260	12.7	B	510	20.3	C
3	Brunswick Loop On-Ramp NB	1-lane Merge	100	10.2	B	170	15.6	B	100	10.2	B	170	15.6	B
4	Dorsey to Brunswick NB	1-lane Weave	-	11.0	B	-	15.1	B	-	11.2	B	-	15.6	B
5	Idaho Maryland to Dorsey NB	1-lane Weave	-	16.9	B	-	17.0	B	-	17.6	B	-	17.4	B
6	Bennett to Idaho Maryland NB	1-lane Weave	-	21.8	C		20.1	C	-	22.4	C	-	20.4	C
7	South of Bennett NB	2-lane Freeway	1,868	18.5	C	1,754	17.3	B	1,922	19.0	C	1,772	17.5	B
8	North of Brunswick SB	2-lane Freeway	1,775	17.5	B	1,356	13.4	B	1,775	17.5	B	1,356	13.4	B
9	Brunswick Off-Ramp SB	1-lane Diverge	465	15.6	B	545	11.3	B	465	15.6	B	545	11.3	B
10	Brunswick Loop On-Ramp SB	1-lane Merge	245	16.8	B	430	13.7	B	259	17.0	B	449	13.8	B
11	Brunswick to Dorsey SB	1-lane Weave	-	11.1	B	-	10.9	B	-	11.1	B	-	10.9	B
12	Dorsey to Idaho Maryland SB	1-lane Weave	-	13.3	B	-	17.5	B	-	14.3	B	-	18.3	B
13	Idaho Maryland to Bennett SB	1-lane Weave	-	16.5	B	-	22.0	C	-	17.3	B	-	22.6	C
14	South of Bennett SB	2-lane Freeway	1,500	14.8	B	1,999	19.7	C	1,591	15.7	B	2,067	20.4	C

Source: Appendix G

As shown in Table 8-11, all segments of SR 20/49 would continue to operate at an acceptable LOS under Year 2035 plus Alternative A conditions. Therefore, the impact of Alternative A in the cumulative scenario would be **less than significant**.

Alternative B

Alternative B proposes development of approximately 104,350 square feet of commercial uses, 8,500 square feet of office space, and 171 multi-family apartments. Development of Alternative B and the associated increase in on-site employees, customers and residents would affect traffic segment operations.

Table 8-12 presents the Transportation Impact Analysis Report forecasts for intersection operations under year 2035 plus Alternative B conditions, along with the roadway classification and resulting volume-to-capacity ratio and LOS. The LOS for two-way stop controlled intersections is based on the worst minor street approach. The LOS for intersections with other control types is based on the average of all approaches. The traffic signal warrant analysis is based on the peak hour signal warrant from the MUTCD Warrant 3. Figure 8-4 shows the peak hour intersection conditions under this cumulative plus Alternative B scenario.

Table 8-12
Year 2035 Plus Alternative B Intersection Level of Service

#	Intersection	Control Type	Target LOS	2035 No Project						2035 Plus Alternative B					
				AM Peak Hour			*PM Peak Hour*			*AM Peak Hour*			*PM Peak Hour*		
				Delay	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*	*Delay*	*LOS*	*Warrant Met*
1	Brunswick Rd/Olympia Dr & Nevada City Hwy	Signal	D	36.1	D	-	39.5	D	-	36.9	D	-	39.9	D	-
2	Brunswick Rd & SR 20/49 SB/WB Off Ramp/Maltman Dr	Signal	D	34.2	C	-	36.8	D	-	35.2	D	-	38.7	D	-
3	Brunswick Rd & SR 20/49 NB/EB Ramps	Signal	D	15.4	B	-	13.1	B	-	15.8	B	-	13.7	B	-
4	Brunswick Rd & Sutton Way	Signal	D	31.4	C	-	45.4	D	-	31.5	C	-	46.0	D	-
5	Dorsey Dr & Main St	Signal	D	19.7	B	-	28.2	C	-	20.0	B	-	29.7	C	-
6	Dorsey Dr & Catherine Lane	TWSC	D	18.8	C	-	29.4	D	-	22.5	C	-	33.8	D	-
7	Dorsey Dr & SR 20/49 SB/EB On-Ramp/ Joerschke Dr	Signal	D	12.5	B	-	19.8	B	-	18.2	B	-	40.0	D	-
8	Dorsey Dr & SR 20/49 NB/WB Ramps	Signal	D	17.3	B	-	17.6	B	-	33.2	C	-	41.4	D	-
9	Dorsey Dr & Apartment Driveway	TWSC	D	13.1	B	-	23.2	C	-	12.6	B	-	18.4	B	-
10	Dorsey Dr & Sutton Way	AWSC	D	45.1	E	No	291.3	F	Yes	55.7	F	No	OVR	F	Yes
11	Idaho Maryland Rd & Sutton Way	AWSC	D	10.2	B	-	13.0	B	-	10.5	B	-	13.7	B	-
12	Idaho Maryland Rd & Brunswick Rd	TWSC	D	209.8	F	Yes	OVR	F	Yes	259.7	F	Yes	OVR	F	Yes
13	Idaho Maryland Rd & Spring Hill Dr	TWSC	D	13.5	B	-	18.4	C	-	15.7	C	-	24.3	C	-
14	Idaho Maryland Rd & Centennial Dr	TWSC	D	13.6	B	-	29.4	D	-	13.9	B	-	32.6	D	-
15	Idaho Maryland Rd/Main St & SR 20/49 SB/EB Ramps/Main St	RNDBT	D	9.1	A	-	13.6	B	-	9.2	A	-	14.1	B	-
16	Idaho Maryland Rd & SR 20/49 NB Ramps	AWSC	D	22.6	C	-	49.3	E	Yes	25.4	D	-	58.6	F	Yes
17	Bennett St & SR 20/49 SB Off-Ramp/Tinloy St	TWSC	D	15.1	C	-	26.2	D	-	15.3	C	-	27.5	D	-
18	Bennett St & SR 20/49 On-Ramp/Hansen Way	AWSC	D	23.6	C	-	18.1	C	-	24.7	C	-	19.1	C	-

Notes: AWSC = All Way Stop Control; TWSC = Two Way Stop Control; RNDBT = Roundabout
Source: Appendix G

As shown in Table 8-12 and discussed in the following paragraphs, Alternative B would contribute to unacceptable LOS at the Dorsey Drive/Sutton Way and Idaho Maryland Road/Brunswick Road intersections in the AM peak hour and the Dorsey Drive/Sutton Way, Idaho Maryland Road/Brunswick Road, and Idaho Maryland Road/SR 20/49 NB Ramps intersections in the PM peak hour.

In the 2035 no project condition the Dorsey Drive/Sutton Way intersection would operate at LOS E in the AM peak hour and LOS F in the PM peak hour. The addition of traffic generated by Alternative B would increase delay in the AM peak hour by 10.6 seconds and decrease the LOS to F but volumes in the AM peak hour would not satisfy the peak hour signal warrant. In the PM peak hour, the addition of traffic generated by Alternative B would increase delay. The intersection would meet the peak hour signal warrant in the PM peak hour under both no project and plus project conditions. Mitigation Measure 8e would require the project applicant to contribute a fair share payment towards the construction of a traffic signal or conversion of the intersection to a roundabout to provide for improvement of the operations at this location to LOS D or better.

In the 2035 no project condition the Idaho Maryland Road/Brunswick Road intersection would operate at LOS F and would meet the peak hour signal warrant in both the AM and PM peak hours. The addition of traffic generated by Alternative B would increase delay in each peak hour by 10 seconds or more. As discussed previously, drivers making illegal moves through the intersection contribute to the delays at this location. The City plans to modify the intersection by replacing the existing concrete barrier with a larger one to more effectively prohibit eastbound drivers from continuing straight through the intersection or making a left turn. Mitigation Measure 8a requires the project applicant to contribute a fair-share payment towards the construction of the improved barrier at the Idaho Maryland Road and Brunswick Road Intersection. Implementation of Mitigation Measure 8a would ensure that the Idaho Maryland Road and Brunswick Road intersection operates at an acceptable LOS.

The Idaho Maryland Road/SR 20/49 NB Ramps intersection would operate at LOS E in the PM peak hour under 2035 no project conditions. The addition of traffic generated by Alternative B would decrease operations at this location to LOS F and increase delay by 9.3 seconds. Mitigation Measure 8b requires the project applicant to contribute a fair-share amount towards either installation of a traffic signal or construction of a roundabout at this location. Either improvement would restore the intersection operations to an acceptable LOS.

In addition to considering traffic flow through the intersections identified in Table 8-12, the Transportation Impact Analysis Report evaluates whether the project-generated traffic could result in vehicle queues that exceed available storage at the Dorsey Drive/SR 20/49 ramps. The analysis found that the following conditions would occur:

The queues on each approach to the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive and the Dorsey Drive/SR 20/49 NB Ramps intersections would exceed available storage in the PM peak hour. The queues at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection would exceed available storage by between 111 feet and 1,143 feet. The queues at the Dorsey Drive/SR 20/49 NB Ramps intersection would exceed available storage by between 63 feet and 622 feet. Mitigation Measure 8h requires the project applicant to provide adequate funding to the City to modify the signal timing at these intersections to reduce vehicle queues. With implementation of Mitigation Measure 8h, the queues in the eastbound right-turn lane at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection would exceed available storage by 86 feet (less than four vehicles) and the queues in the westbound left-turn lane would exceed available storage by 111 feet (less than five vehicles). As the Dorsey Drive/SR 20/49 NB Ramps intersection, queues in the eastbound left-turn lane would exceed available storage by 41 feet (less than two vehicles) and queues in the eastbound through lane would exceed available storage by 17 feet (less than one vehicle). The spillback associated with these queues would not adversely affect traffic operations and sufficient sight distance would be available to allow vehicles to react to these queues.

With implementation of Mitigation Measures 8a, 8b, 8e, and 8h intersection operations in the cumulative plus Alternative B conditions would remain at acceptable LOS and vehicle queues would not adversely affect intersection operations or safety. Thus, the contribution of Alternative B to significant cumulative intersection operation impacts would be reduced to a **less-than-significant** level.

SR 20/49 Traffic Volumes

Table 8-13 identifies the peak hour traffic volumes and operations on the SR 20/49 ramp merge, diverge, and freeway mainline segments under the year 2035 no project and 2035 plus Alternative B conditions.

Table 8-13
Cumulative Plus Alternative B SR 20/49 Conditions

#	Location	Facility	2035 No Project						2035 Plus Alternative B					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Volume	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*	*Volume*	*Density*	*LOS*
1	North of Brunswick NB	2-lane Freeway	1,083	10.1	A	1,924	18.0	B	1,083	10.1	A	1,924	18.0	B
2	Brunswick On-Ramp NB	1-lane Merge	260	12.7	B	510	20.3	C	260	12.7	B	510	20.3	C
3	Brunswick Loop On-Ramp NB	1-lane Merge	100	10.2	B	170	15.6	B	100	10.2	B	170	15.6	B
4	Dorsey to Brunswick NB	1-lane Weave	-	11.0	B	-	15.1	B	-	11.1	B	-	16.0	B
5	Idaho Maryland to Dorsey NB	1-lane Weave	-	16.9	B	-	17.0	B	-	17.6	B	-	18.0	B
6	Bennett to Idaho Maryland NB	1-lane Weave	-	21.8	C		20.1	C	-	22.3	C	-	21.0	C
7	South of Bennett NB	2-lane Freeway	1,868	18.5	C	1,754	17.3	B	1,901	18.8	C	1,794	17.7	B
8	North of Brunswick SB	2-lane Freeway	1,775	17.5	B	1,356	13.4	B	1,775	17.5	B	1,356	13.4	B
9	Brunswick Off-Ramp SB	1-lane Diverge	465	15.6	B	545	11.3	B	465	15.6	B	545	11.3	B
10	Brunswick Loop On-Ramp SB	1-lane Merge	245	16.8	B	430	13.7	B	245	16.8	B	449	13.9	B
11	Brunswick to Dorsey SB	1-lane Weave	-	11.1	B	-	10.9	B	-	10.9	B	-	11.0	B
12	Dorsey to Idaho Maryland SB	1-lane Weave	-	13.3	B	-	17.5	B	-	13.7	B	-	19.4	B
13	Idaho Maryland to Bennett SB	1-lane Weave	-	16.5	B	-	22.0	C	-	16.8	B	-	23.8	C
14	South of Bennett SB	2-lane Freeway	1,500	14.8	B	1,999	19.7	C	1,529	15.1	B	2,130	21.0	C

Source: Appendix G

As shown in Table 8-13, all SR 20/49 facilities would continue to operate at an acceptable LOS under Year 2035 plus Alternative B conditions. Therefore, the cumulative impact of the Alternative B would be **less than significant**.

8.4 MITIGATION MEASURES

Mitigation Measure 8a: Under either Alternative A or Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of a larger concrete porkchop barrier within the existing acceleration lane to restrict all movements from the eastbound approach at the Idaho Maryland Road/ Brunswick Road intersection to right turns.

Mitigation Measure 8b: Under Alternative A or Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of either a traffic signal or a roundabout at the Idaho Maryland Road/State Route 20/49 northbound ramps intersection.

Mitigation Measure 8c: Under Alternative A, prior to issuance of a building permit, the project applicant shall pay a fair-share contribution towards the construction of a traffic signal at the Dorsey Drive/Catherine Lane intersection.

Mitigation Measure 8d: Under Alternative A, prior to issuance of the first certificate of occupancy for the project site, the project applicant shall pay a fair share contribution towards the signal optimization of the Dorsey Drive/SR 20/49 SB/EB On-Ramp/Joerschke Drive traffic signal.

Mitigation Measure 8e: Under Alternative A or Alternative B, prior to issuance of a building permit, the project applicant shall pay a fair share contribution towards construction of either a traffic signal or roundabout at the Dorsey Drive/Sutton Way intersection.

Mitigation Measure 8f: Under Alternative A, prior to issuance of a building permit, the project applicant shall restripe the southbound approach to the Idaho Maryland Road/Spring Hill Drive intersection to create a southbound right-turn pocket.

Mitigation Measure 8g: Under Alternative A, prior to issuance of a building permit, the project applicant shall pay a fair share contribution towards the construction of a traffic signal or roundabout at the Bennett Street/SR 20/49 SB Off-Ramp/Tinloy Street intersection.

Mitigation Measure 8h: Under Alternative B, prior to issuance of the first certificate of occupancy for the project site, the project applicant shall pay a fair share contribution towards the signal optimization of the traffic signals at the Dorsey Drive/SR 20/49 SB Ramp/Joerschke Drive intersection and the Dorsey Drive/SR 20/49 NB Ramps intersection.

8.5 REFERENCES CITED

California Department of Transportation (Caltrans). 2000. *Transportation Concept Report for State Route 49*. September 30, 2000.

Caltrans. 2002. *Guide for the Preparation of Traffic Impact Studies.* December 2002.

Caltrans. 2013. *Transportation Concept Report for State Route 20*. March 11, 2013.

City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

ITE (Institute of Transportation Engineers). 2012. *Trip Generation Manual.* Ninth Edition.

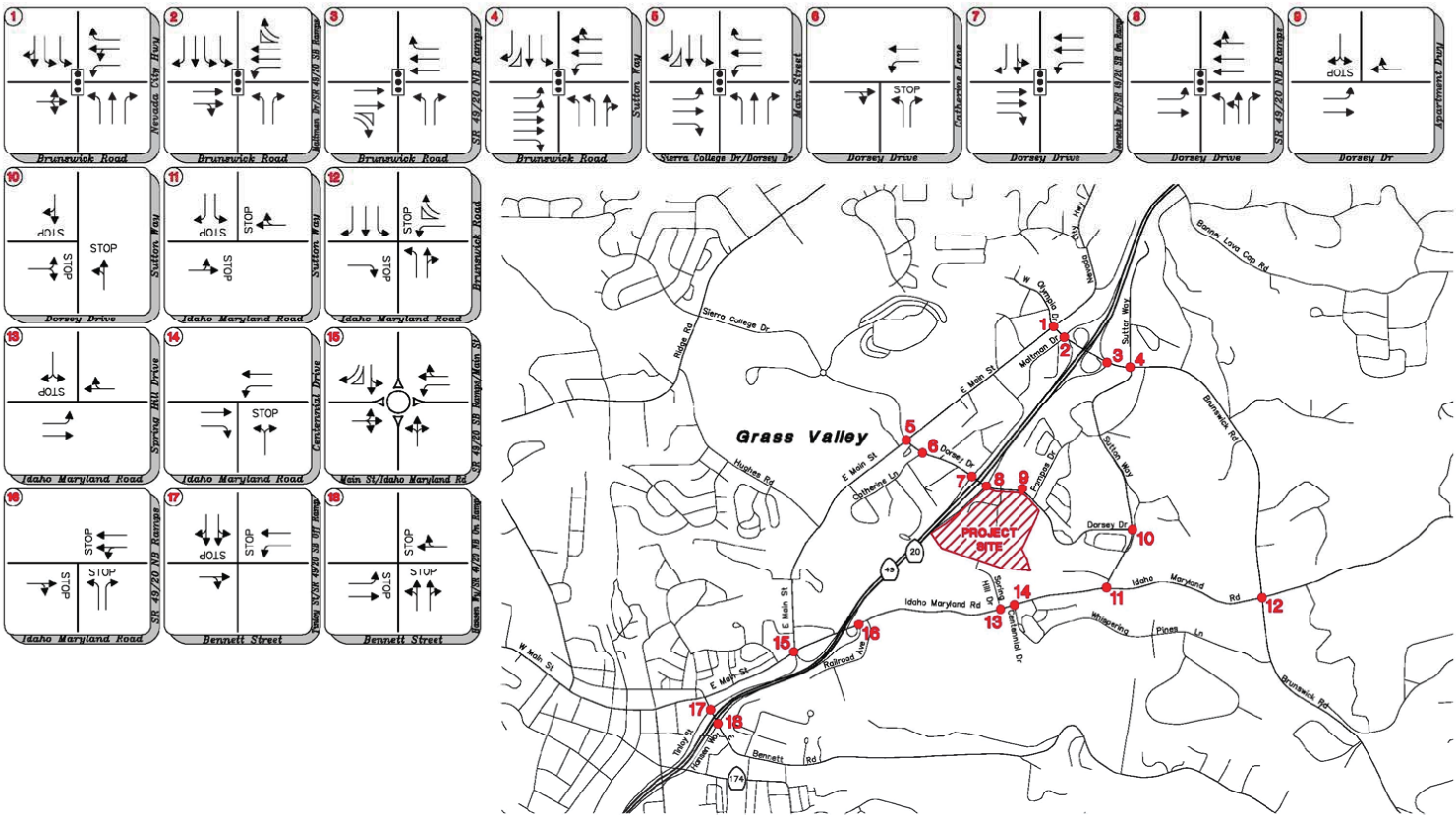
ITE. 2014. *Trip Generation Handbook.* Third Edition.

LSC Transportation Consultants Inc. 2016. *Western Nevada County Transit Development Plan Update*. Prepared for Nevada County Transportation Commission. April 11, 2016.

Nevada County Transportation Commission (NCTC). 2011. *Nevada County Pedestrian Improvement Plan*. Adopted March 16, 2011.

NCTC. *Nevada County Bicycle Master Plan Update*. Adopted July 17, 2013.

Transportation Research Board (TRB). 2000. Highway Capacity Manual 2000.



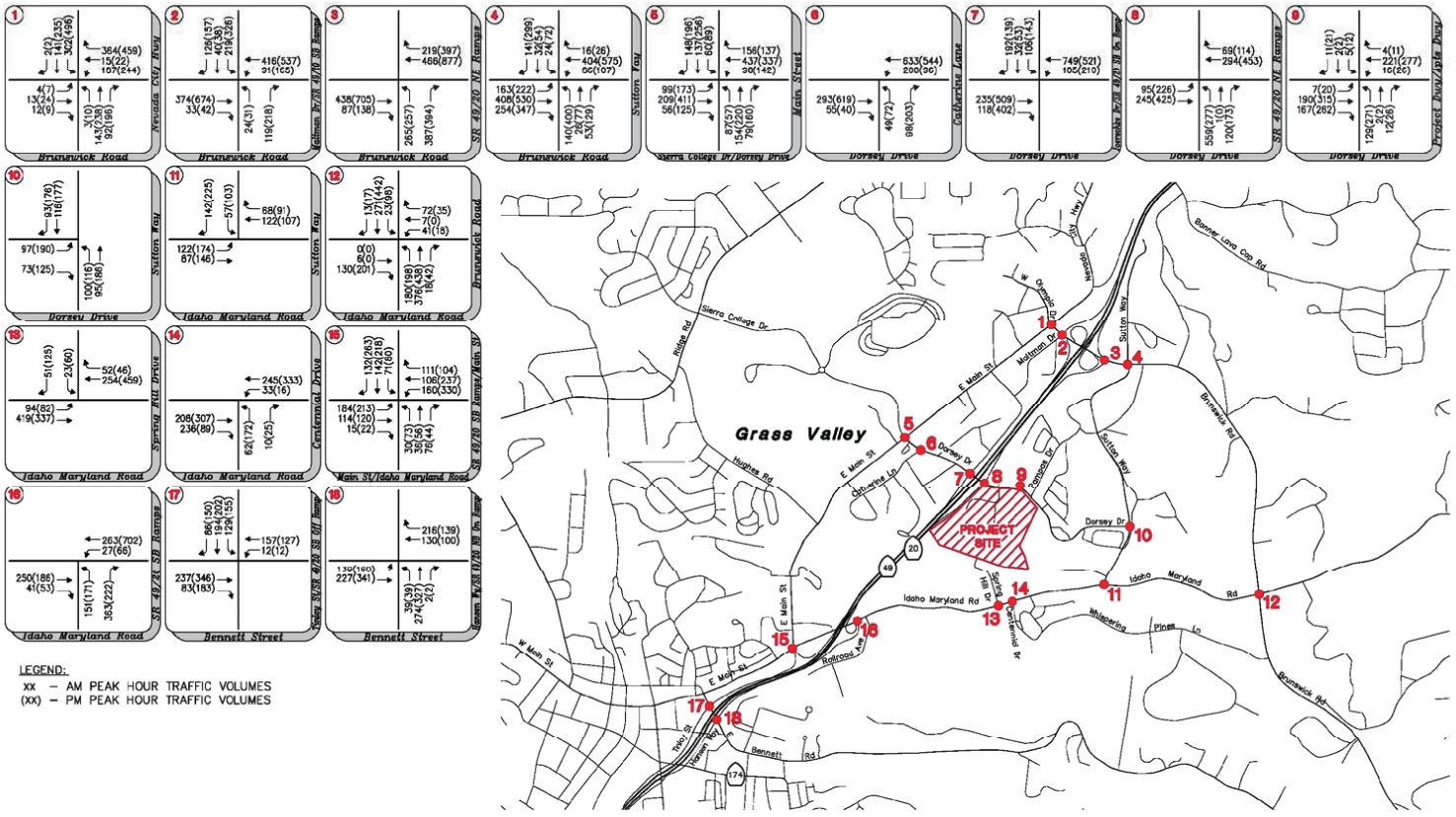
SOURCE: Omni Means 2018

FIGURE 8-1

Existing Peak Hour Traffic Volumes

Dorsey Marketplace EIR

DUDEK



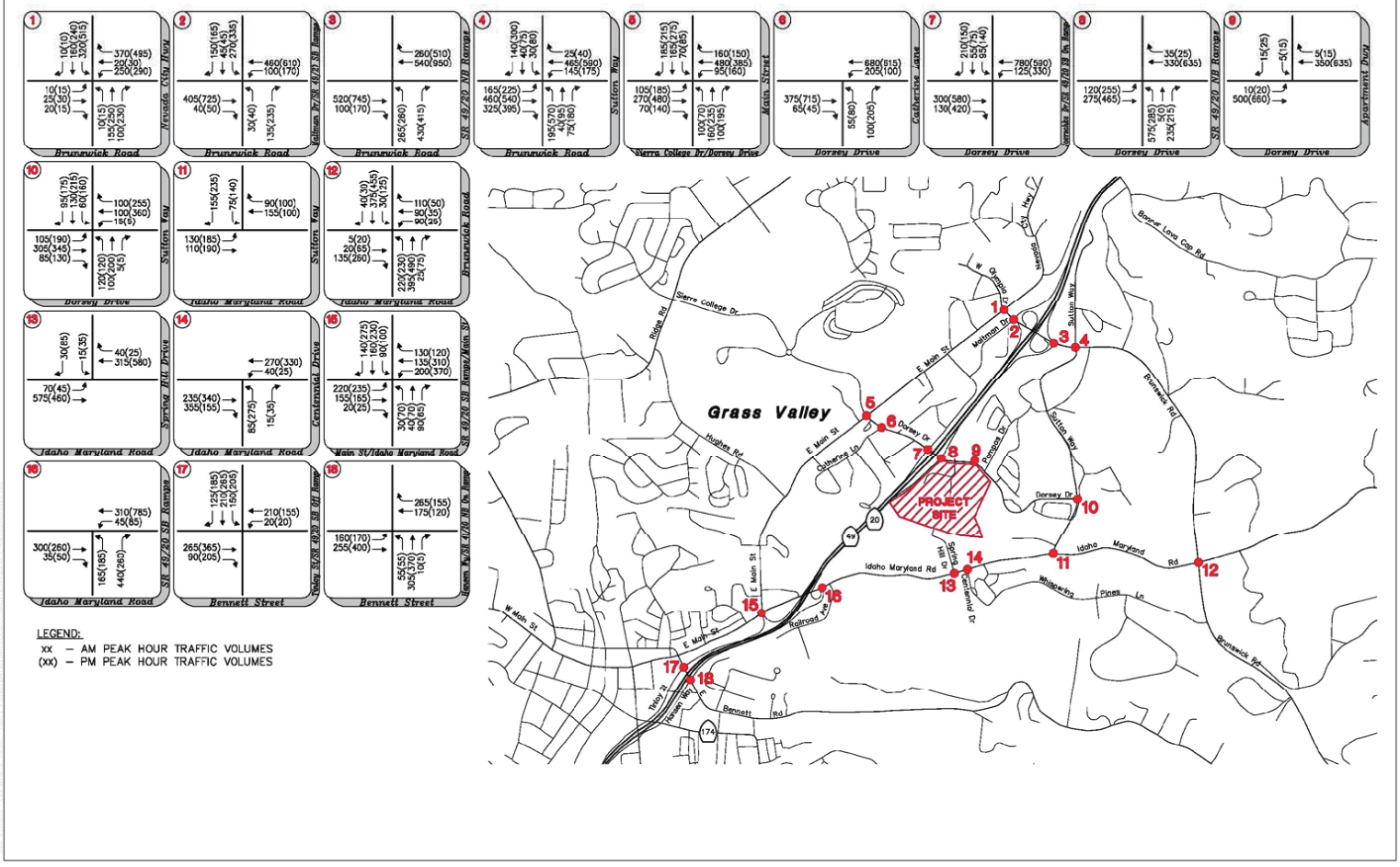
SOURCE: Omni Means 2018

FIGURE 8-2

Existing Plus Alternative B Peak Hour Traffic Volumes

Dorsey Marketplace EIR

DUDEK



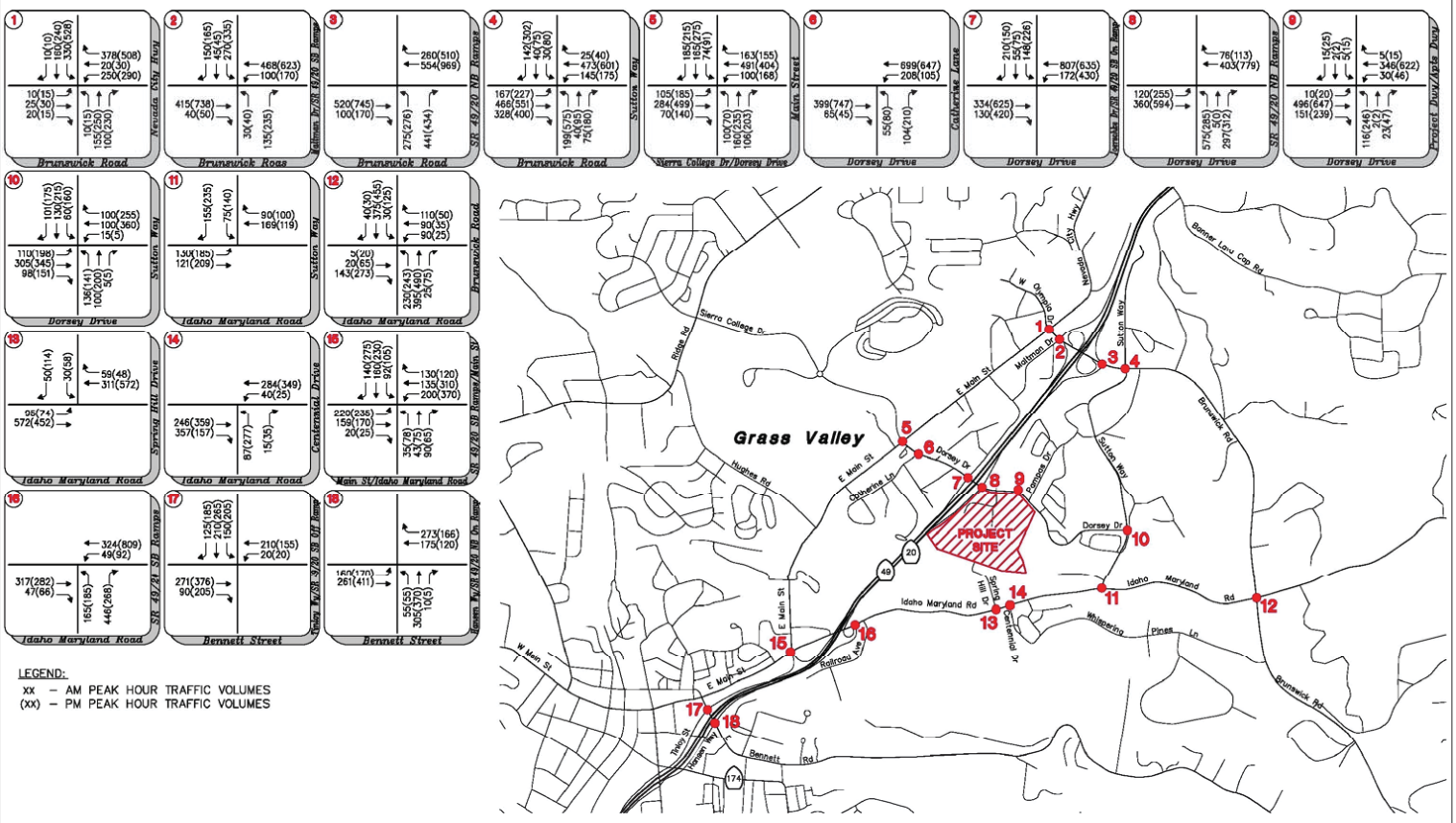
SOURCE: Omni Means 2018

FIGURE 8-3

Year 2035 No Project Peak Hour Traffic Volumes

Dorsey Marketplace EIR

DUDEK



SOURCE: Omni Means 2018

FIGURE 8-4

Year 2035 Plus Alternative B Peak Hour Traffic Volumes

Dorsey Marketplace EIR

DUDEK

CHAPTER 9
NOISE

This section describes the ambient noise environment and noise sensitive land uses proximate to the proposed Dorsey Marketplace (proposed project) site, identifies regulatory restrictions and policy requirements, evaluates potential impacts, and identifies mitigation measures, where necessary, required in order to reduce of avoid potentially significant impacts associated with implementation of the proposed project. Two versions of the project are evaluated in this section. Alternative A would provide for up to 90 multi-family residential units, a 3,200-square foot clubhouse, and approximately 178,960 square feet of commercial space. Alternative B would provide 171 multi-family residential units, a 3,200-square foot clubhouse, approximately 104,350 square feet of commercial space, and approximately 8,500 square feet of office space.

The information presented in this section is based on a review of the project plans, traffic noise modeling to estimate project related traffic noise, the *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999), and the Environmental Noise Analysis prepared for the project (Appendix H).

No comments were received in response to the Notice of Preparation regarding noise. The Notice of Preparation and comment letters received in response to it are included in Appendix A.

9.1 ENVIRONMENTAL SETTING

This section describes the existing noise environment in and around the project site, based upon site reconnaissance and sound level measurements, including receptors that may potentially be affected by noise. The discussion also describes the fundamentals of acoustics and summarizes regulations and ordinances that form the basis of the criteria used to evaluate the effect of project-generated noise upon the existing noise environment.

Characteristics of Environmental Noise

Fundamentals of Acoustics

Noise is generally defined as loud, unpleasant, unexpected, or undesired sound that disrupts or interferes with normal human activities. Although exposure to high noise levels over an extended period has been demonstrated to cause hearing loss, the principal human response to noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise, its appropriateness in the setting, the time of day, the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air, and are sensed by the human ear. Sound is generally characterized by a number of variables including frequency and intensity. Frequency describes the sound's pitch and is measured

in Hertz (Hz), while intensity describes the sound's loudness and is measured in decibels (dB). Decibels are measured using a logarithmic scale. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above approximately 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels. The minimum change in the sound level of individual events that an average human ear can detect is approximately 3 dB. An increase (or decrease) in sound level of approximately 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, this relation holds true for loud sounds and for quieter sounds.

Because of the logarithmic nature of the decibel unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB

Hertz is a measure of how many times each second the crest of a sound pressure wave passes a fixed point. For example, when a drummer beats a drum, the skin of the drum vibrates a number of times per second. A particular tone which makes the drum vibrate 100 times per second generates a sound pressure wave that is oscillating at 100 Hz; this pressure oscillation is perceived as a tonal pitch of 100 Hz. Sound frequencies between 20 Hz and 20,000 Hz are within the range of sensitivity of the human ear.

Sound from a tuning fork (a pure tone) contains a single frequency. In contrast, most sounds heard in the environment consist of a broad band of frequencies differing in sound level. The method commonly used to quantify environmental sounds consists of evaluating all of the frequencies of a sound according to a weighting system that reflects the fact that human hearing is less sensitive at low frequencies and extremely high frequencies than at the mid-range frequencies. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (dBA). In practice, the level of a noise source is conveniently measured using a sound level meter that includes a filter corresponding to the dBA curve, which de-emphasizes low and high frequencies of sound in a manner similar to the human ear.

Although the A-weighted sound level may adequately indicate the level of environmental noise at any instant in time, community noise levels vary continuously. Most environmental noise includes a conglomeration of noise from several sources that creates a relatively steady background noise in which no particular source is identifiable. A single descriptor called the equivalent sound level (L_{eq}) represents the "equivalent" constant sound level that would have to be produced by a given

source to equal the fluctuating level measured. L_{eq} is the mean A-weighted sound level during a measured time interval. In addition, it is often desirable to know the acoustic range of the noise source being measured. This is accomplished through the L_{max} and L_{min} indicators. They represent the maximum and minimum noise levels occurring during a given sound level measurement.

To describe the time-varying character of environmental noise, the statistical noise descriptors L_{10}, L_{50}, and L_{90} are commonly used. They are the noise levels equaled or exceeded during 10%, 50%, and 90% of a stated time. Sound levels associated with the L_{10} typically describe transient or short-term events, while levels associated with the L_{90} describe the steady-state (or most prevalent) noise conditions.

Another sound measure known as the day/night average noise level (L_{dn}) is defined as the A-weighted average sound level for a 24-hour day. It is calculated by adding a 10 dBA penalty to sound levels in the night (10:00 p.m. to 7:00 a.m.) to compensate for the increased sensitivity to noise during the quieter evening and nighttime hours. The L_{dn} is used by agencies such as the U.S. Department of Housing and Urban Development, the State of California, Placer County, and the Town of Loomis (Town) to define acceptable land use compatibility with respect to noise.

Exterior Noise Distance Attenuation

Noise sources are classified in two forms: (1) point sources, such as stationary equipment or a group of construction vehicles and equipment working within a spatially limited area at a given time, and (2) line sources, such as a roadway with a large number of pass-by sources (motor vehicles). Point source generated sound typically diminishes (attenuates) for each doubling of distance from the source to the receptor at a rate of 6.0 dBA at acoustically "hard sites" and a rate of 7.5 dBA for acoustically "soft" sites. Line source generated sound typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively. For the purpose of sound attenuation, a "hard" or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces and very hard-packed soils. Whereas an acoustically "soft" or absorptive site is characteristic of unpaved loose soil or vegetated ground.

Structural Noise Attenuation

Sound levels can also be attenuated by man-made or natural barriers. Structures can provide additional noise reduction by insulating interior spaces from outdoor noise. The outside-to-inside noise attenuation provided by typical structures in California ranges between 17 and 30 dBA with open and closed windows, respectively, as shown in Table 9-1.

Table 9-1
Outside-to-Inside Noise Attenuation (dBA)

Building Type	Open Windows	Closed Windows
Residences	17	25
Schools	17	25
Churches	20	30
Hospitals/Offices/Hotels	17	25
Theaters	17	25

Source: TRB 2013

Community Noise

Community noise is commonly described in terms of the "ambient" noise level, which is defined as the all-encompassing noise level associated with a given noise environment. The L_{dn} is based upon the average noise level over a 24-hour day, with a +10 dB weighting applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment. Where short-term noise sources are an issue, noise impacts may be assessed in terms of maximum noise levels, hourly averages, or other statistical descriptors.

Perception of Loudness

The perceived loudness of sounds and corresponding reactions to noise are dependent upon many factors, including sound pressure level, duration of intrusive sound, frequency of occurrence, time of occurrence, and frequency content. As mentioned above; however, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by weighing the frequency response of a sound level meter by means of the standardized A-weighing network. Table 9-2 shows examples of noise levels for several common noise sources and environments.

Table 9-2
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
—	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	—
Gas lawn mower at 1 meter (3 feet)	90	—
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)

Table 9-2
Typical Sound Levels in the Environment and Industry

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quite urban, daytime	50	Large business office; dishwasher next room
Quite urban, nighttime	40	Theater; large conference room (background)
Quite suburban, nighttime	30	Library
Quite rural, nighttime	20	Bedroom at night; concert hall (background)
—	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013

Fundamentals of Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Although the response of humans to vibration is very complex, it is generally accepted that human response is bet approximated by the vibration velocity level associated with the vibration occurrence.

Heavy equipment operation, including stationary equipment that produces substantial oscillation or construction equipment that causes percussive action against the ground surface, may be felt by building occupants. Ground-borne vibration commonly causes windows, pictures on walls, or items on shelves to rattle but would seldom be of sufficient magnitude to cause even minor cosmetic damage to buildings.

When evaluating human response, ground-borne vibration is usually expressed in terms of root mean square (RMS) vibration velocity. RMS is defined as the average of the squared amplitude of the vibration signal. As for sound, vibration amplitudes are commonly expressed in terms of decibels defined as:

$$L_v = 20 \log \left(\frac{v_{rms}}{v_{ref}} \right)$$

Where v_{rms} is the RMS vibration velocity amplitude in inches/second and v_{ref} is the decibel reference of $1x10^{-6}$ inches/second.

To avoid confusion with sound decibels, the abbreviation VdB is used for vibration decibels. The vibration threshold of perception for most people is around 65 VdB (which is equivalent to 0.0018 inches/second RMS). Vibration levels in the 70-75 VdB rnage are often noticeable, but generally deemed acceptable, and levels in excess of 80 VdB are often considered unacceptable (FTA 2006).

Existing General Ambient Noise Environment

Dudek visited the proposed project site on February 29 and March 1, 2016 to measure ambient sound levels in the vicinity. Figure 9-1 shows the measurement locations marked on a site map.

Short-term (ST#) measurements were conducted with a Larson Davis 820 sound level meter placed on a tripod with the microphone positioned approximately 5 feet above the ground. The Larson Davis 820 is classified as an ANSI Type 1 precision sound level meter. The sound level meter was calibrated before the measurement series in order to ensure accuracy of the measurements. The short-term measurements were 5 to 20 min long depending on the location. Table 9-3 presents the results of the short-term noise measurements with traffic count information.

Table 9-3
Short-Term Sound Level Measurements

Location	Distance to Roadway Edge	Observed Noise Sources	L_{eq}[1]	Cars	MT	HT[2]	MC[1]
ST1: Spring Hill Drive	10 feet	Traffic, Aircraft	61	27	1	0	0
ST2: Dorsey Drive	9 feet	Traffic,	67	111	0	0	1
ST3: State Route 20/49	80 feet	Traffic	73	453	3	9	2

Notes:
1 Equivalent Continuous Sound Level (Time-Average Sound Level)
2 Medium Trucks
3 Heavy Trucks
4 Motorcycles
* Environmental Weather Conditions: Temperature: 68°F, partly cloudy, 3 miles-per-hour light/gusty northeast wind

The long-term measurements were completed using four Soft DB Piccolo sound level meters. The Piccolo sound level meters meet the ANSI standard for a Type 2 general-purpose sound level meter. The meters collected hourly sound level data from February 29 to March 1, 2016. The Piccolo sound level meters were each calibrated before the measurements to ensure accuracy of the measurements. The recorded hourly equivalent levels (Leq) were appropriately weighted in the evening and overnight periods, and then averaged to produce the CNEL and Ldn results presented in Table 9-4.

Table 9-4
Long-Term Sound Level Measurements

Site/ Instrument #	Location Description	(dBA)	
		CNEL	L_{dn}
LT1	Northeast of Site at adjacent residences	51	51
LT2	South of Site near Industrial Area	55	55

Measurement results show Community Noise Exposure Levels range from 55 to 51 dBA in the site vicinity. The higher levels occur in close proximity to the major roads. LT2, located near the truck area south of the site, has high measured noise levels during the early morning (5-7 am) and nighttime hours that contribute to a higher CNEL.

Modeled Existing Transportation Noise

Vehicular traffic along vicinity roadways is typically a primary contributor to the overall noise environment in any urban neighborhood. Using current average daily traffic data and CadnaA, noise modeling software, Dudek modeled the CNEL associated with the local roadway network. Figure 9-2 shows modeled receiver locations. The existing sensitive receptors that are proximate to roadways that would be used by project-generated traffic are the residential land uses located along Dorsey Drive north and east of the project site. Table 9-5 below shows the Average Daily Traffic data for Dorsey Drive that was used for the traffic noise modeling. Results for the existing traffic noise are shown in this section, while future results for the residential component of the project are presented in later sections.

Table 9-5
Average Daily Traffic Volumes for Vicinity Roadways

ID	Existing	Existing + Project	2035	2035 + Project
Dorsey Drive over SR 20/49	1040	1289	1470	1689
Dorsey Drive north of project site	542	947	1108	1467
Dorsey Drive from Springhill Garden Apartments to Sutton Way	528	558	1093	1149
SR 20/49*	29350	29350	29350	29350

Source: Appendix G
* Source: Caltrans 2016

Table 9-6 presents the results of the noise modeling for the nearest existing sensitive receptors, as shown on Figure 9-2.

Table 9-6
Existing CNEL for Vicinity Roadways

Receiver Name	Existing CNEL (dBA)
M4_Existing Multifamily East of Site	52
M5_Existing Single Family Near Highway 49	69
M6_Existing Single Family on Mulberry	53

Source: Appendix H

Existing CNEL levels associated with the vicinity road network are generally compatible with the established uses in most places. The noise levels for existing traffic are above 65 dBA CNEL at locations near Highway 49. The majority of residential land uses farther from Highway 49 have existing traffic noise levels below 60 dBA Ldn.

9.2 REGULATORY SETTING

Federal Regulations

Federal Highway Administration (FHWA) Standards

CFR Title 23, part 772 sets procedures for abatement of highway traffic noise and construction noise. Title 23 is implemented by the Federal Department of Transportation (DOT) Federal Highway Administration (FHWA). This regulation provides procedures for noise studies and noise abatement measures to help protect public health and welfare, to supply noise abatement criteria, and to establish requirements for information to be given to local officials for use in the planning and design of highways. All highway projects developed in conformance with this regulation shall be deemed to be in conformance with the DOT-FHWA Noise Standards. Title 23 establishes a 67 dBA $L_{eq}(h)$ standard applicable to federal highway projects for evaluating impacts to land uses including residences, recreational uses, hotels, hospitals, and libraries (23 CFR Chapter 1, Part 772, Section 772.19).

Federal Transit Administration and Federal Railroad Administration Standards

Although the Federal Transit Administration (FTA) standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria including in the FTA Transit Noise and Vibration Impact Assessment Manual (FTA 2006) are routinely used for projects proposed by local jurisdictions. The FTA significance threshold for architectural damage to timber and unreinforced masonry structures is 0.2 inch/second peak particle velocity (PPV).

Federal Interagency Committee on Noise

The 1992 findings of the Federal Interagency Committee on Noise (FICON), which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations, provide some guidance as to the significance of changes in ambient noise levels due to transportation noise sources. The rationale for the FICON recommendations is that it is possible to consistently describe the annoyance of people exposed to transportation noise in terms of L_{dn}. The changes in noise exposure relative to existing noise levels, as shown in Table 9-7, are considered to be noticeable changes that result in increased annoyance experienced at sensitive land uses. Although the FICON recommendations were specifically developed to address aircraft noise impacts, they are also

applicable to other transportation noise sources such as roadways, and are used in this analysis for traffic noise described in terms of L_{dn}.

As shown in Table 9-7, an increase in noise from similar sources of 5 dB or more would be noticeable where the ambient level is less than 60 dB. Where the ambient level is between 60 and 65 dB, an increase in noise of 3 dB or more would be noticeable, and an increase of 1.5 dB or more would be noticeable where the ambient noise level exceeds 65 dB Ldn. The rationale for the criteria shown in Table 9-7 is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Table 9-7
Measures of Substantial Increase for Transportation Noise Exposure

Ambient Noise Level Without Project	Significant Impact Occurs if the Project Increases Ambient Noise Levels by:
<60 dBA	+ 5 dB or more
<60–65 dBA	+ 3 dB or more
>65 dBA	+ 1.5 dB or more

Source: FICON 1992

State Regulations

California Noise Control Act of 1973

California Health and Safety Code Sections 46000 through 46080, known as the California Noise Control Act of 1973, declares that excessive noise is a serious hazard to the public health and welfare and that exposure to certain levels of noise can result in physiological, psychological, and economic damage. The Act identifies a continuous and increase bombardment of noise in the urban, suburban, and rural areas and declares that California has a responsibility to protect the health and welfare of its citizens by the control, prevention and abatement of noise.

California Noise Insulation Standards (CCR Title 24)

Noise insulation standards for hotels, motels, dormitories, and multi-family residence buildings were adopted in 1974 by the California Commission on Housing and Community Development (CCR Title 24, Part 2). Title 24 establishes standards for interior room noise (attributable to outside noise sources) and specifies that acoustical studies must be prepared whenever a multi-family residence building or structure is proposed to be located in an area with CNEL (or L_{dn}) of 60 dBA or greater. The acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of no greater than 45 dBA (California's Title 24 Noise Standards, Chap. 2-35).

Local Regulations

City of Grass Valley Municipal Code

Chapter 8.28 of the Grass Valley Municipal Code is known as the Noise Ordinance. The ordinance establishes standards to be considered in determining whether a violation of this ordinance exists, as well as provisions for sound amplifying equipment, vehicles and vehicle repair, musical instruments and construction. According to Section 8.28.100, construction equipment or performance of outdoor construction and repair work shall not occur between the hours of 7:00 p.m. and 7:00 a.m. Monday through Saturday and not at all on Sunday or legal holidays. The noise ordinance provides ambient noise levels for land use zones as follows:

Decibels	Time	Zone
45 dBA	8:00 p.m. to 7:00 a.m.	Residential
55 dBA	7:00 a.m. to 8:00 p.m.	Residential
65 dBA	Anytime	Commercial
70 dBA	Anytime	All other zones

Source: City of Grass Valley 2013

City of Grass Valley General Plan

The City of Grass Valley General Plan Noise (N) Element identifies noise problems and forms a basis for land use distribution within the City. This element identifies goals (G), objectives (O), policies (P), and implementation measures (I) related to improving and maintaining appropriate levels of noise in the City. The following goal, objectives, policies and implementation measures apply to the proposed project:

1-NG: Protect Grass Valley's relatively quiet environment from unnecessary, annoying and potentially damaging noise.

1-NO: Coordination of transportation and land use planning to assure acceptable noise levels.

3-NO: Establishment of a pattern of land uses that minimizes exposure of community residents to excessive noise.

2-NP: Perform adequate acoustical analyses prior to approval of new development projects or transportation facilities, if warranted.

4-NP: Adopt appropriate noise level standards for existing and future residential areas.

6-NP: Locate sensitive land uses (residential neighborhoods, medical facilities, senior care facilities and schools) away from high noise areas.

1-NI: Prohibit development of new noise sensitive land uses where the noise level due to fixed noise sources will exceed the noise level standards of Table 9-8 (as measured immediately within the property line or within a designated outdoor activity area of the new development) unless effective noise mitigation measures have been incorporated into development design to achieve standards specified in Table 9-8.

5-NI: Prohibit new development of noise-sensitive land uses in areas exposed to existing or projected future levels of noise from transportation noise sources which exceed the levels specified in Table 9-9, unless the project design includes effective mitigation measures to reduce exterior noise and noise levels in interior spaces to levels specified in Table 9-9.

9-NI: Require an acoustical analysis and appropriate mitigation measures where noise-sensitive land uses are proposed in areas exposed to existing or projected exterior noise levels exceeding the levels specified in Table 9-8 and 9-9.

Table 9-8
Noise Level Performance Standards from Fixed Noise Sources Applicable to Proposed Noise-Sensitive Uses

Noise Level Descriptor	Daytime (7:00 a.m. to 10:00 p.m.)	Nighttime (10:00 p.m. to 7:00 a.m.)
Hourly L_{eq} dB	55	50
Maximum level dB	75	65

Note: Each of the noise levels specified above shall be lowered by five dB for simple tone noises, noises consisting of primarily speech or music, or for recurring impulsive noises (e.g., humming sounds, outdoor speakers systems, shooting ranges). These noise level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings).
Source: City of Grass Valley, 1999

Table 9-9
Maximum Allowable Noise Exposure Transportation Noise Sources Applicable to Proposed Noise-Sensitive Uses

Land Use	L_{dn}/CNEL, dB, at Outdoor Activity Areas	Interior Spaces	
		L_{dn}/CNEL dB	*L_{eq} dB*[1]
Residential	60[2]	45	--
Transient Lodging	60[3]	45	--
Hospitals, Nursing Homes	60[2]	45	--
Theaters, Auditoriums, Music Halls	--	--	35
Churches, Meeting Halls	60[2]	--	40
Office Buildings	--	--	45

Table 9-9
Maximum Allowable Noise Exposure Transportation Noise Sources
Applicable to Proposed Noise-Sensitive Uses

Land Use	L_{dn}/CNEL, dB, at Outdoor Activity Areas	Interior Spaces	
		L_{dn}/CNEL dB	L_{eq} dB[1]
Schools, Libraries, Museums	--	--	45
Playgrounds, Neighborhood Parks	70	--	--

Notes:
1. As determined for a typical worst-case hour during periods of use.
2. Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
3. In the case of hotel/motel facilities or other transient lodging, there may be no designated outdoor activity areas (e.g., pool areas). In such cases, only the interior noise level criterion will apply.

Source: City of Grass Valley, 1999

10-NI: Apply the following standards and practices to acoustical analyses:

- Where the locations of outdoor activity areas are not known or designated, the exterior noise level standards shall be applied immediately inside the property line of the receiving land use.
- In rural areas with large residential lots, the exterior noise level standard shall be applied at a point 100 feet from the residence.
- Where it is not practical to mitigate exterior noise levels at patios or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
- Where noise mitigation measures are required to achieve the standards of Table 9-8 and Table 9-9, the emphasis of such measures shall be placed upon site planning and project design. The use of noise barriers shall be considered a means of achieving the noise standards only after other practical design-related noise mitigation measures have been integrated into the project.
- When determining the effectiveness of noise mitigation measures, the noise standards shall be applied on the receptor side of noise barriers or other property line noise mitigation measures.
- If dwellings are located and constructed in accordance with the Noise Element, it may be assumed that the resulting exterior and interior levels will conform to the noise standards imposed by lending agencies such as HUD, FHA, and CalVet. Construction of new single-family dwellings or modification of existing dwellings

in developed areas may not be subject to City review with respect to satisfaction of the standards of the Noise Element. As a consequence, such dwellings may be constructed or modified in areas where noise levels exceed the standards of the Noise Element. It is not the responsibility of the City to ensure that such dwellings meet the noise standards of the Noise Element, or the HUD/FHA/CalVet noise standards.

9.3 IMPACTS

Significance Criteria

Potential impacts associated with noise have been evaluated using the following criteria, as identified in Appendix G of the CEQA Guidelines:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies,
- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels,
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Methods of Analysis

The FHWA Roadway Construction Noise Model (RCNM) (FHWA 2008) was used to estimate construction noise levels at the nearest existing noise-sensitive land uses. Although the model was created by the FHWA, RCNM is often used for non-roadway projects, because the same types of construction equipment used for roadways are also used for constructing most other projects as well. Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each (e.g., two graders, a loader, a tractor), the duty cycle for each piece of equipment (e.g., percentage the equipment typically works in a given time period), and the distance from the construction equipment/activity to the noise-sensitive receiver. No topographical or structural shielding was assumed in the modeling. RCNM has default duty-cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty-cycle values were used for this noise analysis.

The CadnaA noise modeling software was used to model noise generated by existing and future traffic on vicinity roadways affecting the project site. Future traffic volumes are based on data included in the

project traffic study (Appendix G). Model runs were performed using the traffic data to represent each of the different traffic scenarios contained in the traffic impact analysis.

For the assessment of roadway traffic noise increases resulting from project trips, receivers to represent existing noise-sensitive (i.e., residential) land uses in the project vicinity were included in the model, in addition to the sound level measurement locations used to calibrate the traffic noise model. Receiver locations to represent future on-site residential uses were also included in the model, to assess traffic noise exposure levels at such residences from future predicted roadway traffic. The receiver locations were placed approximately 5 feet above the ground level to model ear height of receivers.

Impact Analysis

Impact 9-1: Would the project expose persons to or generate noise levels in excess of standards established in the local General Plan or Noise Ordinance, or applicable standards of other agencies

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially Significant	Potentially Significant
Mitigation measures:	Mitigation Measure 9b	Mitigation Measures 9a and 9b
Significance after mitigation:	Less Than Significant	Less Than Significant

Alternative A and Alternative B

On-Site Receivers

Development of multi-family units at the project site could result in the exposure of on-site residents to traffic noise levels and fixed source noise levels (i.e., industrial or commercial facilities) that exceed standards contained in the Grass Valley Noise Element and Noise Ordinance. In addition, the project would have noise-generating characteristics including noise from short-term construction activities, introduction of new mechanical equipment, and new commercial and residential activities that could increase ambient noise levels at vicinity noise-sensitive land uses. Lastly, and the project would contribute trips to area roadways with attendant increases in off-site roadway traffic noise levels. Traffic noise increases related to the project, and experienced at existing off-site residential locations, is discussed under Impacts 9-3 and 9-5.

The noise modeling completed for this project placed modeling receivers at locations that represent the future residential land uses within the project site as well as at locations of existing noise-sensitive receptors in the project vicinity.

As shown in Figure 9-2, Noise Modeling Locations, receiver locations M1, M2, M3, M7 and M8 represent future residential locations within the project site. M1 is located at the southwest corner of the residential part of the project, east of the proposed extension of Spring Hill Drive along the

southern portion of the project site. M2 is located at the northern portion of the residential development area near the existing multifamily development to the east. M3 is placed near the center of the residential area in the southeastern portion of the project site. M7 is located on the east side of Spring Hill Drive. M8 represents residential receivers closer to SRR 20/49, in the area of the office and residential development area under Alternative B.

Table 9-10 provides the results of future traffic noise modeling at on-site receivers, selected as representative of future worst-case traffic noise exposure for proposed residential locations.

Table 9-10
Future Traffic Noise Exposure Levels at On-Site Residences

Modeled Receptor	Future (dBA)
M1_Proposed Multifamily Residential Adjacent to Spring Hill Drive	61
M2_Existing Multifamily Residential	55
M3_Proposed Multifamily Residential	56
M7_Proposed Multifamily Residential East of Spring Hill Drive	56
M8_Proposed Office/Multifamily Residential west of Spring Hill Drive (Alternative B Only)	61

Source: Appendix H

As indicated in Table 9-10, the representative residential receiver locations have expected traffic noise levels between 55 and 61 dBA CNEL. The residential modeling location on the west side of Spring Hill Drive may exceed 60 dBA Ldn, which is the maximum allowable noise exposure for noise-sensitive uses from transportation sources as established in the Grass Valley General Plan Noise Element (City of Grass Valley 1999). Additional calculations show that residential land uses on the east side of Spring Hill Drive would have levels of 60 dBA Ldn or less. Thus under Alternative A, the project would have **less-than-significant** impacts associated with future traffic noise exposure levels for residential uses within the project site. Under Alternative B, residential land uses are proposed to be located between SR 20/49 and Spring Hill Drive where traffic noise would exceed 60 dB Ldn; consequently traffic noise exposure impacts for residences located between SR 20/49 and Spring Hill Drive under Alternative B would be **potentially significant**.

To ensure traffic noise exposure impacts for residences remain less than significant, under Alternative B the project would be required to implement *Mitigation Measure 9a*. This measure requires construction of a sound attenuation barrier and increased construction standards for the residential units located on the west side of Spring Hill Drive. The sound attenuation barrier would reduce the noise exposure for the first floor of the residential and office buildings located nearest to SR 20/49, but due to reduced ground absorption and topographic shielding at elevated positions, traffic noise levels at the second and third floors would be approximately 4 dBA higher than first-floor levels. In addition, the upper floor façades would not be shielded by the required noise attenuation barrier. Because noise levels at the second and third floors of the residences proposed

adjacent to SR 20/49 would exceed the City's standards, Mitigation Measure 9a specifies that windows on those buildings where a direct line of sight to SR 20/49 and/or the highway off-ramp must have a minimum Sound Transmission Class (STC) rating of 32. Implementation of *Mitigation Measure 9a* would reduce potential impacts to a **less-than-significant** level.

Operational On-Site Impacts

Under both Alternative A and Alternative B, the project would develop several commercial buildings. Under Alternative A, there would be approximately 178,960 square feet of commercial land uses, while Alternative B includes approximately 104,350 square feet of commercial uses. As shown in the site plans in Figure 2-4, Alternative A Site Plan, and Figure 2-5, Alternative B Site Plan, setbacks between the commercial and residential areas would be at least 25 feet.

Under Alternative A, the proposed residential uses may be exposed to mechanical equipment and truck delivery noise associated with Shops C, D, and E located north of the residential area and Major 4 located west of the residential area. The building pads for the apartment buildings nearest to Shops C, D, and E would be approximately 7 feet lower in elevation than the building pads for these shops. This would result in exposure of the residential units on the second and third floors of the apartment buildings to mechanical equipment and truck delivery noise. The apartment building immediately south of Shops C, D, and E would be at the same elevation as Major 4, thus the units on the western end of this building could be exposed to truck delivery noise and mechanical equipment noise associated with Major 4. The apartment buildings along the southern project site boundary would be a minimum of 15 feet lower in elevation than Major 4 and would not be exposed to truck delivery and mechanical equipment noise. The proposed delivery schedule for trucks associated with the commercial spaces, the configuration of the loading dock area, and the location of exterior mechanical equipment to be associated with the commercial structures have not been specified at this time. Methods including the selection of low sound generating mechanical equipment, use of screen walls or roof parapet, restriction of delivery schedules, and noise barriers (sound walls) are available to address elevated noise levels from the commercial component, if necessary. Once detailed construction plans for the commercial and residential buildings are available, an accurate noise assessment can be conducted and noise control methods identified. To ensure that noise levels within the apartment units in the two buildings immediately south of Shops C, D, and E would meet the City of Grass Valley standards for interior noise levels, Mitigation Measure 9b requires that a noise assessment be performed to address potential noise impacts from truck deliveries and mechanical equipment associated with Shops C, D, and E and Major 4. The noise assessment must identify noise barriers for the commercial noise sources and/or increased construction standards for the residential structures that would ensure the interior noise levels are acceptable.

Alternative B would have the same potential for the proposed residential uses immediately south of Shops C, D, and E to be exposed to mechanical equipment and truck delivery noise. The proposed

apartment building closest to Major 1 could also be exposed to mechanical equipment noise from that building. The loading dock for Major 1 is located at the rear of that building and would not be within a direct line of sight to the proposed residential uses, thus exposure to truck delivery noise is not anticipated. As with Alternative A, the building pads for the apartment buildings nearest to Shops C, D, and E would be approximately 7 feet lower in elevation than the building pads for these shops, thus residential units on the second and third floors of these apartment buildings could be exposed to mechanical equipment and truck delivery noise. The proposed delivery schedule for trucks associated with the commercial spaces, the configuration of the loading dock area, and the location of exterior mechanical equipment to be associated with the commercial structures have not been specified at this time. Methods including the selection of low sound generating mechanical equipment, use of screen walls or roof parapet, restriction of delivery schedules, and noise barriers (sound walls) are available to address elevated noise levels from the commercial component, if necessary. Once detailed construction plans for the commercial and residential buildings are available, an accurate noise assessment can be conducted and noise control methods identified. To ensure that noise levels within the apartment units in the two buildings immediately south of Shops C, D, and E and the apartment building nearest to Major 1 would meet the City of Grass Valley standards for interior noise levels, Mitigation Measure 9b requires that a noise assessment be performed to address potential noise impacts from truck deliveries and mechanical equipment associated with Shops C, D, and E and Major 4. The noise assessment must identify noise barriers for the commercial noise sources and/or increased construction standards for the residential structures that would ensure the interior noise levels are acceptable. Implementation of Mitigation Measure 9b would reduce this impact to a **less-than-significant** level.

Impact 9-2: Would the project expose persons to or generate excessive ground-borne vibration or ground-borne noise?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less Than Significant	Less Than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less Than Significant	Less Than Significant

Alternative A and Alternative B

The proposed residential and commercial land uses under Alternative A and the proposed residential, commercial, and office land uses under Alternative B would not result in the use of equipment or activities capable of producing substantial long-term ground borne vibration or ground borne noise levels. The only ground vibration potential would be associated with site development and short-term construction.

Construction of the proposed land uses would not be expected to employ the most significant vibration-producing construction equipment and/or activities (i.e. pile-driving and blasting) that could generate vibration levels potentially damaging to adjacent structures. However, during land

clearing and construction activities at the project site, ground-borne vibration would be produced by heavy-duty construction equipment which may be perceptible to adjacent residents or building occupants. The most important equipment relative to generation of vibration, and the vibration levels produced by such equipment, is illustrated in Table 9-11. This information was compiled by the Federal Transit Authority for use in assessing construction vibration impacts from major transportation projects.

Table 9-11
Vibration Velocities for Typical Construction Equipment

Equipment	PPV at 25 Feet (Inches Per Second)
Loaded Trucks	0.076
Drill Rig / Auger	0.089
Jackhammer	0.035
Small Bulldozer	0.003

Source: Federal Transit Authority 2006

As shown in Table 9-11, use of heavy equipment (e.g., an auger-type drill rig) generates vibration levels of 0.089 inches per second PPV at a distance of 25 feet. For the purpose of this analysis, the 0.2 inches/second PPV threshold is used as a damage criteria since it applies to engineered timber and masonry buildings similar to the existing residential buildings in the project vicinity. The threshold for annoyance of 0.1 inches/second PPV is applied to address both potential annoyance to residents and building occupants in close proximity to the site.

Existing multifamily residential land uses exist approximately 35 feet south of the project site. At a distance of 30 feet, the residual vibration from construction equipment with the highest vibration potential (drill rig/auger) would be expected to attenuate to approximately 0.061 inches/second PPV. Other typical construction activities and equipment, including small bulldozers, loaded trucks and jackhammers, would have lower vibration levels at the existing adjacent residences. Since the expected vibration levels at the nearest residences would be less than even the threshold for annoyance (0.1 inches/second PPV), impacts associated with short-term construction-related ground vibration would be **less than significant**.

Impact 9-3: Would the project substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially Significant	Potentially Significant
Mitigation measures:	Mitigation Measure 9c	Mitigation Measure 9c
Significance after mitigation:	Less Than Significant	Less Than Significant

Alternative A and Alternative B

Activity noise associated with proposed residences at the project site would be similar to and consistent with existing uses within the project vicinity, and would therefore not be anticipated to be distinct from the ambient noise environment created by surrounding commercial and residential uses. With regard to fixed sources noise, the location and specifications of mechanical equipment that would be used for the residential development at the project site is not available at this time. However, this equipment could be audible at the existing apartments (i.e., a noise-sensitive residential land use) adjacent to the east of the site resulting in a **potentially significant** noise impact. Mitigation Measure 9c requires that a noise assessment of the mechanical equipment be completed to identify the noise level to which adjacent neighbors could be exposed and to identify noise control methods (such as placing equipment further from the adjacent neighbors and using barriers to screen the equipment) sufficient to ensure that noise levels at the nearest sensitive receptor do not exceed 55 dBA during daytime hours and 50 dBA during nighttime hours. This would ensure that noise levels remain within the acceptable noise range established by the City of Grass Valley and that impacts associated with mechanical noise at the project site would be **less than significant**.

Development of residential land uses at the project site would result in an increase in noise levels associated with additional vehicle trips added to vicinity streets from the project. This increase in traffic noise would be the primary noise impact related to development of residences at the project site.

Based on the project traffic study data (Appendix G), a traffic noise analysis was conducted to quantify the impact of the proposed project on the traffic noise levels in the project vicinity.

To assess project-related traffic noise increases, receiver points M4, M5, and M6 were created in the noise model at the locations of existing residential land uses. M4 is located at the closest residential land use just east of the project. M5 is located north of the project site and adjacent to SR 20/49. This location models high noise levels that could be expected from SR 20/49 for existing residential land uses. M6 is located north of the project site across Dorsey Drive in a single-family residential area.

Table 9-12 shows the resulting modeled sound levels for the receiver locations representing existing noise-sensitive land uses in the project vicinity under the different traffic scenarios, and the increase in ambient noise levels expected due to development of the project site.

Table 9-12
Traffic Noise Level Results

Modeled Receptor	Existing (dBA)	Existing with Project (dBA)	Difference (dBA)	Future (dBA)	Future with Project (dBA)	Difference (dBA)
M4_MultifamilyResidentialToEast	52	52	<1	52	53	<1
M5_SingleFamNorthNextToHighway	69	69	<1	69	69	0
M6_SingleFamMulberry	53	53	<1	54	54	<1

Source: Appendix H

The addition of project-related traffic to the vicinity roadways would increase the CNEL by less than 1 dB, which is below the discernible level of change for the average human ear. Additionally, none of the modeled off-site receivers would experience increases in traffic noise levels that would go from less than 60 dBA Ldn to greater than 60 dBA Ldn. Therefore, the increase in off-site traffic noise from the development of the project site would be **less than significant**.

Impact 9-4: Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially Significant	Potentially Significant
Mitigation measures:	Mitigation Measure 9d	Mitigation Measure 9d
Significance after mitigation:	Less Than Significant	Less Than Significant

Alternative A and Alternative B

Construction is the most important source of a potential temporary increase in ambient noise levels due to the project. No periodic ambient noise increases would be expected in association with future development of mixed uses at the project site.

Construction of residences, commercial buildings, and offices at the project site could generate noise that could expose nearby receptors to elevated noise levels that may disrupt communication and routine activities. The magnitude of the impact would depend on the type of construction activity, equipment employed, duration of the construction, distance between the noise source and receiver, and the presence or absence of intervening structures. These construction characteristics would be the same for both alternatives.

Equipment that would be in operation during construction would likely include dozers, backhoes, graders, excavators, forklifts, cranes, compressors, paving equipment, and rollers. Typically, construction equipment operates in alternating cycles of full power and low power, producing average noise levels less than the maximum noise level. The average sound level of construction activity also depends on the amount of time that the equipment operates and the intensity of the construction activities during that time.

Construction Equipment Data and Description

The typical maximum noise levels for various pieces of construction equipment at a distance of 50 feet are presented in Table 9-13. For example, the maximum measured sound level from operation of a backhoe is 78 dBA at a distance of 50 feet.

Table 9-13
Typical Construction Equipment Noise Emission Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Use Factor (%)	Measured L_{max} @50ft (dBA, slow)
Auger Drill Rig	No	20	84
Backhoe	No	40	78
Compactor (ground)	No	20	83
Compressor (air)	No	40	78
Concrete Mixer Truck	No	40	79
Concrete Pump Truck	No	20	81
Crane	No	16	81
Dozer	No	40	82
Dump Truck	No	40	76
Excavator	No	40	81
Flat Bed Truck	No	40	74
Front End Loader	No	40	79
Generator	No	50	81
Man Lift	No	20	75
Paver	No	50	77
Pickup Truck	No	40	75
Pneumatic Tools	No	50	85
Roller	No	20	80
Warning Horn	No	5	83

Source: DOT 2006.

Table 9-14 provides a summary of the assumed construction equipment used for the different phases of construction based on the air quality analysis conducted for the project.

Table 9-14
Construction Equipment by Phase

Construction Phase	Equipment	# of Devices
Laying Rock Base - General	Dozer	3
	Tractor	2
	Loader	1
	Backhoe	1
Site Preparation	Tractor	2
	Backhoe	1
	Front End Loader	1
	Dozer	3
Grading	Excavator	2
	Dozer	1
	Scrapper	2
	Front End Loader	1
	Tractor	1
	Grader	1
	Trencher	1
Building Construction	Generator	1
	Crane	1
	Man Lift	3
	Tractor	1
	Front End Loader	1
	Backhoe	1
	Welder / Torch	1
Paving	Paver	2
	Roller	2
	All Other Equipment > 5 HP	2
Architectural Coating	Compressor (air)	1

Using the FHWA RCNM construction noise model and construction information (types and number of construction equipment by phase), the estimated noise levels from construction were calculated for a representative range of distances, as presented in Table 9-15, Construction Noise Model Results Summary. The nearest receiver is about 30 feet from the construction operations. This receiver is intended to represent a worst case when construction operations occur near the site boundary along the existing residential land use to the east of the project site. R2 represents the typical distance from construction activities to the same receiver for when construction activities are concentrated away from the perimeter of the site (a distance of approximately 100 feet).

The RCNM inputs and outputs are provided in Appendix H.

Table 9-15
Construction Noise Modeling Summary Results

Construction Phase	L_{eq} (dBA)	
	Nearest Receiver 30'	*Typical Receiver 100'*
Laying Rock Base	89	79
Site Preparation	89	79
Grading/Utilities	92	82
Paving	83	74
Building Construction	91	82
Architectural Coating	78	68

Notes: L_{eq} = equivalent continuous sound level; dBA = A-weighted decibels;
Source: Appendix H

As presented in Table 9-15, the highest noise levels are predicted to occur during grading, when noise levels from construction activities would be expected to be approximately 92 dBA L_{eq} at the nearest existing residences, approximately 30 feet away. For the more typical case (construction activity averaging 100 feet from residences), construction noise levels would range up to 82 dBA $L_{eq.}$

Average noise levels from on-site construction activities would likely be annoying since levels are expected to be substantially higher than the ambient noise level in the site vicinity. This would be particularly true for the residential apartments located east of the project site. Restricting construction activities to the daytime period would avoid disruption during evening hours and overnight sleep periods, thus minimizing the potential for annoyance to occur.

The City of Grass Valley Noise Ordinance states that construction equipment or performance of outdoor construction and repair work shall not occur between the hours of 7:00 p.m. and 7:00 a.m. Monday through Saturday and not at all on Sunday or legal holidays. Average construction noise levels could range from approximately 68 dBA to 82 dBA Leq. These levels are up to 27 dB above the daytime ambient noise level restriction for fixed source noise levels within noise-sensitive land use zones under the Grass Valley Noise Ordinance. Therefore, temporary construction noise associated with development at the project site would be considered a **potentially significant** impact. Mitigation Measure 9d, which includes construction-related noise requirements, would reduce annoyance impacts. Based on the temporary and fluctuating nature of the construction noise and the addition of the mitigation measure, construction noise would be reduced to a **less-than-significant** level with implementation of Mitigation Measure 9d.

Impact 9-5: Would the project result in traffic noise levels causing a substantial permanent increase in cumulative noise levels?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less Than Significant	Less Than Significant

Alternative A and Alternative B

As shown in Table 9-12, existing residences proximate to SR 20/49 are already exposed to noise levels that exceed the City's standards, and this is expected to continue in the cumulative scenario. Specifically, the existing and future noise level at modeling location M5 (north of the project site and adjacent to the east side of SR 20/49) is 69 dB, which exceeds the City's standard of 60 dB. Thus there is a significant cumulative impact in this location. Under both Alternative A and Alternative B, development of the project site would result in a net increase in traffic volume over the anticipated cumulative traffic volumes in the no project condition. However, as shown in Table 9-12, the traffic noise levels in the project vicinity in the "future with project" condition would increase less than 1 dB L_{dn} at the modeled noise sensitive receptors, compared to the future without project scenario, and the project-generated traffic would not cause any noise levels that are currently below 60 dB to increase above 60 dB. Further, the project-generated traffic would not cause the noise level at modeling location M5 to increase. Consequently, the project-related increases in future traffic noise levels would not make a cumulatively considerable contribution to the significant cumulative impact and the project's effects would remain **less than significant**.

9.4 MITIGATION MEASURES

Mitigation Measure 9a Under Alternative B only, a noise attenuation barrier shall be constructed between the proposed residential apartment buildings in the southwestern corner of the site and SR 20/49. Further, where windows on the second and third floors of buildings adjacent to SR 20/49 and its off-ramp have a direct line of sight to the highway and/or off-ramp shall have a minimum Sound Transmission Class (STC) rating of 32.

The noise attenuation barrier shall be a minimum height of 6 feet and shall be constructed of concrete or other solid material that is rigid and has a minimum density of 20 kilograms/square meter. Additionally, the noise attenuation barrier shall be constructed in accordance with the Caltrans standards outlined in Chapter 1100 of the Highway Design Manual. The City of Grass Valley shall ensure that the noise barriers

are shown on construction plans prior to issuance of grading permits and shall verify the barriers have been constructed as required prior to issuance of certificates of occupancy.

Mitigation Measure 9b Under Alternative A, a noise assessment shall be performed to address potential noise impacts to the apartment buildings immediately south of Shops C, D, and E to determine the exposure to noise from commercial mechanical equipment noise and truck delivery noise at Shops C, D, and E and at Major 4. Under Alternative B the noise assessment shall consider noise exposure associated with commercial mechanical equipment noise and truck delivery noise at Shops C, D, and E and at Major 1. For either alternative the assessment shall identify requirements to construct noise barriers for commercial noise sources and/or implement increased construction standards within the affected apartment buildings to ensure that interior noise levels will be 45 dB or less.

Mitigation Measure 9c Under Alternative A and Alternative B, a noise assessment of the mechanical equipment for the proposed residential units east of Spring Hill Drive shall be completed to identify the noise levels to which adjacent neighbors could be exposed and to identify noise control methods (such as placing equipment further from the adjacent neighbors and using barriers to screen the equipment) sufficient to ensure that noise levels at the nearest sensitive receptor do not exceed 55 dBA during daytime hours and 50 dBA during nighttime hours.

Mitigation Measure 9d Prior to issuance of grading and/or building permits, City staff shall ensure that project Grading and Building Plans identify locations for all stationary noise-generating construction equipment, such as air compressors, that are located as far as practical from nearby homes. Where such equipment must be located near adjacent residences, project Grading and Improvement plans shall include provisions to provide acoustical shielding of such equipment prior to issuance of grading and/or building permits

Additionally, City staff shall ensure that the Grading and Building Plans include the following notes:

A. Construction noise emanating from any construction activities for which a grading or building permit is required shall be prohibited on Sundays and federal holidays, and shall occur only as follows:

   - Monday through Friday, 7:00 a.m. to 7:00 p.m.
   - Saturday, 7:00 a.m. to 7:00 p.m.

B. All construction equipment shall be fitted with factory-installed muffling devices, and all construction equipment shall be maintained in good working condition to lower the likelihood of any piece of equipment emitting noise beyond the standard decibel level for that equipment.

C. All equipment and vehicles shall be turned off when not in use.

D. Unnecessary idling of internal combustion engines shall be prohibited.

E. Idling shall be limited to no more than 5 minutes.

9.5 REFERENCES CITED

Caltrans (California Department of Transportation). 1980. *Fundamentals and Abatement of Highway Traffic Noise.* September 1980.

Caltrans. 2013. *Technical Noise Supplement to the Traffic Noise Analysis Protocol*. September 2013. http://www.dot.ca.gov/hq/env/noise/pub/TeNS_Sept_2013B.pdf.

City of Grass Valley. 1999. *City of Grass Valley 2020 General Plan*. Adopted November 23, 1999.

City of Grass Valley. 2013. "Grass Valley Municipal Code Chapter 8.28 Noise." September 10, 2013. Accessed June 9, 2016. Available at https://www2.municode.com/library/ca/grass_valley/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.28NO

FTA (Federal Transit Administration). 2006. *Transit Noise & Vibration Impact Assessment.* Federal Transit Administration, Office of Planning and Environment. May 2006.

TRB (Transportation Research Board). 2013. *Evaluating Pavement Strategies and Barriers for Noise Mitigation.* National Cooperative Highway Research Program Report 738.

SOURCE: Bing Maps 2018

DUDEK

0 500 1,000 Feet

FIGURE 9-1

Noise Measurement Locations

Dorsey Marketplace EIR

SOURCE: Bing Maps 2018

DUDEK

0 500 1,000 Feet

FIGURE 9-2

Noise Modeling Locations

Dorsey Marketplace EIR

CHAPTER 10
AIR QUALITY

Development of the proposed Dorsey Marketplace (proposed project) under either the project alternatives is expected to generate air pollutant emissions during construction activities and occupancy of the project. Alternative A would provide for up to 90 apartment units, approximately 178,960 square feet of commercial space, and a 3,200-square-foot clubhouse. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and a 3,200-square-foot clubhouse.

The portion of Nevada County where the proposed project is located is in a federal nonattainment area for ozone (O_3) and is designated as a nonattainment area for state O_3 and particulate matter with an aerodynamic diameter equal to or less than 10 microns (PM_{10}) standards. This section addresses project impacts under both Alternative A and Alternative B on air quality by analyzing the type and quantity of emissions that would be generated by the development of the proposed project.

Information referenced to prepare this section includes:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- *Grass Valley General Plan Background Report* (Quad Knopf 1998)
- California Emissions Estimator Model (CalEEMod) (Appendix I)

One comment from the Wolf Creek Community Alliance was received in response to the Notice of Preparation regarding air quality and carbon sequestration that would be lost from removal of existing vegetation. The Notice of Preparation and letters received in response to it are included in Appendix A.

10.1 ENVIRONMENTAL SETTING

Ambient air quality is generally affected by climatological conditions, the topography of the air basin, and the type and amounts of pollutants emitted. The project site is located within the Mountain Counties Air Basin (MCAB). The MCAB includes portions of Amador, Calaveras, El Dorado, Mariposa, Nevada, Placer, Plumas, Sierra, and Tuolumne counties and is comprised of seven air districts. Nevada, Plumas, and Sierra counties are part of the Northern Sierra Air Quality Management District (NSAQMD). This section describes relevant characteristics of the air basin, types of air pollutants, health effects, and existing air quality levels.

Climate and Topography

Mild, wet winters and hot, dry summers characterize the climate of central and western Nevada County. Precipitation generally occurs between November and April. Prevailing winds are from the south and southwest, and local air quality is influenced by the transportation of emissions from upwind mobile and stationary pollution sources in Placer County, the Sacramento metropolitan area, and the San Francisco Bay area.

Air quality in western Nevada County is also affected by inversion layers, which occur when a layer of warm air traps a layer of cold air beneath it, preventing vertical dispersion of air contaminants. Calm atmospheric conditions that contribute to the creation of these inversion layers frequently occur in the region during late fall and early spring. The presence of an inversion layer results in higher concentrations of pollutants near ground level.

Criteria Air Pollutants

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. The federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include O_3, nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), PM_{10}, particulate matter with an aerodynamic diameter equal to or less than 2.5 microns ($PM_{2.5}$), and lead. These pollutants, as well as toxic air contaminants (TACs), are discussed in the following text.[1] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

Ozone. O_3 is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and O_3 precursors, such as hydrocarbons and NO_x. These precursors are mainly NO_x and reactive organic gases (ROGs, also termed volatile organic compounds [VOCs]). The maximum effects of precursor emissions on O_3 concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in O_3 formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. O_3 exists in the upper atmosphere O_3 layer (stratospheric ozone) and at the Earth's surface in the troposphere (ozone).

[1] The descriptions of each of the criteria air pollutants and associated health effects are based on the EPA's Criteria Air Pollutants (2016) and the CARB Glossary of Air Pollutant Terms (2016a).

O_3 in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to O_3 can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. These health problems are particularly acute in sensitive receptors such as the sick, the elderly, and young children.

Nitrogen Dioxide. NO_2 is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of NO_2 in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. NO_x plays a major role, together with ROG, in the atmospheric reactions that produce O_3. NO_x is formed from fuel combustion under high temperature or pressure. In addition, NO_x is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

NO_2 can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections.

Carbon Monoxide. CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, such as the project location, automobile exhaust accounts for the majority of CO emissions. CO is a nonreactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

Sulfur Dioxide. SO_2 is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of SO_2 are coal and oil used in power plants and industries; as such, the highest levels of SO_2 are generally found near large industrial complexes. In recent years, SO_2 concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of SO_2 and limits on the sulfur content of fuels.

SO_2 is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, SO_2 can

injure lung tissue and reduce visibility and the level of sunlight. SO_2 can also yellow plant leaves and erode iron and steel.

Particulate Matter. Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. $PM_{2.5}$ and PM_{10} represent fractions of particulate matter. Fine particulate matter ($PM_{2.5}$) is roughly 1/28 the diameter of a human hair. $PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as sulfur oxides (SO_x), NO_x, and VOCs. Coarse particulate matter (PM_{10}) is about 1/7 the thickness of a human hair. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions.

$PM_{2.5}$ and PM_{10} pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{2.5}$ and PM_{10} can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas PM_{10} tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces on which they settle and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and the elderly may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing in particulate matter. Children may experience a decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive are smokers, people who cannot breathe well through their noses, and exercising athletes (because many breathe through their mouths).

Lead. Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phase-out of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phase-out of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

Volatile Organic Compounds. Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of O_3 are referred to and regulated as ROG (also referred to as volatile organic compounds). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of ROG result from the formation of O_3 and its related health effects. High levels of ROG in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for ROG as a group.

Toxic Air Contaminants

A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic non-cancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In the State of California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, Assembly Bill (AB) 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include

carcinogenic (i.e., cancer-causing) and non-carcinogenic effects. Non-carcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

Naturally occurring asbestos is found in some areas throughout California, most commonly where ultramafic rock or serpentinite rock is present. Another form of asbestos, known as tremolite, can be found associated with ultramafic rock, particularly near faults. When construction activities occur in areas with naturally occurring asbestos in the soils or rock, the asbestos can become airborne and may be inhaled. The project site is known to contain serpentine rock.

Local Ambient Air Quality

CARB, air districts, and other agencies monitor ambient air quality at approximately 250 air quality monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 feet above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. The most recent background ambient air quality data from 2015 to 2017 in Grass Valley are presented in Table 10-1. The air quality monitoring station is located at 200 Litton Drive, Suite 230, Grass Valley, California, 95945, located approximately 0.75 miles northwest of the project site. The data collected at this station are considered representative of the air quality experienced in the project vicinity. Air quality data and the number of days exceeding the ambient air quality standards for O_3 and $PM_{2.5}$, the pollutants monitored at the Grass Valley station, are provided in Table 10-1.

Table 10-1
Local Ambient Air Quality Data – Grass Valley, Litton Building Monitoring Station

Concentration or Exceedances	Ambient Air Quality Standard	2015	2016	2017
Ozone (O_3)				
Maximum 1-hour concentration (ppm)	0.09 ppm (state)	0.101	0.101	0.108
Number of days exceeding state standard (days)		*4*	*6*	*13*
Maximum 8-hour concentration (ppm)	0.070 ppm (state)	0.093	0.097	0.099
	0.070 ppm (federal)	0.092	0.097	0.099
Number of days exceeding state standard (days)		*30*	*46*	*85*
Number of days exceeding federal standard (days)		*26*	*39*	*78*
Fine Particulate Matter ($PM_{2.5}$)				
Maximum 24-hour concentration (μg/m³)	35 μg/m³ (federal)	11.5	11.7	68.1
Number of days exceeding federal standard (days) [a]		*0 (0)*	*0 (0)*	*3.0 (1)*
Annual concentration (μg/m³)	12 μg/m³ (state)	130.0	19.5	75.4
	12.0 μg/m³ (federal)	4.5	4.6	4.9

Sources: CARB 2018.
Notes: μg/m3 = micrograms per cubic meter; ppm = parts per million.
Data taken from California Air Resources Board (CARB) iADAM (http://www.arb.ca.gov/adam) represent the highest concentrations experienced over a given year.

Daily exceedances for particulate matter are estimated days because $PM_{2.5}$ is not monitored daily. There is no federal standard for 1-hour O_3, nor is there a state 24-hour standard for $PM_{2.5}$.
Grass Valley – Litton Building Monitoring Station is located at 200 Litton Drive, Suite 230, Grass Valley, California, 95945.
[a] Measurements of $PM_{2.5}$ are usually collected every 1 to 3 days. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. People most likely to be affected by air pollution include children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases. Facilities and structures where these air pollution-sensitive people live or spend considerable amounts of time are known as sensitive receptors. Land uses where air pollution-sensitive individuals are most likely to spend time include schools and schoolyards, parks and playgrounds, daycare centers, nursing homes, hospitals, and residential communities (sensitive sites or sensitive land uses) (CARB 2005). To the north of this and east of the project site, separated by open space, are the Grass Valley Terrace Apartments. To the north of the proposed project, on the other side of Dorsey Drive, are the Springhill Garden Apartments. Additionally, across State Route 20/49 there are sensitive populations in the Golden Empire Nursing and Rehab Center and the Sierra Nevada Memorial Hospital.

10.2 REGULATORY FRAMEWORK

Federal Regulations

Clean Air Act

The federal Clean Air Act, passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the Clean Air Act, including setting National Ambient Air Quality Standards (NAAQS) for major air pollutants; setting hazardous air pollutant (HAP) standards; approving state attainment plans; setting motor vehicle emission standards; issuing stationary source emission standards and permits; and establishing acid rain control measures, stratospheric O_3 protection measures, and enforcement provisions. Under the Clean Air Act, NAAQS are established for the following criteria pollutants: O_3, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and lead.

The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The NAAQS (other than for O_3, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. NAAQS for O_3, NO_2, SO_2, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over 1- to 3-year periods, depending on the pollutant. The Clean Air Act requires the EPA to

reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health based on current scientific evidence. States with areas that exceed the NAAQS must prepare a state implementation plan that demonstrates how those areas will attain the standards within mandated time frames.

Hazardous Air Pollutants

The 1977 federal Clean Air Act amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. Hazardous air pollutants (HAPs) include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 federal Clean Air Act Amendments, which expanded the control program for HAPs, 189 substances and chemical families were identified as HAPs.

State Regulations

California Ambient Air Quality Standards

The federal Clean Air Act delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to CARB, with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal Clean Air Act, and regulating emissions from motor vehicles and consumer products.

CARB has established California Ambient Air Quality Standards (CAAQS), which are generally more restrictive than the NAAQS. An ambient air quality standard (AAQS) defines the maximum amount of a pollutant averaged over a specified period of time that can be present in outdoor air without harm to the public's health. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered “in attainment” if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, PM_{10}, and $PM_{2.5}$ and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. Nevada County is designated by the EPA as a nonattainment area for the federal 8-hour ozone standard and CARB has designated the County as a nonattainment area for the state ozone, and PM_{10}. The County is designated as unclassified or attainment for all other criteria air pollutants. The NAAQS and CAAQS are presented in Table 10-2.

Table 10-2
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
O_3	1 hour	0.09 ppm (180 μg/m³)	—	Same as Primary Standard[f]
	8 hours	0.070 ppm (137 μg/m³)	0.070 ppm (137 μg/m³)[f]	
NO_2[g]	1 hour	0.18 ppm (339 μg/m³)	0.100 ppm (188 μg/m³)	Same as Primary Standard
	Annual Arithmetic Mean	0.030 ppm (57 μg/m³)	0.053 ppm (100 μg/m³)	
CO	1 hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	None
	8 hours	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	
SO_2[h]	1 hour	0.25 ppm (655 μg/m³)	0.075 ppm (196 μg/m³)	—
	3 hours	—	—	0.5 ppm (1,300 μg/m³)
	24 hours	0.04 ppm (105 μg/m³)	0.14 ppm (for certain areas)[g]	—
	Annual	—	0.030 ppm (for certain areas)[g]	—
PM_{10}[i]	24 hours	50 μg/m³	150 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 μg/m³	—	
$PM_{2.5}$[i]	24 hours	—	35 μg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 μg/m³	12.0 μg/m³	15.0 μg/m³
Lead[j,k]	30-day Average	1.5 μg/m³	—	—
	Calendar Quarter	—	1.5 μg/m³ (for certain areas)[k]	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 μg/m³	
Hydrogen sulfide	1 hour	0.03 ppm (42 μg/m³)	—	—
Vinyl chloride[j]	24 hours	0.01 ppm (26 μg/m³)	—	—
Sulfates	24 hours	25 μg/m³	—	—
Visibility reducing particles	8 hour (10:00 a.m. to 6:00 p.m. PST)	Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70%	—	—

Source: CARB 2016.

Notes: μg/m³ = micrograms per cubic meter; CO = carbon monoxide; mg/m³= milligrams per cubic meter; NO_2 = nitrogen dioxide; O_3 = ozone; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns; ppm = parts per million by volume; SO_2 = sulfur dioxide.

[a] California standards for O_3, CO, SO_2 (1-hour and 24-hour), NO_2, suspended particulate matter (PM_{10}, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, NO_2, SO_2, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration greater 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the EPA Administrator signed the notice for the final rule to revise the primary and secondary NAAQS for O_3. The EPA is revising the levels of both standards from 0.075 ppm to 0.070 ppm and retaining their indicators (O_3), forms (fourth-highest daily maximum, averaged across 3 consecutive years) and averaging times (8 hours). The EPA is in the process of submitting the rule for publication in the Federal Register. The final rule will be effective 60 days after the date of publication in the Federal Register. The lowered national 8-hour standards are reflected in the table.

[g] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour SO_2 standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

Toxic Air Contaminants

The state Air Toxics Program was established in 1983 under AB 1807 (Tanner). The California TAC list identifies more than 700 pollutants, of which carcinogenic and non-carcinogenic toxicity criteria have been established for a subset of these pollutants pursuant to the California Health and Safety Code. In accordance with AB 2728, the state list includes the (federal) HAPs. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources; however, AB 2588 does not regulate air toxics emissions. TAC emissions from individual facilities are quantified and prioritized. "High-priority" facilities are required to perform a health risk assessment, and if specific thresholds are exceeded, are required to communicate the results to the public in the form of notices and public meetings.

CARB approved a comprehensive Diesel Risk Reduction Plan in 2000 to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines. The regulation is anticipated to

result in an 80% decrease in statewide diesel health risk in 2020 as compared with the diesel risk in 2000. Additional regulations apply to new trucks and diesel fuel, including the On-Road Heavy Duty Diesel Vehicle (In-Use) Regulation, the On-Road Heavy Duty (New) Vehicle Program, the In-Use Off-Road Diesel Vehicle Regulation, and the New Off-Road Compression-Ignition (Diesel) Engines and Equipment program. All of these regulations and programs have timetables by which manufacturers must comply and existing operators must upgrade their diesel powered equipment. Several Airborne Toxic Control Measures that reduce diesel emissions including In-Use Off-Road Diesel-Fueled Fleets (13 CCR 2449 et seq.) and In-Use On-Road Diesel-Fueled Vehicles (13 CCR 2025). Despite these reduction efforts, CARB recommends that proximity to sources of diesel particulate matter (DPM) emissions be considered in the sitting of new sensitive land uses. The *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB 2005) is intended to give guidance to local governments in the sitting of sensitive land uses near sources of air pollution. Specifically, this document focuses on risks from emissions of DPM and establishes recommended sitting distances of sensitive receptors.

Sierra Club v County of Fresno

The California Supreme Court's *Sierra Club v. County of Fresno* decision (referred to herein as the Friant Ranch decision) (issued on December 24, 2018) addresses the need to correlate mass emission values for criteria air pollutants to specific health consequences, and contains the following direction from the California Supreme Court: "The EIR must provide an adequate analysis to inform the public how its bare numbers translate to create potential adverse impacts or it must explain what the agency does know and why, given existing scientific constraints, it cannot translate potential health impacts further." (Sierra Club v. County of Fresno 2018.)

Local Regulations

Northern Sierra Air Quality Management District

The NSAQMD is the primary agency responsible for planning to meet federal and state ambient air quality standards in Nevada, Plumas and Sierra counties. The NSAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventories and air quality management planning documents, and conducts source testing and inspections. NSAQMD rules and regulations applicable to the proposed project include the following:

> **Rule 205 Nuisance:** This rule prohibits discharge of air contaminants or other material from any source 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 to have natural tendency to cause injury or damage to business or property.

Rule 207 Particulate Matter: This rule prohibits the release or discharge of particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas as standards conditions into the atmosphere from any source or single processing unit, exclusive of sources emitting combustion contaminants only.

Rule 226 Dust Control: This rule requires the submittal of a Dust Control Plan to the NSAQMD for approval prior to any surface disturbance, including clearing of vegetation.

Rule 227 Cutback and Emulsified Asphalt Paving Materials: This rule restricts the discharge of VOCs caused by the use or manufacture of Cutback or Emulsified asphalts for paving, road construction or road maintenance, unless such manufacture or use complies with the provisions of the rule.

Rule 904 Asbestos Airborne Toxic Control Measure Asbestos-Containing-Serpentine: This rule incorporates by reference Title 17, Section 93106, of the California Code of Regulations in its entirety.

Grass Valley General Plan

The Land Use (LU) element, Circulation (C) element, and Conservation and Open Space (COS) element contain goals (G), objectives (O), policies (P) and implementation measures (I) to reduce emissions and improve air quality. Most of these goals, objectives, policies and implementation measures focus on promoting infill development, mixed use developments, and alternative means of transportation to reduce the amount of vehicles on the road and the distance required to access goods and services. The following goals, objectives, policies and implementation measures are applicable to the proposed project:

2-LUG: Promote infill as an alternative to peripheral expansion where feasible.

3-LUG: In areas of new development, plan for diversity of land uses and housing types, including mixed use developments.

6-LUG: Promote a jobs/housing balance within the Grass Valley region in order to facilitate pleasant, convenient and enjoyable working conditions for residents, including opportunities for short home to work journeys.

4-LUO: Reduction in environmental impacts associated with peripheral growth.

15-LUO: Reduction in the number of vehicle miles driven.

5-LUP: Actively market infill and available parcels during contracts with developers and community members.

6-LUP: Develop a more specific development strategy for identified infill parcels following General Plan adoption.

7-LUP: Utilize California Redevelopment Law to provide incentives to infill development.

8-LUP: Encourage and facilitate mixed-use developments on infill sites.

9-LUP: Provide for higher residential densities on infill site and in the Downtown area.

23-LUP: Encourage mixed use developments incorporating a variety of densities on infill sites and in areas proposed for annexation.

1-CG: Provide a circulation system that utilizes a variety of transportation modes, including alternative means of transportation.

2-CG: Ensure that streets and roadway improvements complement and support land use goals, objectives, policies, and plans.

5-CO: Convenient, safe and functional facilities for pedestrians, bicyclists and equestrians.

6-CP: Locate transit stops and park and ride facilities near freeway interchanges and in conjunction with higher density residential and mixed-use developments.

8-CP: Incorporate separated, non-motorized paths in street cross-section designs whenever feasible.

6-COSG: Assure compliance with and understanding of air and water quality regulations and standards.

16-COSO: Inclusion of air and water quality considerations in land use decisions rendered by the Planning Commission and City Council.

22-COSP: Implement circulation/transportation measures designed to reduce reliance on the automobile.

10.3 IMPACTS

Methods of Analysis

This section identifies and discusses the environmental impacts resulting from the proposed project and suggests mitigation measures to reduce the level of impact. A detailed discussion of mitigation measures is also included in this section.

Development of the proposed project could potentially be detrimental to air quality during both construction and operation phases. Construction activities would result in criteria pollutant emissions from site grading activities, construction of infrastructure, application of architectural coatings, and vehicle and construction equipment exhaust. Proposed project operation would result in criteria pollutant emissions primarily from vehicular sources; however, landscape maintenance equipment, heating sources (e.g., natural gas heaters) and other miscellaneous activities would also

generate pollutant emissions. The CalEEMod land use and emissions modeling program was used to estimate air pollutant emissions that would be generated during construction and operation of the proposed project.

Significance Criteria

Based on the guidance in Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), the project would have a significant impact on air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan?
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed the quantitative thresholds for ozone precursors).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.

In addition, Appendix G of the CEQA Guidelines indicates that where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to determine whether the proposed project would have a significant impact on air quality. The NSAQMD has developed a tiered approach to significance levels; a project with emissions qualifying it for Level A thresholds should require the most basic mitigations. Projects which qualify for Level B should require more extensive mitigations, and subsequently, those projects which qualify for Level C should require the most extensive application of mitigations. The tiered thresholds for Levels A, B, and C are given in Table 10-3 for a project's estimated emissions of criteria pollutants in pounds per day. The emissions-based thresholds for O_3 precursors are intended to serve as a surrogate for an "O_3 significance threshold" (i.e., the potential for adverse O_3 impacts to occur). This approach is used because O_3 is not emitted directly (see the discussion of O_3 and its sources in Section 10.1) and the effects of an individual project's emissions of O_3 precursors (ROG and NO_x) on O_3 levels in ambient air cannot be determined through air quality models or other quantitative methods.

Table 10-3
Northern Sierra Air Quality Management District Emission Significance Thresholds

Threshold Level	ROG	NO_x	PM_{10}
	Pounds per Day		
Level A Thresholds	<24	<24	<79
Level B Thresholds	24–136	24–136	79–136
Level C Thresholds	>136	>136	>136

Notes: ROG = reactive organic gas; NO_x = oxides of nitrogen; PM_{10} = particulate matter with an aerodynamic diameter less than or equal to 10 microns.
Source: NSAQMD 2016.

If emissions for NO_x, ROG, and/or PM_{10} exceed 136 pounds per day (Level C), then there is a significant impact; below Level C the impact would be potentially significant. The NSAQMD guidelines suggest that projects with higher emissions (Level C Thresholds) should automatically mitigate more emissions, quantitatively, than would a lower impact project (Level A). Also according to the guidelines, if a new project is unable to provide adequate on-site mitigation of their long-term air quality impacts, an off-site mitigation program may be necessary.

The NSAQMD established their thresholds of significance for CEQA purposes in order to achieve and maintain the NAAQS and CAAQS. Since an AAQS is based on maximum pollutant levels in outdoor air that would not harm the public's health, and air district thresholds pertain to attainment of the AAQS, this means that a project that complies with the thresholds established by a local air district, such as the NSAQMD, would not result in adverse effects to human health.

Impact Analysis

Impact 10-1: Would the project conflict with or obstruct implementation of the applicable air quality plan?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Western Nevada County, which includes the project area, is designated nonattainment for the federal and state O_3 standards. The County is also nonattainment for the state PM_{10} standard. As a nonattainment area, the NSAQMD prepared the *Reasonably Available Control Technology (RACT) State Implementation Plan (SIP) for Western Nevada County 8-Hour Ozone Non-Attainment Area*, which is a federally enforceable air quality attainment plan for western Nevada County designed to reduce emissions of O_3 precursors (ROG and NO_x) to attain the federal ozone standard by the earliest practicable date, in accordance with the Clean Air Act.

If a project proposes development that is greater than that anticipated in the local plan's growth projections, the project might be in conflict with the SIP and may contribute to a potentially significant cumulative impact on air quality.

Alternative A

Under Alternative A the project proposes to construct 90 units (20 one bedroom, 50 two bedroom, and 20 three bedroom). Based on the average household size of 2.04, the proposed project would add approximately 184 people to the City. According to the City's Housing Element, the population of Grass Valley increased by approximately 15% between 2000 and 2010, with an average annual growth rate of 1.5%. In 2010, the U.S. Census documented the population Grass Valley as 12,860, which rose to 13,041 by 2018 (Department of Finance 2018). Implementation of the project would result in a total population of 13,225, a 1.41% increase over the 2018 population. Population growth since 2012 has been flat, with some years showing a slight (fewer than 30 people) increase and some years showing a slight decrease. Thus, to project population in the year 2020 (the year in which the project is assumed to be fully built out), the average annual growth rate identified in the Housing Element for the period between 2000 and 2010 was used. Thus, the City is estimated to have a population of 13,431 in 2020 without construction of Alternative A and 13,615 with construction of this alternative. Alternative A would represent the equivalent of a single year of population growth. Given the flat population growth since 2012, this slight increase in growth would not result in the City exceeding historic average growth rate or reaching a total population that is greater than the estimated population range in the City's General Plan, including the Housing Element. Thus, the project would not result in regional growth that is not accounted for within the SIP and as such, would not conflict with the projected emission trends provided in the SIP. Therefore, under Alternative A the project would be consistent at a regional level with the air quality attainment plan. Impacts would be less than significant.

Alternative B

Alternative B proposes to construct 171 units (38 one bedroom, 95 two bedroom, and 38 three bedroom). Based on the average household size in the City of 2.04 people (City of Grass Valley 2014), Alternative B would add approximately 349 people to the City.

Based on the year 2018 population of 13,041 people (Department of Finance 2018), construction of Alternative B would raise the City's population to 13,390 people if it were fully built out immediately. This would be a 2.7% increase compared to the existing population. With the assumed population in 2020 of 13,431 in 2020 without construction of Alternative B, this alternative would lead to a total city-wide population of 13,780. Given the relatively flat population growth in the City since 2012, this slight increase in growth would not result in the City exceeding historic average growth rate or reaching a total population that is greater than the estimated population range in the City's General Plan, including the Housing Element. The population

increase of approximately 2.7% does not represent a substantial increase and would not result in regional growth that is not accounted for within the SIP. As such, this impact would be less than significant because the growth accommodated by the proposed project under Alternative B would not conflict with the projected emission trends provided in the SIP and the project would be consistent at a regional level with the air quality attainment plan.

Impact 10-2: Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measures 10a and 10b	Mitigation Measures 10a and 10b
Significance after mitigation:	Less than significant	Less than significant

Alternative A

Construction

Construction of the project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and, for dust, the prevailing weather conditions. Fugitive dust (PM_{10} and $PM_{2.5}$) emissions would primarily result from grading and site preparation activities. NO_x and CO emissions would primarily result from the use of construction equipment and motor vehicles.

Emissions from the construction of the proposed project were estimated using CalEEMod. Specific construction schedule sequencing and subphases for the proposed project have not yet been determined; therefore, a conceptual construction schedule was developed for the purpose of air quality modeling as shown in Table 10-4.

Table 10-4
Construction Schedule

Phase Type	Start Date	End Date	Number of Days/Week	Total Days
Site Preparation	07/01/2019	2019/07/12	5	10
Grading/Utilities	07/13/2019	2019/12/20	5	115
Laying Rock Base	12/21/2019	2020/01/17	5	20
Paving	01/18/2020	2020/01/31	5	10
Building Construction (Non-Residential)	02/01/2020	2020/08/04	5	132
Architectural Coating (Non-Residential)	06/01/2020	2020/08/04	5	47
Building Construction (Residential)	08/05/2020	2021/02/04	5	132
Architectural Coating (Residential)	12/01/2020	2021/02/04	5	48

Source: Appendix I.

Table 10-5 presents the general construction equipment mix used for the air pollutant emissions modeling of the proposed project. The equipment mix was generally followed for all construction modeling scenarios. For this analysis, it was assumed that heavy construction equipment would be operating at the site for approximately 8 hours a day (or less), 5 days a week (22 days per month), during project construction. However, the construction phases, construction equipment, and equipment hours of operation varied depending on the project component. Default construction worker, vendor trips, and trip lengths as provided in CalEEMod were used with the exception of the trips necessary to remove excavated soil from the site. The modeling inputs reflect an assumption that 300 one-way trips for soil off-haul would occur during the grading phase. Specific CalEEMod assumptions for each model scenario, including quantity of equipment, are provided in Appendix I.

Table 10-5
Construction Scenario Assumptions

Construction Phase	Average Daily Worker One-Way Trips	Average Daily Vendor One-Way Trips	Total Haul Truck One-Way Trips	Equipment	Quantity
Site Preparation	18	0	0	Rubber-Tired Dozers	3
				Tractors/Loaders/Backhoes	4
Grading/Utilities	24	0	300	Excavators	2
				Graders	1
				Rubber-Tired Dozers	1
				Scrapers	2
				Tractors/Loaders/Backhoes	2
				Trenchers	1
Laying Rock Base	18	0	0	Rubber-Tired Dozers	3
				Tractors/Loaders/Backhoes	4
Paving	16	0	0	Pavers	2
				Paving Equipment	2
				Rollers	2
Building construction (Non-Residential)	216	92	0	Cranes	1
				Forklifts	3
				Generator Sets	1
				Tractors/Loaders/Backhoes	3
				Welders	1
Architectural coating (Non-Residential)	44	0	0	Air Compressors	1
Building construction (Residential)	66	0	0	Cranes	1
				Forklifts	3
				Generator Sets	1
				Tractors/Loaders/Backhoes	3
				Welders	1

Table 10-5
Construction Scenario Assumptions

Construction Phase	Average Daily Worker One-Way Trips	Average Daily Vendor One-Way Trips	Total Haul Truck One-Way Trips	Equipment	Quantity
Architectural coating (Residential)	14	0	0	Air Compressors	1

Source: Appendix I

Implementation of the proposed project would generate air pollutant emissions from entrained dust, off-road equipment, vehicle emissions, architectural coatings, and asphalt pavement application. Entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, primarily during the grading and site preparation phases, resulting in PM_{10} and $PM_{2.5}$ emissions. The proposed project is subject to NSAQMD Rule 226, Dust Control (NSAQMD 2016), which requires the submittal and approval of a Dust Suppression Control Plan to the NSAQMD prior to the disturbance of any topsoil. Compliance with Rule 226 would limit fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities. To account for dust control measures in the calculations, it was assumed that the active sites would be watered at least two times daily, resulting in an approximately 55% reduction of particulate matter. Internal combustion engines used by construction equipment, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, NO_x, CO, PM_{10}, and $PM_{2.5}$. Table 10-6 shows the estimated maximum daily construction emissions associated with the construction of Alternative A. Complete details of the emissions calculations are provided in Appendix I.

Table 10-6
Maximum Daily Construction Emissions – Alternative A

Year	ROG	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
	Pounds per Day					
2019	5.4	59.5	37.9	<0.1	10.8	6.7
2020	56.6	42.6	38.6	<0.1	10.6	6.6
2021	37.8	20.6	23.3	<0.1	2.1	1.3
Maximum Daily Emissions	*56.6*	*59.5*	*38.6*	*<0.1*	*10.8*	*6.7*
NSAQMD Significance Threshold Level[b]	*Level B*	*Level B*	*NA*	*NA*	*Level A*	*NA*
Significant (Yes/No or Potentially)?[c]	Potentially	Potentially	No	No	Potentially	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns; NSAQMD = Northern Sierra Air Quality Management District.

[a] A control efficiency of 55% was included when calculating the emissions of PM_{10} and $PM_{2.5}$ to account for the fugitive dust and particulate matter emission controls in Rule 226.

[b] The NSAQMD Threshold Levels are shown in Table 2.

[c] Significance is based on Table 2 thresholds. For Level A or B criteria, they are considered potentially significant. If the emissions exceed the Level C threshold, they are considered significant.

Source: Appendix I

As shown in Table 10-6, daily construction emissions of ROG, NO_x, and PM_{10} from development of Alternative A would be potentially significant (Level A or B) according to the NSAQMD significance criteria therefore mitigation is required. The NSAQMD does not have significance criteria for SO_2, CO, or $PM_{2.5}$. Mitigation Measure 1 has been included per the NSAQMD guidelines in order to reduce overall impacts during construction to a less-than-significant impact.

Operations

Operation of the project would produce ROG, NO_x, CO, SO_x, PM_{10}, and $PM_{2.5}$ emissions from area sources, including natural gas combustion, use of consumer products, and motor vehicle trips to project land uses. The project would primarily impact air quality through vehicular traffic generated by residents, employees, and visitors. The estimation of proposed operational emissions was based on proposed land use defaults and total area (i.e., square footage) of buildings and residential dwelling units that would be in operation by 2022 (first year of operation).

Area Sources

CalEEMod was used to estimate operational emissions from area sources, which includes emissions from consumer product use, architectural coatings, and landscape maintenance equipment. Emissions associated with natural gas usage are calculated in the building energy use, which is described in the following energy source section.

Consumer products are chemically formulated products used by household and institutional consumers, including detergents; cleaning compounds; polishes; floor finishes; cosmetics; personal care products; home, lawn, and garden products; disinfectants; sanitizers; aerosol paints; and automotive specialty products. Other paint products, furniture coatings, or architectural coatings are not considered consumer products (CAPCOA 2017). Consumer product VOC emissions are estimated in CalEEMod for nonresidential land uses based on the floor area of buildings and the default factor of pounds of VOC emissions per building square foot per day.

VOC off-gassing emissions result from evaporation of solvents contained in surface coatings such as in paints and primers using during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of surface coatings based on the VOC emission factor, building square footage, assumed fraction of surface area, and reapplication rate. The VOC emission factor is based on the VOC content of the surface coatings. Consistent with CalEEMod defaults, it is assumed that the surface area for painting equals 2.0 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating. For areas that include pavement, the architectural coating area is assumed to be 6% of the total square footage, consistent with the supporting CalEEMod studies provided as an appendix to the CalEEMod User's Guide (CAPCOA 2017). The model default reapplication rate of 10% of area per year is assumed. Consistent with typical construction practices, it is assumed that anticipated that interior paint would not exceed

flat coating limit, 50 grams per liter (g/L) VOC and exterior paint would not exceed non-flat coating limits, 100 g/L VOC.

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, blowers, trimmers, chain saws, and hedge trimmers. The emissions associated with landscape equipment use are estimated based on CalEEMod default values for emission factors (grams per square foot of building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days as a conservative measure. For Nevada County, the average annual summer days are estimated to be 180 days (CAPCOA 2017).

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod since criteria pollutant emissions occur at the site of the power plant, which is typically off site. For the proposed project, the estimated energy use was based on CalEEMod default values. CalEEMod 2016.3.2 uses the 2016 version of Title 24 as a basis for energy modelling. The proposed project would be required to meet the most recent updates to the Title 24 standards.

Vehicle Traffic

CalEEMod was used to estimate daily emissions from proposed vehicular sources. CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, and trip distances, were conservatively used for the model inputs. Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. Emission factors representing the vehicle mix and emissions for 2022 (the first full year of operation) were used to estimate emissions associated with full buildout of the proposed project.

Table 10-7 presents the maximum daily emissions associated with operation of Alternative A. The values shown are the maximum summer or winter daily emissions results from CalEEMod which are compared with the NSAQMD significance thresholds. Details of the emission calculations are provided in Appendix I.

Table 10-7
Maximum Daily Operational Criteria Air Pollutant Emissions – Alternative A

Source	ROG	NOx	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area Sources	9.4	1.4	8.1	<0.1	0.2	0.2
Energy	0.1	0.6	0.4	<0.1	<0.1	<0.1
Motor Vehicles	23.4	103.0	185.7	0.4	24.7	6.9
Total Emissions	32.9	105.0	194.2	0.4	24.9	7.1
NSAQMD Significance Threshold Level[1]	*Level B*	*Level B*	*NA*	*NA*	*Level A*	*NA*
Significant (Yes/No or Potentially)?[2]	Potentially	Potentially	No	No	Potentially	No

Source: Appendix I.
Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns; NSAQMD = Northern Sierra Air Quality Management District.
1 The NSAQMD Threshold Levels are shown in Table 10-2.
2 Significance is based on Table 10-2 thresholds. For Level A or B criteria, they are considered potentially significant. If the emissions exceed the Level C threshold, they are considered significant.
These estimates reflect implementation of Rule 218, which limits the volatile organic compound (VOC) content of architectural coatings to 100 g/L.

As shown in Table 10-7, estimated operational emissions of ROG, NO_x, and PM_{10} would not exceed the NSAQMD's Level C significance threshold of 137 pounds per day during either the summer or winter months. However, emissions of ROG, NO_x, and PM_{10} are projected to exceed the NSAQMD's Level A significance threshold. According to NSAQMD guidance, emissions exceeding the Level A significance threshold would contribute to existing nonattainment conditions and may also interfere with the region's ability to maintain ambient air quality standards if no mitigation is implemented. This impact would be considered potentially significant and mitigation is required. Implementation of Mitigation Measure 10b would reduce operational emissions under Alternative A to below the Level B threshold; this would reduce air quality impacts to a less-than-significant level.

Health Effects of Criteria Air Pollutants

Construction and operation of the proposed project would result in emissions that would exceed the NSAQMD Level A significance thresholds for ROG, NO_x, or PM_{10}. As previously discussed, the NSAQMD considers projects that would exceed the Level A significance thresholds to contribute to existing nonattainment conditions and may also interfere with the region's ability to maintain ambient air quality standards if no mitigation is implemented. ROG emissions would be associated with motor vehicles, construction equipment, and architectural coatings. However, implementation of Mitigation Measures 10a and 10b would reduce project-generated ROG emissions to a less-than-significant level. In addition, the VOCs in architectural coatings generally are of relatively low toxicity.

ROG and NO_x are precursors to O_3, for which the MCAB is designated as nonattainment with respect to the NAAQS and CAAQS. As discussed previously, the health effects associated with O_3 are generally associated with reduced lung function. The contribution of ROG and NO_x to regional ambient O_3 concentrations is the result of complex photochemistry. The increases in O_3 concentrations in the MCAB due to O_3 precursor emissions tend to be found downwind from the source location to allow time for the photochemical reactions to occur. However, the potential for exacerbating excessive O_3 concentrations would also depend on the time of year that the ROG emissions would occur because exceedances of the O_3 NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. The holistic effect of a single project's emissions of O_3 precursors is speculative due to the lack of quantitative methods to assess this impact. Thus, a project's ROG and NO_x emissions are evaluated in the context of the NSAQMD significance thresholds, which define the levels of emissions that can occur without causing or contributing to violations of the NAAQS and CAAQS. In turn, the NAAQS and CAAQS define the pollutant concentrations above which adverse health effects are expected to occur. ROG and NO_x emissions associated with proposed project construction and/or operation would exceed the NSAQMD Level A thresholds and would therefore require implementation of Mitigation Measures 10a and 10b. After implementation of mitigation, emissions would be below the Level A thresholds and thus it is not anticipated the proposed project would contribute to regional O_3 concentrations and the associated health effects.

Construction and operation of the proposed project would not contribute to exceedances of the NAAQS and CAAQS for NO_2. Health effects that result from NO_2 and NO_x include respiratory irritation, which could be experienced by nearby receptors during the periods of heaviest use of off-road construction equipment. However, off-road construction equipment would be operating at various portions of the project site and would not be concentrated in one portion of the site at any one time. Construction and operation of the proposed project would not require use of any stationary sources (e.g., diesel generators, boilers) that would create substantial, localized NO_x impacts. Therefore, the proposed project is not anticipated to result in potential health effects associated with NO_2 and NO_x because the emissions would not create or contribute to a violation of the NAAQS or CAAQS, which define the concentration of NO_2 above which adverse health effects are expected.

Construction and operation of the proposed project would also not exceed NSAQMD Level A threshold for PM_{10} after implementation of mitigation and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the MCAB from coming into attainment for these pollutants. The proposed project would also not result in substantial DPM emissions during construction and operation, and therefore, would not result in significant health effects related to DPM exposure. Additionally, the proposed project would implement dust control strategies and be required to comply with NSAQMD Rule 226, which limits the amount of fugitive dust generated during construction. Therefore, it is not anticipated that the proposed project would

result in potential health effects associated related to particulate matter because the project would not create concentrations of particulate matter that exceed the NAAQS or CAAQS.

Alternative B

Construction

Emissions associated with construction and operation of Alternative B were calculated using the CalEEMod version 2016.3.2. The construction model inputs are described in more detail under the Alternative A discussion of this impact criterion. In summary, the Alternative B was assumed to be constructed from 2019 through 2021, applying the same construction parameters provided in the previous Alternative A discussion with exception to the specific Alternative B land use quantities. CalEEMod was also used to estimate emissions resulting from buildout of Alternative B using the same assumptions described in the Alternative A discussion. The first full year after buildout of the proposed project was assumed to be 2022.

Table 10-8 shows the estimated maximum daily construction emissions associated with the construction of Alternative B. Complete details of the emissions calculations are provided in Appendix I.

Table 10-8
Maximum Daily Construction Emissions – Alternative B

Year	ROG	NO_x	CO	SO_x	PM_{10}[a]	$PM_{2.5}$[a]
	Pounds per Day					
2019	5.4	59.5	37.9	<0.1	10.8	6.7
2020	70.6	42.6	38.2	<0.1	10.6	6.6
2021	70.3	20.6	23.3	<0.1	2.1	1.3
Maximum Daily Emissions	*70.6*	*59.5*	*38.2*	*<0.1*	*10.8*	*6.7*
NSAQMD Significance Threshold Level[b]	*Level B*	*Level B*	*NA*	*NA*	*Level A*	*NA*
Significant (Yes/No or Potentially)?[c]	Potentially	Potentially	No	No	Potentially	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns; NSAQMD = Northern Sierra Air Quality Management District.

[a] A control efficiency of 55% was included when calculating the emissions of PM_{10} and $PM_{2.5}$ to account for the fugitive dust and particulate matter emission controls in Rule 226.

[b] The NSAQMD Threshold Levels are shown in Table 2.

[c] Significance is based on Table 2 thresholds. For Level A or B criteria, they are considered potentially significant. If the emissions exceed the Level C threshold, they are considered significant.

Source: Appendix I

As shown in Table 10-8, daily construction emissions of ROG, NO_x, and PM_{10} from development of Alternative B would be potentially significant (Level A or B) according to the NSAQMD significance criteria therefore mitigation is required. The NSAQMD does not have significance

criteria for SO_2, CO, or $PM_{2.5}$. Mitigation Measure 10a has been included per the NSAQMD guidelines in order to reduce overall impacts during construction to a less-than-significant impact.

Operation

Table 10-9 presents the maximum daily emissions associated with operation of Alternative A. The values shown are the maximum summer or winter daily emissions results from CalEEMod, which are compared with the NSAQMD significance thresholds. Details of the emission calculations are provided in Appendix I.

Table 10-9
Maximum Daily Operational Criteria Air Pollutant Emissions – Alternative B

Sources	ROG	NO_x	CO	SO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day					
Area Sources	10.7	2.7	15.3	<0.1	0.3	0.3
Energy	0.1	0.7	0.4	<0.1	0.1	0.1
Motor Vehicles	25.0	111.0	201.1	0.4	27.4	7.6
Total Emissions	35.8	1114.4	216.8	0.4	27.8	8.0
NSAQMD Significance Threshold Level[1]	*Level B*	*Level B*	*NA*	*NA*	*Level A*	*NA*
Significant (Yes/No or Potentially)?[2]	Potentially	Potentially	No	No	Potentially	No

Notes: ROG = reactive organic gases; NO_x = oxides of nitrogen; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = particulate matter with an aerodynamic diameter equal to or less than 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter equal to or less than 2.5 microns; NSAQMD = Northern Sierra Air Quality Management District.

1 The NSAQMD Threshold Levels are shown in Table 10-2.

2 Significance is based on Table 10-2 thresholds. For Level A or B criteria, they are considered potentially significant. If the emissions exceed the Level C threshold, they are considered significant.
These estimates reflect implementation of Rule 218, which limits the volatile organic compound (VOC) content of architectural coatings to 100 g/L.

Source: Appendix I

As shown in Table 10-9, estimated operational emissions of ROG, NO_x, and PM_{10} would not exceed the NSAQMD's Level C significance threshold of 137 pounds per day during either the summer or winter months. However, emissions of ROG, NO_x, and PM_{10} are projected to exceed the NSAQMD's Level A significance threshold. According to NSAQMD guidance, emissions exceeding the Level A significance threshold would contribute to existing nonattainment conditions and may also interfere with the region's ability to maintain ambient air quality standards if no mitigation is implemented. This impact would be considered potentially significant and mitigation is required. Implementation of Mitigation Measure 10b would reduce operational emissions under Alternative A to below the Level B threshold; this would reduce air quality impacts to a less-than-significant level.

Health Effects of Criteria Air Pollutants

Similar to the Alternative A analysis discussed previously within this impact criterion, implementation of Mitigation Measures 10a and 10b would ensure that air pollutant emissions during construction and operation of Alternative B would not exceed the NSAQMD Level C significance thresholds for the maximum allowable volume of ROG, NO_x, and PM_{10} emissions. Therefore, the proposed project is not anticipated to result in adverse health effects associated with the criteria pollutants of ROG, NO_x, and PM_{10} because it would not create concentrations of these pollutants that exceed the NAAQS or CAAQS.

Impact 10-3: Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project area is in nonattainment under an applicable federal or state ambient air quality standard (including the release of emissions that exceed quantitative thresholds for ozone precursors)?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

In analyzing cumulative impacts from the project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the County is designated as nonattainment for the CAAQS and NAAQS. If the proposed project does not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from the project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the proposed project would only be considered to have a significant cumulative impact if the project's contribution accounts for a significant proportion of the cumulative total emissions (i.e., it represents a "cumulatively considerable contribution" to the cumulative air quality impact).

Western Nevada County has been designated as a federal nonattainment area for O_3 and a state nonattainment area for O_3 and PM_{10}. PM_{10} and $PM_{2.5}$ emissions associated with construction generally result in near-field impacts. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the County. As discussed previously, the emissions of all criteria pollutants would be below the Level C significance thresholds. Construction would be short term and temporary in nature. Once construction is completed, construction-related emissions would cease. Any change in operational emissions associated with the proposed project would be negligible and would not result in a significant impact. Furthermore, implementation of Mitigation Measures 10a and

10b would reduce air quality impacts from construction and operations. As such, the proposed project would result in less-than-significant cumulative impacts to air quality relative to operational emissions.

As previously noted, the proposed project would not result in regional growth not accounted for within the SIP. Specifically, proposed project would not generate operational vehicle trips and would not conflict with the projected emission trends provided in the SIP. As a result, the proposed project would not result in a cumulatively considerable contribution to regional O_3 concentrations. Cumulative impacts would be less than significant.

Impact 10-4: Would the project expose sensitive receptors to substantial pollutant concentrations?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The project would have the potential of resulting in localized impacts from emissions of pollutants identified by the state and federal government as TACs or HAPs, respectively, as well as CO hotspots.

Health Impacts of Toxic Air Contaminants

Construction of the proposed project would involve the use of diesel-fueled vehicles used during site preparation, grading, building construction, paving, and application of architectural coatings. DPM is the primary TAC of concern during these construction activities. Notably, on-road diesel trucks traveling to and from the proposed project would be less of a concern because they would not stay on the site for long durations. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce DPM and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to five minutes; electric auxiliary power units should be used whenever possible.

According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the project. Since the proposed project involves construction activities in several areas across the site, project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs. Due to the relatively short period of exposure at any individual sensitive receptor and minimal particulate emissions generated on site, TACs generated during construction would not be expected to result in concentrations causing significant health risks.

According to the NSAQMD, no naturally occurring asbestos (NOA) has been mapped in the project area. However, as discussed in Chapter 15, Hazards and Hazardous Materials, if NOA is identified during earthwork, the NSAQMD must be notified no later than the following business day and compliance with the statewide *Asbestos Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations* (Asbestos ATCM) would be required. Also, in regards to surfacing materials, the project is required to comply with the statewide *Asbestos Airborne Toxic Control Measure for Surfacing Applications* (Surfacing ATCM), which prohibits the use of material containing 0.25% asbestos or greater for surfacing of areas such as trails, pedestrian walkways, and roads.

Health Impacts of Carbon Monoxide

The primary mobile-source criteria pollutant of local concern is CO. As noted previously, Nevada County is currently designated attainment for both state and national CO ambient air quality standards, and the County typically experiences low background CO concentrations.

To verify that the project would not cause or contribute to a violation of the CO standard, a screening evaluation of the potential for CO hotspots was conducted. The transportation impact analysis report (Appendix G) evaluated whether there would be a decrease in the level of service (LOS) (i.e., increased congestion) at the intersections affected by the proposed project. The potential for CO hotspots was evaluated based on the results of the traffic impact analysis. The California Department of Transportation (Caltrans) Institute of Transportation Studies *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol) (Caltrans 1997) was followed.

In accordance with the CO Protocol, CO hotspots are typically evaluated when (1) the LOS of an intersection or roadway decreases to LOS E or worse; (2) signalization and/or channelization is added to an intersection; and (3) sensitive receptors such as residences, schools, and hospitals are located in the vicinity of the affected intersection or roadway segment.

The proposed project's transportation impact analysis evaluated 18 intersections and 14 roadway segments. As determined by the transportation impact analysis, all intersections would operate at acceptable LOS during the AM and PM peak hours with implementation of project-related improvements (Appendix G). Therefore, the proposed project would not negatively affect the LOS of intersections in the project area and would not significantly contribute to a CO hotspot.

Impact 10-5: Would the project create objectionable odors affecting a substantial number of people?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. In general, odors are highest near the source, but disperse quickly resulting in a reduced off-site exposure. Sensitive receptors located proximate to the proposed construction sites may be affected. However, construction of the proposed project would use typical construction techniques in compliance with NSAQMD rules and any odors associated with proposed project construction activities would be temporary and would cease upon completion of construction. Therefore, impacts associated with odors during construction would be less than significant.

In regards to operations, the proposed project does not include not land uses typically associated with the generation of objectionable odors. Odors generated from operation of the proposed project would consist of vehicle exhaust generated by residents and employees or customers traveling to and from the project site, through the periodic use of landscaping or maintenance equipment and from the temporary storage of typical solid waste (refuse) associated with the project's (long-term operational) uses; however, these odors are not considered objectionable odors that would affect a substantial number of people. It is expected that project-generated refuse would be stored in covered containers and removed at regular intervals in compliance with the City's solid waste regulations. Therefore, impacts associated with odors generated from operations would be less than significant.

10.4 MITIGATION MEASURES

Mitigation Measure 10a: Prior to issuance of grading permits, the City of Grass Valley shall verify that construction contracts include requirements for construction contractor(s) to implement the following measures:

- Alternatives to open burning of vegetative material will be used unless otherwise deemed infeasible by the NSAQMD. Among suitable alternatives are chipping, mulching, or conversion to biomass fuel.
- Grid power shall be used (as opposed to diesel generators) for job site power needs where feasible during construction.
- Temporary traffic control shall be provided during all phases of the construction to improve traffic flow as deemed appropriate by local transportation agencies and/or Caltrans.
- Construction activities shall be scheduled to direct traffic flow to off-peak hours as much as practicable.
- Minimize active earthmoving and the generation of fugitive dust to the extent feasible when pedestrians walk by active project construction sites.

Mitigation Measure 10b: Prior to issuance of grading and building permits, the City of Grass Valley shall verify that building plans include provisions for the following measures to reduce air pollutant emissions throughout project operation:

- There shall be a limit of one wood-burning appliance per residence, and it shall be an EPA Phase II certified appliance. Also, each residence shall be equipped with a non-wood-burning source of heat.
- The project applicant shall provide, operate, and fund a green-waste drop-off site for residents.
- Streets shall be designed to maximize pedestrian access to transit stops.
- The project shall provide for pedestrian access between bus service and major transportation points within the project, and between separate sections of the project, where feasible.

10.5 REFERENCES CITED

13 CCR 2025. Regulation to Reduce Emissions of Diesel Particulate Matter, Oxides of Nitrogen and Other Criteria Pollutants, from In-Use Heavy-Duty Diesel-Fueled Vehicles.

13 CCR 2449–2449.3 and Appendix A. General Requirements for In-Use Off-Road Diesel-Fueled Fleets.

Caltrans (California Department of Transportation). 1997. Caltrans Institute of Transportation Studies *Transportation Project-Level Carbon Monoxide Protocol* (CO Protocol). 1997

CAPCOA (California Air Pollution Control Officers Association). 2017. *California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2*. Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. November 2017. Accessed November 2017. http://www.aqmd.gov/docs/default-source/caleemod/01_user-39-s-guide2016-3-2_15november2017.pdf?sfvrsn=4.

CARB (California Air Resources Board). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. April 2005.

CARB. 2016. "Ambient Air Quality Standards." Last updated May 4, 2016. Accessed June 20, 2016. Available at http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

CARB. 2018. "iADAM: Air Quality Data Statistics." Accessed August 20, 2018. http://www.arb.ca.gov/adam/topfour/topfour1.php.

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 23, 1999.

City of Grass Valley. 1999b. *City of Grass Valley General Plan Update Environmental Impact Report.* Prepared for the City of Grass Valley by Quad Knopf. August 1999.

City of Grass Valley. 2014. *2014–2019 Housing Element*. September 2014.

California Department of Finance. 2018. *Report E-1: Population Estimates for Cities, Counties, and the State January 1, 2017 and 2018*. May 1, 2018.

Quad Knopf. 1998. *Grass Valley General Plan Background Report*. Prepared November 1998.

NSAQMD (Northern Sierra Air Quality Management District). 2016. *Guidelines for Assessing and Mitigating Air Quality Impacts of Land Use Projects*.

Sierra Club v. County of Fresno. 2018. Case No. S219783. December 24, 2018. http://www.courts.ca.gov/opinions/documents/S219783A.PDF

CHAPTER 11
CLIMATE CHANGE

Development of the proposed Dorsey Marketplace (proposed project) is expected to generate greenhouse gas (GHG) emissions during construction and occupancy of the proposed project. This section addresses project impacts on climate change and analyzes the type and quantity of GHG emissions that would be generated by the development of the proposed project. Alternative A would provide for up to 90 apartment units, approximately 178,960 square feet of commercial space, and a 3,200-square-foot clubhouse. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and a 3,200-square-foot clubhouse.

Information used to prepare this section includes:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- California Emissions Estimator Model (CalEEMod) (Appendix I)

No comments were received in response to the Notice of Preparation regarding GHG emissions. The Notice of Preparation and letters received in response to it are provided in Appendix A.

11.1 ENVIRONMENTAL SETTING

The Greenhouse Effect and GHGs

Climate change refers to any significant change in measures of Earth's climate, such as temperature, precipitation, and wind patterns, lasting for an extended period of time (decades or longer). The Earth's temperature depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human-caused, can cause changes in Earth's energy balance, including variations in the sun's energy reaching Earth, changes in the reflectivity of Earth's atmosphere and surface, and changes in the greenhouse effect, which affects the amount of heat retained by Earth's atmosphere (EPA 2017a).

The greenhouse effect is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process, as follows: Short-wave radiation emitted by the sun is absorbed by the Earth, the Earth emits a portion of this energy in the form of long-wave radiation, and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature and creates a pleasant, livable environment on Earth. Human activities that emit additional GHGs to the atmosphere

increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperature to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales, and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century, and is the most significant driver of observed climate change (EPA 2017a; IPCC 2013). Human influence on the climate system is evident from the increasing GHG concentrations in the atmosphere, positive radiative forcing, observed warming, and improved understanding of the climate system (IPCC 2013). The atmospheric concentrations of GHGs have increased to levels unprecedented in the last 800,000 years, primarily from fossil fuel emissions and secondarily from emissions associated with land use changes (IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further in Potential Effects of Climate Change.

Greenhouse Gases

A GHG is any gas that absorbs infrared radiation in the atmosphere; in other words, GHGs trap heat in the atmosphere. As defined in California Health and Safety Code Section 38505(g) for purposes of administering many of the state's primary GHG emissions reduction programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3) (see also California Environmental Quality Act (CEQA) Guidelines Section 15364.5).[1] Some GHGs, such as CO_2, CH_4, and N_2O, occur naturally and are emitted into the atmosphere through natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, which are associated with certain industrial products and processes. The following paragraphs provide a summary of the most common GHGs and their sources.[2]

[1] Climate-forcing substances include GHGs and other substances such as black carbon and aerosols. This discussion focuses on the seven GHGs identified in California Health and Safety Code Section 38505, so impacts associated with other climate-forcing substances are not evaluated herein.

[2] The descriptions of GHGs are summarized from the Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report (IPCC 1995), IPCC's Fourth Assessment Report (2007), California Air Resources Board's "Glossary of Terms Used in GHG Inventories" (CARB 2017a), and U.S. Environmental Protection Agency's "Glossary of Climate Change Terms" (EPA 2016).

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities, and is the principal anthropogenic GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are the combustion of fuels such as coal, oil, natural gas, and wood, and changes in land use.

Methane. CH_4 is produced through both natural and human activities. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. N_2O is produced through natural and human activities, mainly through agricultural activities and natural biological processes, although fuel burning and other processes also create N_2O. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and using N_2O as a propellant (such as in rockets, racecars, and aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are powerful synthetic GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., chlorofluorocarbons (CFCs), hydrochlorofluorocarbon (HCFCs), and halons). The most prevalent fluorinated gases are the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances for many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, with HFCs, to the ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through the chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat-panel displays.

Chlorofluorocarbons. CFCs are synthetic chemicals that have been used as cleaning solvents, refrigerants, and aerosol propellants. CFCs are chemically unreactive in the lower atmosphere (troposphere), and the production of CFCs was prohibited in 1987 due to the chemical destruction of stratospheric ozone.

Hydrochlorofluorocarbons. HCFCs are a large group of compounds whose structure is very close to that of CFCs—containing hydrogen, fluorine, chlorine, and carbon atoms—but including one or more hydrogen atoms. Like HFCs, HCFCs are used in refrigerants and propellants. HCFCs were also used in place of CFCs for some applications; however, their use in general is being phased out.

Black Carbon. Black carbon is a component of fine particulate matter, which has been identified as a leading environmental risk factor for premature death. It is produced from the incomplete combustion of fossil fuels and biomass burning, particularly from older diesel engines and forest fires. Black carbon warms the atmosphere by absorbing solar radiation, influences cloud formation, and darkens the surface of snow and ice, which accelerates heat absorption and melting. Black carbon is short-lived and varies spatially, which makes it difficult to quantify its global warming potential. Diesel particulate matter emissions are a major source of black carbon and are toxic air contaminants that have been regulated and controlled in California for several decades to protect public health. Because of the California Air Resources Board's (CARB) regulations pertaining to diesel engines, diesel fuels, and burning activities, CARB estimates that annual black carbon emissions in California were reduced by 70% between 1990 and 2010, with 95% control expected by 2020 (CARB 2014).

Water Vapor. The primary source of water vapor is evaporation from the ocean, with additional vapor generated by sublimation (change from solid to gas) from ice and snow, evaporation from other water bodies, and transpiration from plant leaves. Water vapor is the most important, abundant, and variable GHG in the atmosphere, and maintains a climate that is necessary for life.

Ozone. Tropospheric ozone, which is created by photochemical reactions involving gases from both natural sources and human activities, acts as a GHG. Stratospheric ozone, which is created by the interaction between solar ultraviolet radiation and molecular oxygen (O_2), plays a decisive role in the stratospheric radiative balance. Depletion of stratospheric ozone due to chemical reactions that may be enhanced by climate change results in an increased ground-level flux of ultraviolet-B radiation.

Aerosols. Aerosols are suspensions of particulate matter in a gas emitted into the air through burning biomass (plant material) and fossil fuels. Aerosols can warm the atmosphere by absorbing and emitting heat, and can cool the atmosphere by reflecting light.

Global Warming Potential

Gases in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo (i.e., the reflection of radiation)) (EPA 2016). The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons (MT) of carbon dioxide equivalent (CO_2e).

The current version of the California Emissions Estimator Model (CalEEMod) (Version 2016.3.2) assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the IPCC Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the proposed project.

Contributions to Greenhouse Gas Emissions

United States Emissions. Per the U.S. Environmental Protection Agency's (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2016 (EPA 2018), total U.S. GHG emissions were approximately 6,511.3 million metric tons (MMT) CO_2e in 2016. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6% of total GHG emissions (5,310.9 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.5% of CO_2 emissions in 2016 (4,966.0 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2016 are higher by 2.4%, down from a high of 15.7% greater than 1990 levels in 2007. GHG emissions decreased from 2015 to 2016 by 1.9% (126.8 MMT CO_2e), and, overall, net emissions in 2016 were 11.1% less than 2005 levels (EPA 2018).

State of California Emissions. According to California's 2000–2016 GHG emissions inventory (2018 edition), California emitted 429.40 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018). The sources of GHG emissions in California include transportation, industrial uses, electric power production from both in-state and out-of-state sources, commercial and residential uses, agriculture, high GWP substances, and recycling and waste. The California GHG emissions source categories (as defined in CARB's 2008 Climate Change Scoping Plan: A Framework for Change (Scoping Plan) (CARB 2008)), and their relative contributions in 2016 are presented in Table 11-1.

Table 11-1
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.38	39%
Industrial uses[b]	89.61	21%
Electricity generation[c]	68.58	16%
Residential and commercial uses	39.36	9%
Agriculture	33.84	8%
High GWP substances	19.78	5%
Recycling and waste	8.81	2%
Totals	429.40	100%

Source: CARB 2018.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2016 California GHG inventory.

[a] Percentage of total has been rounded and total may not sum due to rounding.

[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.

[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e.

Neither the City of Grass Valley (City) nor Nevada County has adopted plans, policies, or regulations for the purpose of reducing GHG emissions. No official GHG inventory has been completed for the City.

Potential Effects of Human Activity on Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 *Intergovernmental Panel on Climate Change Synthesis Report* indicated that warming of the climate system is unequivocal, and since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice have, and rising sea levels (IPCC 2014).

In California, climate change impacts have the potential to affect sea level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, and electricity demand and supply (CCCC 2012). The primary effect of global climate change has been a 0.2°C rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or greater than current rates would induce more extreme climate changes during the twenty-first century than were observed during the twentieth century. A warming of about 0.2°C (0.36°F) per decade is projected, and there are identifiable signs that global warming could be taking place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by about 1.7°F from 1895 to 2011, and warming has been greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F greater than 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1 to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California, compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline of Sierra snowpack, which accounts for approximately half of the surface water storage in California and much of the state's water supply, by 30% to as much as 90% is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid-to-late twenty-first century in Central and, most notably, Southern California. By late-century, all projections show drying, and half of them suggest 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

Wildfire risk in California will increase as a result of climate change. Earlier snowmelt, higher temperatures and longer dry periods over a longer fire season will directly increase wildfire risk. Indirectly, wildfire risk will also be influenced by potential climate-related changes in vegetation and ignition potential from lightning. However, human activities will continue to be the biggest factor in ignition risk. It is estimated that the long-term increase in fire occurrence associated with a higher emissions scenario is substantial, with increases in the number of large fires statewide ranging from 58% to 128% greater than historical levels by 2085. Under the same emissions scenario, estimated burned area will increase by 57%–169%, depending on location (CCCC 2012).

Reduction in the suitability of agricultural lands in the state for traditional crop types may occur. While effects may occur, adaptation could allow farmers and ranchers to minimize potential negative effects on agricultural outcomes through adjusting timing of plantings or harvesting and changing crop types. Because the specific effects of climate change in the project area are uncertain, it would be speculative to predict which crop types and agricultural operations would be substantially affected.

Public health-related effects of increased temperatures and prolonged temperature extremes, including heat stroke, heat exhaustion, and exacerbation of existing medical conditions, could be particular problems for the elderly, infants, and those who lack access to air conditioning or cooled spaces (CNRA 2009).

A summary of current and future climate change impacts to resource areas in California, as discussed in the *Safeguarding California: Reducing Climate Risk* (CNRA 2014), is provided as follows.

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought, to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. For example, changes in weather patterns can foster longer growing periods for certain crops, but simultaneously increase the likelihood of pests. It is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated (CNRA 2014).

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. The preservation of California's unique biological heritage is of ever-increasing importance given the forecasted impacts associated with climate change.

Similar to the agricultural sector, there are a number of climate change challenges the biodiversity sector must contend with, on top of the ever-increasing pressures of habitat loss and fragmentation, population growth, pollution, plant and animal diseases, and other human-induced impacts. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shift and novel combinations of species; pathogens, parasites

and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss has occurs).

Habitat restoration, conservation, and resource management across California and through collaborative efforts amongst public, private and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate as a result of climate change, based on geographic region. As such, it is critical to ensure habitat corridors, linkages and connectivity are established to allow species the mobility to move from place to place as resources change over time. Continued collaborative efforts are required across agencies to ensure the health of existing habitat, wildlife, and the geographic extent of their existence required to support biodiversity (CNRA 2014).

Emergency Management. "Emergency management includes actions to prepare for, mitigate against, respond to and recover from emergencies and disasters that impact our communities, critical infrastructure and resources by lessoning the likelihood, severity and duration of the consequences of the incident" (CNRA 2014). "Hazard mitigation is any action taken to reduce or eliminate the long-term risk to human life and property from natural or man-made hazards" (CNRA 2014). In California, preparing, mitigating, and responding to and/or recovering from a natural disaster usually is done in the context of an earthquake, wildfire or severe flood event.

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex integrated system. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants since power plant cooling is less efficient at higher ambient temperatures. Natural gas infrastructure in coastal California is threatened by sea level rise and extreme storm events (CNRA 2014).

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of carbon dioxide, renewable energy and building materials. The most significant climate change related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large scale mortalities and combined with increasing temperatures have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat and decreased carbon absorption.

These losses can also negatively impact the timber industry as well as recreation opportunities. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality or other climate change effects on vegetation (CNRA 2014).

Ocean and Coastal Ecosystems and Resources. Sea level rise, changing ocean conditions and other climate change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea level rise in addition to more frequent and severe coastal storms and erosion are threatening vital infrastructure such as roads, bridges, power plants, ports and airports, gasoline pipes, and emergency facilities as well as negatively impacting the coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally (CNRA 2014).

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the twenty-first Century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies, and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity and duration of extreme heat and heat waves is likely to increase the risk of mortality due to heat related illness as well as exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health impacts that may be impacted by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition injuries. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality (CNRA 2014).

Transportation. Residents of California rely on airports, seaports, public transportation and an extensive roadway network to gain access to destinations, goods and services. While the transportation industry is a source of greenhouse gas emissions it is also vulnerable to climate change risks. Particularly, sea level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause the road surfaces to expand which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure which can impair movement of peoples and goods, or potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion risks,

landslides, mudslides and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety (CNRA 2014).

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes and ecosystems and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, amount of precipitation, runoff patterns, and frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during the winter time. Increased risk of flooding has a variety of public health concerns including water quality, public safety, property damage, displacement and post-disaster mental health problems. Prolonged and intensified droughts can also negatively groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat (CNRA 2014).

11.2 REGULATORY SETTING

Federal Regulations

Massachusetts vs. EPA. On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the Clean Air Act. On December 7, 2009, the EPA Administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the CAA:

- The Administrator found that elevated concentrations of GHGs—CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6—in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs—CO_2, CH_4, N_2O, and HFCs—from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the CAA.

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

- 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 by 2022.
- Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020, and directs 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.

Federal Vehicle Standards. In response to the U.S. Supreme Court ruling previously discussed, the Bush Administration issued Executive Order (EO) 13432 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, President Barack Obama issued a memorandum 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, 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 CO_2 by 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. 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 (EPA 2017b).

In addition to the regulations applicable to cars and light-duty trucks previously described, 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 CO_2 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%–23% over the 2010 baselines.

In August 2016, the EPA and NHTSA announced the adoption of phase two of the 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 years 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 CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

Clean Power Plan and New Source Performance Standards for Electric Generating Units. On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510–64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. Implementation of the Clean Power Plan has been stayed by the U.S. Supreme Court pending resolution of several lawsuits.

State Regulations

The statewide GHG emissions regulatory framework is summarized as follows by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders (EO), assembly bills (AB), senate bills (SB), and other regulations and plans that would directly or indirectly reduce GHG emissions.

State Climate Change Targets

EO S-3-05. EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80% less than 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emissions limitation, emissions reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for 2020, consistent with the determined 1990 baseline (427 MMT CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (Scoping Plan) in accordance with Health and Safety Code Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team (CAT) early actions and additional GHG reduction features by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan are the following (CARB 2008):

1. Expanding and strengthening existing energy efficiency programs and building and appliance standards.
2. Achieving a statewide renewable energy mix of 33%.
3. Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85% of California's GHG emissions.
4. Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
5. Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.

6. Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

In the Scoping Plan, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 28.5% from the otherwise projected 2020 emissions level (i.e., those emissions that would occur in 2020 absent GHG-reducing laws and regulations, referred to as "business-as-usual"). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, that no further regulatory action would impact vehicle fuel efficiency, and that building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the Scoping Plan's Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7% (down from 28.5%) from the business-as-usual conditions (CARB 2011a). When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewables Portfolio Standard (RPS) (12% to 20%) (CPUC 2015), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16% (down from 28.5%) from the business-as-usual conditions.

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80% less than 1990 levels by 2050" (CARB 2014). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% less than 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB 2014). Those six areas are energy, transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure), agriculture, water, waste management, natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

CARB's research efforts presented in the First Update indicate that it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement (CARB 2011a), CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15% (instead of 28.5% or 16%) from the business-as-usual conditions (CARB 2014).

On January 20, 2017, CARB released its 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB 2017). This update presents CARB's strategy for achieving the state's 2030 GHG target as established in Senate Bill (SB) 32 (discussed as follows), including continuing the Cap-and-Trade Program through 2030, and includes a new approach to reduce GHGs from refineries by 20%. The Second Update incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), acknowledges the need for reducing emissions in agriculture, and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the Second Update, CARB held a number of public workshops in the natural and working lands, agriculture, energy, and transportation sectors to inform development of the 2030 Scoping Plan Update (CARB 2016). When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states, "achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project's GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA" (CARB 2017). The Second Update was approved by CARB's Governing Board on December 14, 2017.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing statewide GHG emissions to 40% less than 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80% less than 1990 levels by 2050, as set forth in EO S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2e. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. EO B-30-15 does not require local agencies to take any action to meet the new interim GHG reduction target.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction targets, make changes to CARB's membership, increase legislative oversight of CARB's climate-change-based activities, and expand dissemination of GHG and other air-quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40% less than 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40% less than 2013 levels by 2030 for CH_4 and HFCs, and 50% less than 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as previously mentioned, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Although not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and California Energy Commission (CEC) (and revised if necessary) (California Public Resources Code (PRC) Section 25402(b)(1)). The regulations receive input from members of industry and the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (PRC Section 25402(d)) and cost effectiveness (PRC Sections 25402(b)(2) and (b)(3)). These standards are updated to consider and incorporate new energy-efficient technologies and construction methods. As a result, these standards save energy, increase

electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The 2016 Title 24 standards are the currently applicable building energy efficiency standards, and became effective on January 1, 2017. In general, single-family homes built to the 2016 standards are anticipated to use about 28% less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and nonresidential buildings built to the 2016 standards will use an estimated 5% less energy than those built to the 2013 standards (CEC 2015a).

Title 24, Part 11. In addition to CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code is commonly referred to as CALGreen, and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality (CALGreen 2016). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (CALGreen 2016):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.
- 65% of construction and demolition waste must be diverted from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations.
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15% improvement in energy requirements, stricter water conservation, 65% diversion of construction and demolition waste, 10% recycled content in building materials, 20% permeable paving, 20% cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30% improvement in energy requirements, stricter water conservation, 75%

diversion of construction and demolition waste, 15% recycled content in building materials, 30% permeable paving, 25% cement reduction, and cool/solar-reflective roofs.

The California Public Utilities Commission (CPUC), CEC, and CARB also have a shared, established goal of achieving zero net energy for new construction in California. The key policy timelines are that all new residential construction in California will be zero net energy by 2020, and all new commercial construction in California will be zero net energy by 2030 (CPUC 2013).[3] As most recently defined by CEC in its 2015 Integrated Energy Policy Report, a zero net energy code building is "one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building" using the CEC's time-dependent valuation metric (CEC 2015b).

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1. SB 1 (2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the Public Resources Code, including Chapter 8.8, California Solar Initiative, that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for homes and businesses within 10 years of adoption, and to place solar energy systems on 50% of new homes within 13 years of adoption. SB 1, also termed "GoSolarCalifornia," was previously titled "Million Solar Roofs."

AB 1470. This bill established the Solar Water Heating and Efficiency Act of 2007. The bill made findings and declarations of the Legislature relating to the promotion of solar water heating

[3] It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

systems and other technologies to reduce natural gas demand. The bill defined several terms for purposes of the act. The bill required the CEC to evaluate the data available from a specified pilot program, and, if it made a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting to reduce electricity consumption by 50% for indoor residential lighting and by 25% for indoor commercial lighting.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20% of their power from renewable sources by 2010.

SB 1368. SB 1368 (2006) requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the CPUC. This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

SB X1 2. SB X1 2 (2011) expanded the RPS by establishing that 20% of the total electricity sold to retail customers in California per year by December 31, 2013, and 33% by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350. SB 350 (2015) further expanded the RPS by establishing that 50% of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy

conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

Mobile Sources

AB 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. In 2009–2012, standards resulted in a reduction of approximately 22% in GHG emissions compared to emissions from the 2002 fleet, and in 2013–2016, standards resulted in a reduction of approximately 30%.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining low-carbon fuel standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the low-carbon fuel standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10% by 2020. Carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

SB 375. SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional metropolitan planning organizations (MPO) are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan (RTP). The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), an SCS does not regulate the use of land; supersede the land use authority of cities and counties; or require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single, coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011b). To improve air quality, CARB implemented new emission standards to reduce smog-forming emissions beginning with 2015 model-year vehicles. It is estimated that by 2025, cars will emit 75% less smog-forming pollution than the average new car sold before 2012. To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, adopted new GHG standards for model years 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34% by 2025. The Zero Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (2012) directs state entities under the governor's direction and control to support and facilitate development and distribution of ZEVs. This executive order also sets a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80% less than 1990 levels by 2050. In furtherance of this executive order, the governor convened an Interagency Working Group on ZEVs that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

AB 1236. AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact on public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provides for appeal of that decision to the planning commission. The bill required local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, to create an expedited and streamlined permitting process for electric vehicle charging stations. Prior to this statutory deadline, in August 2016, the County of Los Angeles Board of Supervisors adopted Ordinance No. 10437 (N.S.) adding a section to the Los Angeles County Code related to the expedited processing of electric-vehicle charging-station permits consistent with AB 1236.

SB 350. In 2015, SB 350, the Clean Energy and Pollution Reduction Act, was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the

transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (PRC Sections 40000 et seq.), was passed because of the increase in waste stream and decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed of, and jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25% by 1995 and 50% by 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75% of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes will assist the state in reaching the 75% goal by 2020.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25% relative to water use in 2013. The term of the executive order extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The executive order includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increased the requirements for landscape water use efficiency and broadened its applicability to include new development projects with smaller landscape areas.

Other State Regulations and Goals

SB 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research (OPR) to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the OPR issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to

reduce GHG emissions to a level that is less than significant. The CNRA adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended CEQA Guidelines in the California Code of Regulations (CCR), a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4(a)). The CEQA Guidelines require a lead agency to consider the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through implementation of project features or off-site measures. The adopted amendments do not establish a GHG emissions threshold, but allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The CNRA also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009).

With respect to GHG emissions, the CEQA Guidelines state in CCR Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions, or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4(a)). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: the extent a project may increase or reduce GHG emissions compared to the existing environmental setting; whether project emissions exceed a threshold of significance that the lead agency determines applies to the project; and 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 (14 CCR 15064.4(b)).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the executive order directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability to climate change, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). A draft of the Safeguarding California Plan: 2017 Update

was prepared to communicate current and needed actions that state government should take to build climate change resiliency (CNRA 2017).

2015 State of the State Address. In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals that would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33% to 50%, a reduction in vehicle petroleum use for cars and trucks by up to 50%, measures to double the efficiency of existing buildings, and measures to decrease emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per-capita GHG emissions down to 2 MT per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 Memorandum of Understanding) to limit global warming to less than 2°C by 2050. The Under 2 Memorandum of Understanding agreement pursues emission reductions of 80%–95% less than 1990 levels by 2050 and/or reach a per-capita annual emissions goal of less than 2 MT by 2050. A total of 187 jurisdictions representing 38 countries and six continents, including California, have signed or endorsed the Under 2 Memorandum of Understanding (Under 2 Coalition 2017).

Local Regulations

Northern Sierra Air Quality Management District

The NSAQMD is the primary agency responsible for planning to meet federal and state ambient air quality standards in Nevada, Plumas and Sierra counties. The NSAQMD develops rules and regulations for stationary sources and equipment, prepares emissions inventories and air quality management planning documents, and conducts source testing and inspections. NSAQMD has not adopted specific guidance or thresholds applicable to the analysis of a project's contribution to GHG emissions and associated climate change effects.

City of Grass Valley General Plan

The Land Use (LU) Element and Circulation (C) Element of the Grass Valley 2020 General Plan include goals (G), objectives (O) and policies (P) related to reducing GHG emissions mainly by encouraging infill development, improving public transportation, and reducing reliance on automobiles. The following goals and objectives are applicable to the proposed project:

2-LUG: Promote infill as an alternative to peripheral expansion where feasible.

3-LUG: In areas of new development, plan for diversity of land uses and housing types, including mixed use developments.

6-LUG: Promote a jobs/housing balance within the Grass Valley region in order to facilitate pleasant, convenient and enjoyable working conditions for residents, including opportunities for short home to work journeys.

4-LUO: Reduction in environmental impacts associated with peripheral growth.

15-LUO: Reduction in the number of vehicle miles driven.

5-LUP: Actively market infill and available parcels during contracts with developers and community members.

6-LUP: Develop a more specific development strategy for identified infill parcels following General Plan adoption.

7-LUP: Utilize California Redevelopment Law to provide incentives to infill development.

8-LUP: Encourage and facilitate mixed-use developments on infill sites.

1-CG: Provide a circulation system that utilizes a variety of transportation modes, including alternative means of transportation.

5-CO: Convenient, safe and functional facilities for pedestrians, bicyclists and equestrians.

6-CP: Locate transit stops and park and ride facilities near freeway interchanges and in conjunction with higher density residential and mixed-use developments.

8-CP: Incorporate separated, non-motorized paths in street cross-section designs whenever feasible.

11.3 IMPACTS

This section identifies and discusses the environmental impacts resulting from the proposed project and suggests mitigation measures to reduce the level of impact. A detailed discussion of mitigation measures is included in Section 11.4, Mitigation Measures.

Methods of Analysis

The CalEEMod modeling program was used to estimate the proposed project's GHG emissions from all project sources, including in-home energy use, water consumption, and wastewater generation; mobile source emissions; and landfill emissions associated with solid waste generated at the site.

Significance Criteria

The significance criteria for evaluating GHG impacts associated with the implementation of the proposed project are as follows. Would the proposed project:

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

At this time, neither the NSAQMD nor the City has adopted numerical thresholds of significance for GHG emissions that would apply to the proposed project. The NSAQMD, however, recommends that all projects subject to CEQA review be considered in the context of GHG emissions and climate change impacts, and that CEQA documents should include a quantification of GHG emissions from all project sources, as well as minimize and mitigate GHG emissions as feasible (Longmire 2018). The proposed project would generate GHG emissions only through short-term construction activities and long-term operational activities.

In light of the lack of established GHG emissions thresholds that would apply to the proposed project, CEQA allows lead agencies to identify thresholds of significance applicable to a proposed project that are supported by substantial evidence. Therefore, to establish additional context in which to consider the order of magnitude of the proposed project's construction-related GHG emissions, this analysis accounts for the following considerations by other government agencies and associations about what levels of GHG emissions constitute a cumulatively considerable incremental contribution to climate change:

- The Sacramento Metropolitan Air Quality Management District (SMAQMD) established thresholds including 1,100 metric tons CO_2e per year for the construction or operational phase of land use development projects, or 10,000 direct metric tons CO_2e per year from stationary source projects. If a project exceeds these mass thresholds, the level of mitigation is based on demonstrating consistency with CARB's Climate Change Scoping Plan and the AB 32 state goals for reducing GHG emissions, which is currently 21.7% reduction from 2020 "no action taken" emissions (SMAQMD 2014).
- The Placer County Air Pollution Control District (PCAPCD) recommends a tiered approach to determine if a project's GHG emissions would result in a significant impact. First, project GHG emissions are compared to the de minimis level of 1,100 MT CO_2e per year. If a project does not exceed this threshold, it does not have significant GHG emissions. If the project exceeds the de minimis level and does not exceed the 10,000 MT CO_2e per year bright line threshold, then the project's GHG emissions can be compared to the to the efficiency thresholds. These thresholds are 4.5 MT CO_2e per capita for residential projects in an urban

area and 5.5 MT CO_2e per capita for residential projects in a rural area. For nonresidential development, the thresholds are 26.5 MT CO_2e per 1,000 sf for projects in urban areas and 27.3 MT CO_2e per 1,000 sf for projects in rural areas.

- The Bay Area Air Quality Management District (BAAQMD) has adopted a 1,100 metric tons of CO_2e per year as a project-level "bright line" GHG significance threshold that would apply to operational emissions from mixed land-use development projects, a threshold of 10,000 metric tons of CO_2e per year as the significance threshold for operational GHG emissions from stationary-source projects, or an efficiency threshold of 4.6 MT CO_2e per service population per year (BAAQMD 2017).
- The South Coast Air Quality Management District (SCAQMD) formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses a tiered approach to evaluate potential GHG impacts from various uses. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects (SCAQMD 2010).

Based on the range of established GHG thresholds, the 1,100 metric tons CO_2e per year threshold was applied as a conservative GHG threshold for the proposed project.

Impact Analysis

Impact 11-1: Would the project impede the City or state efforts to meet AB 32 standards for the reduction of GHG emissions?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation measure 11a	Mitigation measure 11a
Significance after mitigation:	Significant and unavoidable	Significant and unavoidable

Alternative A

Construction Emissions

Construction of Alternative A would result in GHG emissions that would primarily be associated with use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Chapter 10, Air Quality. Construction of the proposed project is anticipated to occur over a three year period, beginning in the summer of 2019 with project buildout early 2021. Table 11-2 presents construction emissions for the proposed project for all years of construction.

Table 11-2
Estimated Annual Construction Greenhouse Gas Emissions – Alternative A

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2019	396.0	0.1	0.0	398.9
2020	368.8	0.1	0.0	701.3
2021	46.1	<0.1	0.0	46.3
Total	810.9	0.2	0.0	1,146.5

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
Source: Appendix I

As shown in Table 11-2, estimated total construction GHG emissions would be approximately 1,147 MT CO_2e. Construction GHG emissions are a one-time release and are typically considered separate from operational emissions, as global climate change is inherently a cumulative effect that occurs over a long period of time and is quantified on a yearly basis. Even though construction-related emissions will cease at the end of the construction, the pollutants will remain in the atmosphere for long periods afterwards, in some cases for hundreds of years. To ensure that the combined emissions associated with construction and operations are considered together, the proposed project's construction GHG emissions have been amortized over the lifetime of the project, which is assumed for this analysis to be 30 years, and included in the annual operational GHG emissions. The proposed project would result in amortized construction emissions of 38 MT CO_2e. Amortized construction emissions are discussed under "Operational Impacts," as follows.

Operational Emissions

Long-term operations of the proposed project would result in GHG emissions through area sources (landscape maintenance equipment); energy use (natural gas and generation of electricity consumed by the project); generation of electricity associated with wastewater treatment and with water supply, treatment, and distribution; and solid waste disposal. Annual GHG emissions from these sources were estimated using CalEEMod.

CalEEMod default data, including temperature, trip characteristics, variable start information, emissions factors, vehicle mix, and trip distances, were conservatively used for the model inputs. Emission factors representing the vehicle mix and emissions for 2022 (the first full year of operation) were used to estimate emissions associated with full buildout of the proposed project.

CalEEMod was also used to estimate emissions from the proposed project's area sources, which includes operation of gasoline-powered landscape maintenance equipment, which produces minimal GHG emissions.

Water supplied to the proposed project requires the use of electricity. Accordingly, the supply, conveyance, treatment, and distribution of water would indirectly result in GHG emissions through use of electricity. Furthermore, it was assumed that the proposed project would meet utility emission factors consistent with the 33% RPS by 2020 because the Pacific Gas and Electric (PG&E) is required to meet its 33% RPS requirement. Additionally, the proposed project emissions were adjusted to account for the CALGreen mandate to reduce water consumption by up to 20%.

The proposed project would generate solid waste, and, therefore, result in CO_2e emissions associated with landfill off-gassing. Consistent with the state's diversion rate goals set forth in AB 341, the proposed project is subject to numerous recycling requirements including, (1) organic waste (food, green waste, compostable paper) recycling required through the state's implementation of AB 1826; (2) establishing recycling service with the local waste management company required by the state's implementation of AB 341, and (3) comply with the Grass Valley Municipal Code Section 8.24.040 standards for disposal of waste and recycling material with adequate capacity, number and distribution to serve the proposed project.

The estimated operational GHG emissions from mobile sources, area sources, energy consumption, solid waste, water consumption, and wastewater treatment associated with the proposed project in 2022 are shown in Table 11-3. Details of the emission calculations are provided in Appendix I.

Table 11-3
Estimated Operational Greenhouse Gas Emissions – Alternative A

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	64.9	<0.1	<0.1	65.3
Energy (natural gas and electricity)	804.0	<0.1	<0.1	808.1
Mobile	5,410.4	0.4	0.0	5,420.7
Solid waste	11.8	0.7	0.0	29.2
Water supply and wastewater	31.4	0.5	<0.1	47.7

Table 11-3
Estimated Operational Greenhouse Gas Emissions – Alternative A

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Construction (amortized over 30 years)	—	—	—	*38.2*
Total Project Emissions	6,409.2			

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrogen dioxide; CO_2e = carbon dioxide equivalent.
Project GHG emissions are based on the "mitigated" CalEEMod outputs which includes incorporation of water reduction consistent with CALGreen and a 75% diversion of solid waste per Assembly Bill 341.
Source: Appendix I

As shown in Table 11-3, the total Alternative A GHG emissions during operation were estimated to be approximately 6,409 MT CO_2e per year which includes amortized construction emissions of 38 MT CO_2e per year. As previously discussed, based on range of established GHG thresholds, a GHG threshold of 1,100 MT CO_2e was used for comparison to the evaluate the proposed project's GHG emission impacts. Because development of Alternative A would substantially exceed this threshold, Alternative A's GHG emissions prior to mitigation would be potentially significant. Mitigation Measure 11a requires that the site plan include a variety of improvements that would minimize GHG emissions associated with project operations by supporting use of alternative modes of transportation, energy efficiency, efficient water use, and reductions in the amount of heat that may be generated by developed/paved surfaces within the project site. This includes specific requirements for energy efficient improvements to residential units. It also stipulates requirements to provide pedestrian facilities throughout the project site, which would be consistent with the proposed site plans. Although Mitigation Measure 11a requires provision of site improvements that would reduce the project's GHG emission, approximately 89% of Alternative A's annual GHG emissions are from mobile sources and these would not be reduced by the requirements of Mitigation Measure 11a. Thus, Alternative A's contribution to GHGs is considered cumulatively considerable and is a **significant and unavoidable** impact.

Alternative B

GHG emissions associated with construction and operation of the Alternative B were calculated using the same construction scenario described in Chapter 10 of this EIR. In summary, the Alternative B was assumed to be constructed from 2019 through 2021. CalEEMod was also used to estimate GHG emissions resulting from buildout of the Alternative B. The first full year after buildout was assumed to be 2022.

Table 11-4 shows the estimated maximum daily construction emissions associated with the construction phases of Alternative B. Complete details of the emissions calculations are provided in Appendix I.

Table 11-4
Estimated Annual Construction Greenhouse Gas Emissions – Alternative B

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2019	396.0	0.1	0.0	398.9
2020	698.8	0.1	0.0	701.3
2021	46.1	<0.1	0.0	46.3
Total	1,140.9	0.2	0.0	1,146.5

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
Source: Appendix I.

As shown in Table 11-4, estimated total construction GHG emissions would be approximately 1,147 MT CO_2e as a result of construction-related activities. Construction GHG emissions are a one-time release and are typically considered separate from operational emissions, as global climate change is inherently a cumulative effect that occurs over a long period of time and is quantified on a yearly basis. Even though construction-related emissions will cease at the end of the construction, the pollutants will remain in the atmosphere for long periods afterwards, in some cases for hundreds of years. To ensure that the combined emissions associated with construction and operations are considered together, the proposed project's construction GHG emissions have been amortized over the lifetime of the project, which is assumed for this analysis to be 30 years, and included in the annual operational GHG emissions. The proposed project would result in amortized construction emissions of 38 MT CO_2e. Amortized construction emissions are accounted for under the following operational impacts.

The estimated operational GHG emissions from mobile sources, area sources, energy consumption, solid waste, water consumption, and wastewater treatment associated with the proposed project in 2022 are shown in Table 11-5. Details of the emission calculations are provided in Appendix I.

Table 11-5
Estimated Operational Greenhouse Gas Emissions – Alternative B

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	123.3	<0.1	<0.1	124.1
Energy (natural gas and electricity)	702.7	<0.1	<0.1	706.4
Mobile	5,993.2	0.4	0.0	6,004.4
Solid waste	11.8	0.7	0.0	29.2
Water supply and wastewater	31.4	0.5	<0.1	47.7
Construction (amortized over 30 years)	—	—	—	38.2
			Total Project Emissions	6,950.0

Notes: CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrogen dioxide; CO_2e = carbon dioxide equivalent.

Project GHG emissions are based on the "mitigated" CalEEMod outputs which includes incorporation of water reduction consistent with CALGreen and a 75% diversion of solid waste per Assembly Bill 341.
Source: Appendix I

As shown in Table 11-5, the total Alternative B GHG emissions during operation were estimated to be approximately 6,950 MT CO_2e per year which includes amortized construction emissions of 38 MT CO_2e per year. As previously discussed, based on range of established GHG thresholds, a GHG threshold of 1,100 MT CO_2e was used for comparison to the evaluate the proposed project's GHG emission impacts. Because development of Alternative B would substantially exceed this threshold, Alternative B's GHG emissions prior to mitigation would be potentially significant. Mitigation Measure 11a would minimize GHG emissions associated with project operations, however, approximately 90% of Alternative B's annual GHG emissions are from mobile sources which would not be reduced by Mitigation Measure 11a. Thus, Alternative B's contribution to GHGs is considered cumulatively considerable and is a **significant and unavoidable** impact.

Impact 11-2: Would the project conflict with the City's Climate Action Plan?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than significant

Alternative A and Alternative B

There are currently no adopted local or regional GHG reduction plans applicable to the proposed project. The City of Grass Valley is in the process of developing an energy action plan that will provide various strategies and goals to accelerate energy efficiency, renewable energy, and water efficiency projects by residents, businesses and public agencies.

At the regional level, the Nevada County Transportation Commission (NCTC) adopted the *2015–2035 Nevada County Regional Transportation Plan* (RTP) in order to establish the short-term (2016 to 2026) and long-term (2026 to 2036) regional transportation needs in Nevada County and to facilitate the efficient development and implementation of projects while maintaining public health and environmental quality (NCTC 2018). Although the RTP does not regulate land use or supersede the exercise of land use authority by NCTC's member jurisdictions (i.e., Grass Valley or other cities within Nevada County), the RTP is a relevant regional reference document for purposes of evaluating the intersection of land use and transportation patterns and seeks to reduce air quality issues associated with future growth by increasing the efficiency of the transportation system and increasing alternative transportation options (NCTC 2018). Although, the proposed project would increase traffic within the project area due to the influx of residents and employment, short-term projections have identified and accounted for such growth within the RTP. Regarding long-term impacts, the expansion of Dorsey Drive is included in the RTP as a long-term financially constrained (funded) improvement project

which would be required to accommodate future growth within the project area. Furthermore, the transportation impact analysis proposes project-related improvements for study area intersections and roadway segments including Dorsey Drive, in order to lessen traffic related impacts. Therefore, the proposed project would not conflict with the RTP.

The Scoping Plan, approved by CARB on December 12, 2008, provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. As such, the Scoping Plan is not directly applicable to specific projects. Relatedly, in the Final Statement of Reasons for the Amendments to the CEQA Guidelines, the CNRA observed that "[t]he [Scoping Plan] may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009). Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others. To the extent that these regulations are applicable to the project, the project would comply will all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% less than 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% less than 1990 levels by 2050), there are no established protocols or thresholds of significance for that future-year analysis. However, CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB 2014). With regard to the 2050 target for reducing GHG emissions to 80% less than 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014):

> This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions (CARB 2014).

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, SB 32, and EO S-3-05. This is confirmed in California's 2017 Climate Change Scoping Plan (Second Update), which states, "This Plan draws from the experiences in developing and implementing previous plans to present a path to reaching California's 2030 GHG reduction target. The Plan is a package of economically viable and technologically feasible actions to not just keep California on track to achieve its 2030 target, but stay on track for a low- to zero-carbon economy by involving every part of the state" (CARB 2017). The Second Update also states that although "the Scoping Plan charts the path to achieving the 2030 GHG emissions reduction target, we also need momentum to propel us to the 2050 statewide GHG target (80% less than 1990 levels). In developing this Scoping Plan, we considered what policies are needed to meet our mid-term and long-term goals" (CARB 2017).

Finally, neither the City of Grass Valley nor the NSAQMD have adopted GHG reduction measures that would apply to the proposed project. At this time, no mandatory GHG regulations or finalized agency guidelines would apply to implementation of the proposed project, and no conflict would occur. This impact would be less than significant.

11.4 MITIGATION MEASURES

Mitigation Measure 11a: The following GHG emission reduction measures shall be implemented:

All residential buildings shall:

- Meet or exceed CALGreen Tier 1 requirements in place at the time of Building Permit issuance.
- Be pre-plumbed and structurally engineered for the installation of a complete solar energy system.
- Include a tankless water heating system, a whole house ceiling fan, and "Energy Star" appliances (stoves, dishwashers, and any other appliances typically included within the initial installation by the builder).
- Include programmable thermostat timers.
- Include exterior outlets on all residential buildings to allow the use of electrically-powered landscape equipment.
- Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building

Permit application for each residence only utilize low flow water fixtures such as low flow toilets, faucets, showers, etc.

- Prior to approval of Improvement Plans the applicant shall only show energy efficient lighting for all street, parking, and area lighting associated with the proposed project, including all on-site and off-site lighting.
- Pave all parking lots with reflective coatings (albedo = 0.30 or better). This measure is considered feasible if the additional cost is less than 10% of the cost of applying a standard asphalt product.

All non-residential buildings shall:

- Be pre-plumbed and structurally engineered for the installation of a complete solar energy system.
- Prior to the issuance of non-residential building permits, the proposed project applicant or its designee shall submit building plans illustrating that the proposed project's non-residential land uses shall achieve an 8% greater building energy efficiency than required by the current state energy efficiency standards in Title 24, Part 6 of the California Code of Regulations.
- Use "Energy Star" rated (or greater) roofing materials.
- Use both indoor and outdoor energy efficient lighting that meets or exceeds Title 24 requirements.
- Prior to the issuance of a Building Permit, the floor plans and/or exterior elevations submitted in conjunction with the Building Permit application shall show that the proposed project includes a complete solar water heating system.
- Include an energy efficient heating system and an air conditioning system that exceeds the SEER ratio by a minimum of two points at the time of building permit issuance.
- Only use low flow water fixtures such as low flow toilets, faucets, showers, etc.
- Only use programmable thermostat timers.
- Prior to approval of Improvement Plans, the applicant shall only show energy efficient lighting for all street, parking, and area

lighting associated with the proposed project, including all on-site and off-site lighting.

- Include pedestrian-friendly paths and cross walks in all parking lots, consistent with the proposed site plans.
- Pave all parking lots with reflective coatings (albedo = 0.30 or better). This measure is considered feasible if the additional cost is less than 10% of the cost of applying a standard asphalt product.
- Maximize the amount of drought tolerant landscaping by minimizing the amount of turf in all areas where this option is feasible as well as comply with the City's Model Water Efficient Landscape Ordinance for both residential and commercial land uses.
- Ensure recycling of construction debris and waste through administration by an on-site recycling coordinator and presence of recycling/separation areas.

11.5 REFERENCES CITED

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

BAAQMD (Bay Area Air Quality Management District). 2017. *California Environmental Quality Act Air Quality Guidelines.* Updated May 2017. http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/ceqa_guidelines_may2017-pdf.pdf?la=en.

CALGreen (California Green Building Code). 2016. 2016 Green Building Standards Code. https://codes.iccsafe.org/public/document/details/toc/657.

CARB (California Air Resources Board). 2008. *Climate Change Scoping Plan: A Framework for Change*. December 12, 2008. Accessed June 20, 2016. Available at http://www.arb.ca.gov/cc/scopingplan/document/adopted_scoping_plan.pdf

CARB. 2011a. *Final Supplement to the AB 32 Scoping Plan Functional Equivalent Document*. August 19, 2011.

CARB. 2011b. *Facts About the Advanced Clean Cars Program*. Revised November 9, 2011. Accessed April 2018. https://www.arb.ca.gov/msprog/zevprog/factsheets/advanced_clean_cars_eng.pdf.

CARB. 2014. *First Update to the Climate Change Scoping Plan: Building on the Framework Pursuant to AB 32 – The California Global Warming Solutions Act of 2006*. May 2014. Accessed June 20, 2016. Available at http://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf.

CARB. 2016. "AB 32 Scoping Plan." CARB Website Tracking Progress on the 2030 Scoping Plan Update. December 2, 2016. https://www.arb.ca.gov/cc/scopingplan/scopingplan.htm.

CARB. 2017. *The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target*. January 20, 2017. Accessed January 2017. https://www.arb.ca.gov/cc/scopingplan/2030sp_pp_final.pdf.

CARB. 2018. *California Greenhouse Gas Inventory for 2000–2016 by Category as Defined in the 2008 Scoping Plan.* Last updated June 22, 2018. https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf.

CAT (California Climate Action Team). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. Sacramento, California: California Environmental Protection Agency, California Climate Action Team. March 2006. Accessed June 20, 2016. Available at http://www.climatechange.ca.gov/climate_action_team/reports/2006report/2006-04-03_FINAL_CAT_REPORT.PDF

CAT. 2010. *Climate Action Team Biennial Report.* Sacramento, California: California Environmental Protection Agency, California Climate Action Team. April 2010. Accessed June 20, 2016. Available at http://www.energy.ca.gov/2010publications/CAT-1000-2010-004/CAT-1000-2010-004.PDF.

CCCC (California Climate Change Center). 2012. *Our Changing Climate 2012: Vulnerability & Adaptation to the Increasing Risks from Climate Change in California*. July 2012. Accessed December 2016. http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf.

CEC (California Energy Commission). 2015a. 2016 Building Energy Efficiency Standards – Frequently Asked Questions. http://www.energy.ca.gov/title24/2016standards/rulemaking/documents/2016_Building_Energy_Efficiency_Standards_FAQ.pdf.

CEC. 2015b. *2015 Integrated Energy Policy Report.* CEC-100-2015-001-CMF. Accessed September 25, 2017. http://docketpublic.energy.ca.gov/PublicDocuments/15-IEPR-01/TN212017_20160629T154354_2015_Integrated_Energy_Policy_Report_Small_File_Size.pdf.

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 23, 1999.

City of Grass Valley. 1999b. *City of Grass Valley General Plan Update Environmental Impact Report*. Prepared for the City of Grass Valley by Quad Knopf. August 1999.

CNRA (California Natural Resources Agency). 2009. *2009 California Climate Adaptation Strategy: A Report to the Governor of the State of California in Response to Executive Order S-13-2008.* http://resources.ca.gov/docs/climate/Statewide_Adaptation_Strategy.pdf.

CNRA. 2014. *Safeguarding California: Reducing Climate Risk: An Update to the 2009 California Climate Adaptation Strategy*. July 2014. Accessed May 2017. http://resources.ca.gov/docs/climate/Final_Safeguarding_CA_Plan_July_31_2014.pdf.

CNRA. 2016. *Safeguarding California: Implementation Action Plans*. March. Accessed May 2017. http://resources.ca.gov/docs/climate/safeguarding/Safeguarding%20California-Implementation%20Action%20Plans.pdf.

CNRA. 2017. *Draft Report Safeguarding California Plan: 2017 Update*. May. Accessed August 2017. http://resources.ca.gov/wp-content/uploads/2017/05/DRAFT-Safeguarding-California-Plan-2017-Update.pdf.

CPUC (California Public Utilities Commission). 2013. "California's Zero Net Energy Policies and Initiatives." September 18, 2013. http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=10718.

CPUC. 2015. Renewables Portfolio Standard. SB 350 Clean Energy and Pollution Reduction Act of 2015. Approved October 7, 2015.

EPA (U.S. Environmental Protection Agency). 2007. Energy Independence and Security Act of 2007. Accessed December 2016. https://www.gpo.gov/fdsys/pkg/BILLS-110hr6enr/pdf/BILLS-110hr6enr.pdf.

EPA. 2016. "Glossary of Climate Change Terms." August 9, 2016. Accessed August 2016. https://www3.epa.gov/climatechange/glossary.html.

EPA. 2017a. "Climate Change." Last updated January 19, 2017. Accessed January 2017. https://www.epa.gov/climatechange.

EPA. 2017b. *Carbon Pollution Standards for Cars and Light Trucks to Remain Unchanged Through 2025*. January 13. Accessed February 2017. https://www.epa.gov/newsreleases/carbon-pollution-standards-cars-and-light-trucks-remain-unchanged-through-2025.

EPA. 2018. *Inventory of U.S. Greenhouse Gas Emissions and Sinks 1990–2016.* EPA 430-R-18-003. https://www.epa.gov/sites/production/files/2018-01/documents/2018_complete_report.pdf.

EPA and NHTSA (Department of Transportation's National Highway Traffic Safety Administration). 2016. *Regulations and Standards: Heavy-Duty. EPA and DOT Finalize Greenhouse Gas and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles*. Last updated on August 30, 2016. https://www.epa.gov/newsreleases/epa-and-dot-finalize-greenhouse-gas-and-fuel-efficiency-standards-heavy-duty-trucks-0.

IPCC (Intergovernmental Panel on Climate Change). 1995. *IPCC Second Assessment Synthesis of Scientific-Technical Information Relevant to Interpreting Article 2 of the U.N. Framework Convention on Climate Change*.

IPCC. 2007. "Summary for Policymakers." In *Climate Change 2007: The Physical Science Basis*, edited by S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor, and H.L. Miller, 1–18. A Report of Working Group I of the IPCC. New York, New York, Cambridge University Press. Accessed September 2017. https://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-spm.pdf.

IPCC. 2013. *Climate Change 2013: The Physical Science Basis*. *Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Edited by T.F. Stocker, D. Qin, G.K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex, and P.M. Midgley. New York, New York: Cambridge University Press. http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf.

IPCC. 2014. *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II, and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf.

Longmire, S. 2018. Email correspondence between S. Longmire (NSAQMD) and I. McIntire (Dudek). August 29, 2018.

NCTC (Nevada County Transportation Commission). 2018. *2015–2035 Nevada County Regional Transportation Plan*. January 2018.

OPR (California Governor's Office of Planning and Research). 2008. *Technical Advisory – CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review.* http://opr.ca.gov/docs/june08-ceqa.pdf.

SMAQMD (Sacramento Metropolitan Air Quality Management District). 2014. *Justification for Greenhouse Gas Emissions Thresholds of Significance*. September 2014.

SCAQMD (South Coast Air Quality Management District). 2010. "Greenhouse Gases CEQA Significance Thresholds Working Group Meeting No. 15." September 28, 2010. Accessed December 2016. http://www.aqmd.gov/docs/default-source/ceqa/handbook/greenhouse-gases-(ghg)-ceqa-significance-thresholds/year-2008-2009/ghg-meeting-15/ghg-meeting-15-main-presentation.pdf?sfvrsn=2.

Under 2 Coalition. 2017. Under 2 Memorandum of Understanding. Updated September 2017. Accessed September 2017. http://under2mou.org/wp-content/uploads/2015/05/Under2-Two-Pager-September-2017.pdf.

CHAPTER 12
GEOLOGY, SOILS, SEISMICITY, AND PALEONTOLOGY

This section addresses the potential impacts of the Dorsey Marketplace Project (proposed project) to geologic, soils, and paleontological resources as well as impacts related to seismic safety and soil stability. Site characteristics such as regional and local fault zones and seismic hazards are described based on site-specific information and published technical information. The primary sources referenced to prepare this section include the following:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (EIR) (City of Grass Valley 1999b)
- *City of Grass Valley General Plan Mineral Management Element* (City of Grass Valley 1993)
- *Grass Valley General Plan Update Background Report* (Quad Knopf 1998)
- *Preliminary Geotechnical Engineering Report for Former Spring Hill Mine Property APNs 35-260-62, 63 and 64 Grass Valley, California* (Appendix J-1).

No comments addressing geology, soils, seismicity, or paleontological resources were received in response to the Notice of Preparation (NOP). The NOP and comments received in response to the NOP are included in Appendix A.

12.1 ENVIRONMENTAL SETTING

Geology

Regional Setting

The City of Grass Valley is located on the western edge of the Sierra Nevada geomorphic province on the eastern edge of California's Great Central Valley (City of Grass Valley 1999a). Geomorphic provinces are areas comprised of similar geologic origin and erosional/depositional history. The Sierra Nevada geomorphic province extends approximately 400 miles from Lassen Peak in the north to the Mojave Desert in the south. The Sierra Nevada mountain range is a relatively recent formation, created 10 to 12 million years ago. The mountain range is composed mainly of metamorphic and igneous rocks. The Sierra Nevada batholith is mostly composed of Mesozoic (144 million to 245 million years ago), plutonic, and volcanic rocks. Along the western edge of the batholith lies a metamorphic belt, characterized by extremely folded and faulted Paleozoic (286 million to 700 million years ago) to Mesozoic metavolcanic and metasedimentary rocks. Tertiary (5 million to 65 million years ago) and Quaternary (1.8 million years ago to present) age volcanic and alluvial deposits overlie the older basement rocks in some areas. These formations have been exposed to millions of years of weathering and erosion of surface structures, such as from glacial

activities and stormwater runoff, leading to the creation of large rivers on both the western and eastern slopes. The formation extends below the sediment of the Great Valley; the Great Valley is a structural trough in which sediments from erosion of the surrounding mountain ranges have been deposited almost continuously since the Jurassic period (about 160 million years ago), leaving a flat valley floor composed of alluvial material.

Project Site Conditions

The project site is underlain by serpentine rock of mafic and ultramafic units of the Mesozoic and Jurassic aged Lake Combie Complex (Appendix J-1). The ultramafic and serpentine rocks on the project site are likely to contain significant levels of naturally occurring asbestos (Appendix J-1). A geological survey conducted in the 1890s mapped a large, east-west quartz vein running directly through the project site. A site visit conducted by Holdrege & Kull on August 28, 2007 identified exposed surface mine rock waste on approximately 6.5 acres of the 26.8-acre site, which generally consisted of slightly to moderately weathered, mineralized serpentine and diabase rock with abundant quartz (Appendix J-1). Waste rock was present in several benches extending down slope to the south and southwest of the knoll-top; smaller waste rock stockpiles were observed in the area between the bin and compressor foundations, and scattered waste rock was observed at the perimeter of the larger, main stockpiles of mine waste rock in the central and western portions of the site (Appendix J-1).

Topography

Regional Setting

The project site lies in the Sierra Nevada Foothills on the western side of the Sierra Nevada geomorphic province. Generally, ridge and rock formations are northwest-southeast trending, with drainage toward the southwest following the westward tilt of the Sierra Nevada fault block (City of Grass Valley 1993). Elevation in the Sierra Nevada increases gradually on the western slope and decreases more rapidly on the eastern slope forming a steep scarp above the adjacent Basin and Range province to the east. The western portion of Nevada County is comprised of rolling foothills forming a transition between the low-lying Sacramento Valley and the mountains to the east (City of Grass Valley 1999b).

Project Site Conditions

As reported in the project's Preliminary Geotechnical Engineering Report (Appendix J-1), the northern portion of the approximately 26.8-acre project site is relatively flat and slopes gently towards a knoll in the north central portion of the site. The central and southern portions of the site slope toward the south and southwest. Rock outcrop is present at several locations in the western, northern and eastern portions of the property. The western and central portions of the project site

contain significant abandoned mine features and the eastern portion of the project site is largely undeveloped. Surface conditions in the south-central and eastern portion of the site are generally obscured by dense manzanita. Existing elevations on site range from approximately 2,690 feet above mean sea level (MSL) at the northern boundary of the site along Dorsey Drive, rising to a high point of 2,704 feet above MSL at the highest point of the knoll, down to 2,610 feet above MSL at the southern boundary (where Spring Hill Drive currently terminates, and reaching a low point of 2,550 MSL in the southwestern portion of the site (Appendix J-1).

Mineral Resources

Regional Setting

Nevada County has five classes of mineral deposits, some of which are potentially found in Grass Valley. These include deposits formed by hydrothermal process such as gold-quartz veins, placer deposits, deposits formed by magmatic segregation, industrial minerals formed by diverse processes such as quartz, clay, barite, and carbonate rock, and construction aggregate deposits such as sand and gravel crushed stone deposits (City of Grass Valley 1993). The General Plan Mineral Management Element designates the following areas as regionally significant: North Star Rocks Products, Inc., located on the south side of Idaho Maryland Road just east of State Route 20/49; Grass Valley South area which encompasses a series of cavity-filling quartz-carbonate-ankerite veins and includes the historic Empire and North Star mines; and the Grass Valley northeast area encompassing a complex system of cavity-filling quartz veins that occupy a network of faults and fissures situated between Grass Valley and Weimer fault zones (City of Grass Valley 1993). Additionally, the City contains Mineral Resource Zone (MRZ) designations. All areas within Grass Valley are classified by the State Division of Mines and Geology as MRZ-2 (City of Grass Valley 1999b). Areas classified MRZ-2 are those containing potentially significant mining deposits, where existence of deposits may be actually measured or indicated by site data (MRZ-2a), or inferred from other sources (MRZ-2b).

Project Site Conditions

The site is dotted with mining activity; the mining target was large granite formations below the sediment layer. This includes mine shafts, tailing ponds, waste dumps, and building infrastructure, though little remains beyond the foundations. A site visit conducted by Holdrege & Kull on August 28, 2007 observed the location of the Spring Hill shaft in the central portion of the property, which appeared to be capped with concrete. Two additional shafts were observed on the project site; one approximately 500 feet northeast, which appeared to have been backfilled or capped and the second approximately 400 feet southwest was 10–15 feet wide and open to a depth of 15 feet or greater. A bin foundation, approximately 10 feet by 15 feet by 8 feet high, was observed between the Spring Hill shaft and the mill located to the southeast of the shaft. The mill foundation,

approximately 50 feet by 75 feet with concrete wall remnants up to 6 feet high was observed approximately 100 feet east of the bin foundation. Mill tailings were observed in the central and western portions of the site down slope of the mill foundation and apparent glory holes associated with excavation spoils were observed in the eastern portion of the site (Appendix J-1).

Soils

Soil type is one criterion used to evaluate potential impacts of development. Soils are typically considered for their resource value in agricultural production or for their potential development characteristics or constraints. Some soils are more stable under varying conditions and are better suited for development, while others are more susceptible to erosion and/or are subject to expansion under certain soil moisture conditions.

Regional Setting

Grass Valley and the surrounding region are located in an area of mountainous upland soils with nine soil associations occurring in Nevada County (City of Grass Valley 1999a). Of these nine associations four are commonly found in Grass Valley: Josephine-Sites-Mariposa association in central city and to the east, Secca-Boomer association northeast of the central city, Aiken-Cohasset association northwest of the center city, and Boomer-Sites-Sobrante association southeast of the central city (City of Grass Valley 1999a).

Project Site Conditions

According to the 1993 United States Department of Agriculture (USDA) Soil Survey of Western Nevada County, soil conditions across a majority of the site are mapped as Dubakella-rock outcrop complex, 5 to 50 percent slopes (Appendix J-1). Based on the degree of the slope, runoff is medium to rapid and the erosion hazard is low to moderate. Dubakella soil generally consists of brown, gravelly heavy loam to gravelly clay loam from the surface to an approximate depth of 10 inches. This layer is underlain by dark yellowish brown and brown, very cobbly clay to an approximate depth of 21 inches. Below this cobbly clay loam is weathered ultrabasic rock (Appendix J-1). The central portion of the site is mapped as “Placer Diggings”; however, based on the identification of past hard rock gold mining in this area this classification appears to be incorrect (Appendix J-1).

A small area in the eastern portion of the site is mapped Sites loam, 9 to 15 percent slopes, which has a medium runoff potential and moderate erosion hazard (Appendix J-1). Sites Loam generally consists of an approximately 12-inch thick surface layer of brown and yellowish-red heavy loam. This heavy loam is underlain by yellowish-red loam, red clay and light clay to an approximate depth of 78 inches. The loam, clay and light clay is further underlain by weathered metasedimentary and basic rock (Appendix J-1).

Saturated ground or seeps were not observed on the project site during the August 28, 2007 site visit conducted by Holdrege & Kull; however, it is likely that seepage would be encountered in excavations that reveal the point of contact between surface soil and weathered rock (Appendix J-1).

Seismicity

Regional Setting

Faults within California are classified as pre-quaternary (older than two million years), quaternary (younger than two million years), or historic (less than 200 years). Faults in the County's western half are pre-quaternary, while quaternary and historic active faults are found in the eastern portion of the County near Truckee (Quad Knopf 1998). The project site is located in the County's western half, which is in the low intensity zone for earthquake severity (DOC 2003). Neither Placer County nor Grass Valley is on the list of Cities and Counties affected by an Alquist-Priolo earthquake fault zone (DOC 2010).

Project Site Conditions

There are no known active faults beneath or near the project site, and no active fault trace is known to pass beneath the project site. The site is located within the Foothills Fault System, a type C fault zone (Appendix J-1). Type C denotes a fault with low seismicity and a low occurrence rate. The Foothills Fault System is generally believed to have originated from tectonic forces exerted by the uplift of the Sierra Nevada Mountain Range and not by the tectonic forces of plates moving past one another, as is typical of most California faults (City of Grass Valley 1999a). The Foothills Fault system is technically considered potentially active due to evidence of surface displacement (Spenceville and Oroville earthquakes) in the last 1.6 million years (City of Grass Valley 1999a). However, recent studies conducted along the Bear Mountain fault segment near Auburn indicate that the seismic hazard related to the system is low (City of Grass Valley 1999a). While not improbable, it is unlikely that a large magnitude earthquake would occur along this fault system given the recent studies, lack of recent movement, and lack of tectonic plate movement (City of Grass Valley 1999a). The closest fault line is Cleveland Hill fault near Oroville, approximately 26 miles northwest of the project site. Ground movement from earthquakes at an intermediate distance and from distant earthquakes could still be felt in Grass Valley.

Geologic Hazards

Landslides

Landslides may be triggered by oversaturated soils (after heavy rains) or by earthquakes. Several factors can affect the susceptibility of a slope to failure, including (1) steepness of the slope; (2) strength and bulk density of the soil or bedrock; (3) width, orientation, and pervasiveness of bedrock fractures,

faults, or bedding planes; (4) prevailing groundwater conditions; and (5) type and distribution of vegetation. Landslide potential is highest in steeply sloped areas, particularly those areas underlain with saturated and unconsolidated soil. Slopes at the project site range from 5 to 50 percent for Dubakella soils and 9 to 15 percent for Sites loam. Although slope movements can occur in any type of rock material, certain bedrock formations are more susceptible to such movement; generally, this type of bedrock is not found in the western portion of the County (Quad Knopf 1998).

Erosion

Soils throughout the City generally exhibit moderate erosion potential, particularly when exposed on embankment faces and slopes. Each of the three soil types occurring within the project site also exhibit moderate erosion potential. Erosion is typically most pronounced in areas of unconsolidated alluvial soils adjacent to waterways, and therefore, subject to hydraulic erosive forces and areas of soil denuded of vegetation, typically associated with construction or agricultural activities. The effects of erosion range from nuisance problems, such as increased siltation in storm drains, to extreme cases where watercourses are downcut and gullies develop that can eventually undermine adjacent structures or vegetation.

Seiche

Seiches are earthquake-generated waves within enclosed or restricted bodies of water. However, because no sizable lakes or reservoirs are present in the planning area, there are no seiche hazards in the City, including at the project site.

Subsidence

Subsidence is caused by surface land sinking into subsurface holes or fissures and may be caused by a variety of natural conditions in combination with human activity. In Grass Valley, the primary cause of actual and potential subsidence is previous underground withdrawal of material from mining (City of Grass Valley 1999b). Susceptibility of mine shafts to subsidence primarily depends on the water content of the soil above and depth and physical condition of the shaft (City of Grass Valley 1999b).

Naturally-occurring Asbestos

The project site contains serpentine rock formations from the mafic and ultramafic era. In the Sierra Nevada foothills area, ultramafic rock and serpentinite are associated with naturally occurring asbestos (NOA) minerals such as chrysotile, actinolite, and tremolite. Materials containing NOA can become a public health hazard if the rock is broken and the asbestos fibers or dust become airborne. Refer to Chapter 15, Hazards and Hazardous Materials, for additional discussion of the potential for naturally-occurring asbestos to be present, regulatory guidance for

managing naturally-occurring asbestos, and analysis of the potential for naturally-occurring asbestos to be released to the air during project construction.

Seismic Hazards

Surface rupture

The Alquist-Priolo Earthquake Fault Zoning Act was passed in 1972 and is intended to mitigate the hazard of surface faulting to structures for human occupancy. The California Geological Survey designates earthquake fault zones around the surface traces of active faults and publishes maps delineating these zones. Each earthquake fault zone extends approximately 200 to 500 feet on either side of the mapped fault trace. Surface rupture during earthquakes is typically limited to those areas immediately adjacent to the fault on which the event is occurring. The project site is not located in an established Alquist-Priolo fault zone (DOC 2010). The project site is located within the Foothill Fault System, but there are no known active faults beneath or near the project site. As discussed above, while the Foothills Fault System is technically considered potentially active, it is considered unlikely that a large magnitude earthquake would occur in this fault system (City of Grass Valley 1999a).

Groundshaking

The most serious direct earthquake hazard is the damage or collapse of buildings caused by groundshaking, which, in addition to property damage, can cause injury or death. Groundshaking is the vibration that radiates from the epicenter of an earthquake. The severity of groundshaking and its potential to cause damage to buildings is determined by several factors:

- The nature of the underlying soil and geology
- The location of the epicenter of the earthquake
- The duration and character of the ground motion
- The structural characteristics of a building
- The quality of workmanship and materials used in buildings

While it is unlikely that a large magnitude earthquake would occur in the Foothills Fault System, ground movement from earthquakes at an intermediate distance (i.e., the Truckee earthquake of 1968) and from distant earthquakes (i.e., the Winters-Vacaville 1892 event) could still be felt in Grass Valley. The primary tool that seismologists use to describe future ground-shaking hazards is a probabilistic seismic hazard assessment (PSHA). The U.S. Geological Survey (USGS) uses PSHA to generate a probability map for groundshaking based on the range of possible earthquake sources and estimates of their characteristic magnitudes. The USGS California Seismic Hazard map depicts values of the peak ground acceleration (PGA) based on a 2% probability of occurrence

in the next 50 years. Based on this map, the project site is expected to have a 2% probability of exceeding a PGA of 0.2g-0.3g in the next 50 years (USGS 2014). PGA on this map range from zero to greater than 0.5g indicating that 0.2g-0.3g is a moderate probability for groundshaking to occur at the project site.

Ground failure. Seismic related ground-failure could include liquefaction and lateral spreading, which occurs in unconsolidated basin deposits (i.e., silt, sand, and gravel) that are under saturated conditions.

Paleontological Resources

Paleontological resources are subsurface flora and fauna fossil resources from Plio-Pleistocene era less than 600,000 years ago. They include the fossilized remains or impressions of prehistoric plants and animals. They are valuable, nonrenewable, scientific resources used to document the existence of extinct life forms and to reconstruct the environments in which they lived. Fossils can be used to determine the relative ages of the depositional layers in which they occur and of the geologic events that created those deposits.

No state or local agencies have specific jurisdiction over paleontological resources or require a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth moving on state or private lands in a project site.

In the context of the California Environmental Quality Act (CEQA), fossils of land-dwelling vertebrates and their environment are considered important (i.e., significant) paleontological resources. Such fossils typically are found in river, lake, and bog deposits, although they can occur in nearly any type of sedimentary deposit.

12.2 REGULATORY SETTING

Federal Regulations

The Clean Water Act, administered by the U.S. Army Corps of Engineers, regulates soils disturbance as it affects wetlands and other waters of the United States. The National Pollutant Discharge Elimination System is a federal regulation intended to protect surface water quality. These regulations may influence the extent and methodology of soil disturbance allowed to occur on-site. However, since the intent of these regulations is primarily to protect hydrologic and biological resources, they are discussed in Chapter 6, Biological Resources, and Chapter 13, Hydrology and Water Quality.

State Regulations

Building Codes and Standards

Construction within the City is required to conform to the current version of the California Building Code (CBC) (California Building Standards Commission 2016), which is based on the International Building Code (IBC) (ICC 2015) used nationwide. The CBC incorporates the IBC and includes numerous more detailed and/or more stringent regulations to reflect conditions specific to the state of California. Where no other building codes apply, the IBC/CBC regulates excavation, foundations, and retaining walls, and regulates grading activities, including drainage and erosion control and construction on expansive soils.

In addition, Section 19100 et seq. of the California Health and Safety Code, State Earthquake Protection Law, requires that structures be designed to resist stresses produced by lateral forces caused by wind and earthquakes. Specific minimum seismic safety requirements are set forth in the IBC/CBC. The IBC/CBC identifies seismic factors that must be considered in structural design. It provides seismic design and construction standards applicable for designated seismic zones in California based on the seismic event with potential to occur in each zone.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act, codified in California Public Resources Code, Sections 2621–2630, prohibits construction of buildings used for human occupancy on the surface of active faults. This act also requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps to be used by local agencies in regulating and planning construction. Earthquake fault zones are designated by the California Geological Survey and are delineated along traces of faults where mapping demonstrates surface fault rupture has occurred within the past 11,000 years. The project site is not included in an Alquist-Priolo Earthquake Fault zone (DOC 2010).

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act, codified in California Public Resources Code, Sections 2690–2699.6, requires the California Department of Conservation to identify Seismic Hazard Zones within the state based on the probable seismic shaking exposure and soil conditions in a given area. Areas that may be subject to substantial shaking, or where soil conditions indicate the area may be prone to liquefaction or earthquake-induced landslides, are included in Seismic Hazard Zones. There are no Seismic Hazard Zones mapped in Nevada County (DOC 2015).

Other State Regulations

Similar to the Clean Water Act discussed previously, the State Water Resources Control Board and California Department of Fish and Wildlife have developed standards and guidelines related to disturbance of hydrologic and biological resources. These standards and guidelines may influence the extent and methodology of soil disturbance allowed to occur on site. In particular, these agencies require the use of best management practices (BMPs) to control soil erosion from entering waterways. Because the intent of these standards and guidelines is primarily to protect hydrologic and biological resources, they are discussed in Chapter 6, Biological Resources, and in Chapter 13.

Consideration of paleontological resources is required by CEQA (see Appendix G in the CEQA Guidelines (14 CCR 15000 et seq.)). Other state requirements for paleontological resource management are found in California Public Resources Code, Chapter 1.7, Section 5097.5, Archaeological, Paleontological, and Historical Sites. This statute specifies that state agencies may undertake surveys, excavations, or other operations as necessary on state lands to preserve or record paleontological resources. This statute does not apply to the project because none of the property is state owned.

Local Regulations

Grass Valley General Plan

The Grass Valley 2020 General Plan Safety Element identifies goals (SG), objectives (SO), policies (SP) and implementation measures (SI) specifically related to the treatment of geologic and soil resources and safety considerations related to geology and seismicity. The following goal, objectives and policy are relevant to the proposed project:

1-SG: Reduce the potential risk of death, injury, property damage, and economic and social dislocation resulting from hazards.

1-SO: Assurance of high level of protection from geologic and seismic hazards for all residents, structures and vital services.

2-SO: Reduction of risk from exposure to hazards related to past and present mining, including shafts, tunnels, tailings and toxic materials.

4-SP: Based on location or probable need, require development plans in mined areas to include in-depth assessments of potential safety, including mine-related excavations, and health hazards and accompanying mitigation measures.

City of Grass Valley Grading Ordinance

The Grass Valley Grading Ordinance is detailed in Chapter 17.60 of the Grass Valley Development Code and establishes requirements for grading, erosion control, and stormwater management (City of Grass Valley 2007). Development projects must comply with these requirements during grading and construction. The primary goals of the Grading Ordinance are to establish standards in order to minimize hazards to life and property; protect against soil erosion, and the pollution of watercourses with nutrients, sediment, or other earthen materials; protect the safety, use and stability of public rights-of-way; protect fish and wildlife habitat; protect the scenic character and value of the City; and ensure that the intended use of a site for which a grading permit is sought complies with the General Plan and any specific plan.

The Grading Ordinance requires a grading permit for most projects within the City. Grading permit conditions are detailed in Section 17.60.050 of the Grass Valley Development Code. These conditions include requirements for control of dust, erosion, sediment and noise, and for mitigating adverse environmental impacts identified in any environmental review document. When issuing a grading permit, the City may impose any condition necessary to protect public health and welfare and avoid any hazardous conditions.

12.3 IMPACTS

Methods of Analysis

The project setting was developed based on a site-specific geotechnical evaluation by Holdrege & Kull conducted in 2007 (Appendix J-1), and by reviewing available geological documentation for the project area from the California Geological Survey, the US Geological Survey, the US Department of Agriculture, the City of Grass Valley General Plan 2020 and the General Plan EIR. The understanding of potential impacts resulting from the proposed project was based on analysis of these documents.

CEQA requires that the project be analyzed for potential impacts including exposing people or property to risk from seismic events or ground instability, resulting in soil erosion, resulting in the alteration of existing land forms, or destroying paleontological resources.

Significance Criteria

Potential impacts associated with soils, geology, and seismicity have been evaluated using the following criteria, based on Appendix G of the CEQA Guidelines. The proposed project would have a potentially significant impact related to geology, seismicity, and soils if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
  - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
  - Strong seismic ground shaking.
  - Seismic-related failure including liquefaction.
- Be located on a geologic unit or soil that is unsuitable for the project, resulting in potential on-site or off-site landslide, lateral spreading, excessive expansion, subsidence, liquefaction or collapse.
- Result in substantial soil erosion or the loss of topsoil during construction activities and following completion of the proposed project.
- Result in substantial alterations to existing landforms.
- Directly or indirectly destroy paleontological resources.

Impact Analysis

Impact 12-1: Would the project result in exposure to potential substantial adverse effects involving rupture of a known earthquake fault, strong seismic ground shaking or seismic-related ground failure including liquefaction

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Both Alternative A and Alternative B would occur on the same project site and would be subject to the same seismic risks and conditions. The California Geological Survey designates the western portion of Nevada County as a low intensity zone for earthquake severity (DOC 2003). Further, neither Placer County nor Grass Valley is on the list of Cities and Counties affected by an Alquist-Priolo earthquake fault zone (DOC 2010). The project site is located in the Foothills Fault System, as described above, but there are no active faults that run directly beneath or near the project site.

The General Plan EIR concluded that it is unlikely a large magnitude earthquake would occur along this fault system given the recent studies, lack of recent movement, and lack of tectonic plate movement (City of Grass Valley 1999a). Therefore, risk of exposure to substantial adverse effects involving rupture of a known earthquake fault is **less than significant**.

The California Geological Survey maps those areas that may be subject to substantial shaking, or where soil conditions indicate the area may be prone to liquefaction; there are no Seismic Hazard Zones mapped in Nevada County (DOC 2015). Ground movement from earthquakes at an intermediate distance and from distant earthquakes could still be felt in Grass Valley. The USGS California Seismic Hazard Map indicates that the project site is located in an area with moderate potential to experience groundshaking resulting from seismic activity in the vicinity (USGS 2014). In regards to earthquake safety, the California Building Code, Title 24 (1616A and 1803A.6) provides minimum standards that prioritize safety and the reduction of life loss and injury. Therefore, compliance with the CBC, as required by City standards, would ensure that the potential for impacts to occur would remain **less than significant**.

Impact 12-2: Would the project be located on a geologic unit or soil that is unsuitable for the project?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Both Alternative A and Alternative B would occur on the same project site and would be subject to the same soil-related risks and conditions. Site topography is relatively flat to gently sloping, with elevations that range from 2,580 to 2,704 feet above MSL. According to the Preliminary Geotechnical Engineering Report completed for the project site, due to the presence of waste rock in the existing fill, it is likely not suitable to support structures on the project site (Appendix J-1). The Removal Action Work Plan (RAW, Appendix J-3A) dictates that 1,700 cubic yards of contaminated soil and mine waste should be removed from the project site and taken to a facility that is permitted to handle contaminated soil. The remaining approximately 64,000 yards of contaminated soil and mine waste located west of the former mill site would be buried, covered with 10 feet of clean soil and then capped with either the foundations of a building or parking lot. While saturated ground or seeps were not observed on the project site, the geotechnical report indicated that seepage would likely be encountered during the rainy season or in excavations that reveal the surface soil/weathered rock contact (Appendix J-1).

The geotechnical report recommends excavation and fill placement methods to ensure that fill replacing the contaminated soil and rock waste is adequate to handle the proposed structures.

Material used for fill construction would consist of uncontaminated, predominantly granular, non-expansive native soil. The geotechnical report recommends completion of a Design-Level Geotechnical Review which would evaluate deeper areas of existing fill to determine what approaches, such as fill replacement or the use of deep foundation systems, are appropriate.

Please refer to Chapter 15, Hazards and Hazardous Materials, specifically Impact 15-2, for a discussion regarding the hazards associated with naturally occurring asbestos. With oversight by the appropriate federal, state, and local agencies, and compliance with applicable regulations regarding hazardous materials, there would be limited potential for a reasonably foreseeable upset or accident associated with naturally occurring asbestos during remediation, construction, or operation.

Impact 12-3: Would the project result in substantial erosion or loss of topsoil during construction activities or following completion?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Both Alternative A and Alternative B would require substantial grading which has the potential to result in the loss of topsoil or increased erosion. The RAW (Appendix J-3A) prepared for the project site concluded that approximately 1,700 cubic yards contaminated soils and mine rock waste would be removed from the site and an additional 64,000 cubic yards would be buried on site. The majority of earthwork would be completed using conventional construction and trenching equipment. Areas of the site containing moderately or slightly weathered rock may be difficult to trench with conventional equipment and require special excavation techniques.

Both Alternatives are required to prepare a Stormwater Pollution Prevention Plan (SWPPP) in accordance with the City's National Pollution Discharge Elimination System (NPDES) permit. Provisions of the SWPPP would require best management practices (BMPs) to control erosion and runoff, and are discussed further in Chapter 13. In addition, both Alternative A and Alternative B would be required to obtain a grading permit from the City and comply with the provisions of the Grading Ordinance. These provisions require compliance with City BMPs for erosion control including slope surface stabilization, use of plastic coverings, removal of off-site sediments, and installation of erosion control devices. Further recommendations are provided in the Preliminary Geotechnical Engineering report for erosion control on the graded portions of the site.

Therefore, preparation of a SWPPP, compliance with the NDPES permit, and receipt of a grading permit from the City, both Alternative A and Alternative B will have a less-than-significant impact.

Impact 12-4: Would the project substantially alter existing landforms?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Construction of either Alternative A or Alternative B would require substantial grading of the project site. Both alternatives would place similar amounts of development throughout the project site and would require similar grading and construction of retaining walls. The preliminary grading plan shows that up to 40 feet of cut is proposed in the central portion of the property and up to 60 feet of fill in the southwestern portion of the property. With the exclusion of soil removal as part of the hazard remediation plan discussed above, it is expected that the cuts and fills will balance. The project includes installation of multiple rock retaining walls along the perimeter of the project site ranging from two to six feet tall. These retaining walls would utilize rocks from the project site and be designed in accordance with the Grass Valley Design Guidelines and Development Code. Retaining walls would be constructed in the following locations: one wall along the southeastern edge of the project site just east of the detention basin; two walls west of the existing Spring Hill Drive extending to the western edge of the parking lot; three walls in the northwestern corner adjacent to the Dorsey Drive off-ramp; two walls along the norther border of the site west of the proposed entrance and exit along Dorsey Drive; one wall along the eastern border adjacent to pad four; and one wall along the eastern border from Pad 1 to Shop E.

Alteration of the site topography is an unavoidable result of development on the project site. Grading for building sites and dwelling units and excavations for drainage features and utility infrastructure would result in significant changes to the site's current condition. The City's Grading Ordinance prohibits mass grading and limits cuts and fills to the minimum amount necessary to provide stable embankments for required parking areas, street right-of-ways, structural foundations and adequate residential yards or outdoor areas incidental to a non-residential use. The ordinance also requires grading to be designed to maximize retention of natural landforms and features and have final elevations and contours that blend with adjacent natural terrain. The proposed grading plan would minimize changes in site topography and provide transitions between graded areas and adjacent properties as required by the City's Grading Ordinance. Impacts associated with alteration of existing topography would be **less than significant**.

Impact 12-5: Would the project directly or indirectly destroy paleontological resources?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially Significant	Potentially Significant
Mitigation measures:	Mitigation Measure 12a	Mitigation Measure 12a
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Alternative A and Alternative B would occur on the same project site, would involve similar amounts of grading, and therefore would pose the same risk for uncovering paleontological resources during construction. Although the project site is not known to contain any paleontological resources, construction would involve earth disturbing activities such as grading that have the potential to uncover previously unknown paleontological resources. The potential for a site to support paleontological resources depends on the location, topographic setting, and particular geologic formation in which a site is located. Fossils generally occur in the Sierra Nevada in rocks that are young in age (less than 50 million years old). According to the University of California, Museum of Paleontology, the closest fossil sites to the project site are a few miles to the east and north of the City of Grass Valley (City of Grass Valley 2011). The prior disturbance of the project site associated with operations of the Spring Hill Mine is likely to have including removal, disturbance, and/or destruction of any paleontological resources that were present at the site. However, there is a potential for paleontological resources to occur on site. Mitigation Measure 12a requires that site remediation and construction activities be halted in the event that paleontological resources are encountered, that the resources be evaluated by a qualified professional, and that data recovery or other resource management recommendations of the qualified professional are implemented. With implementation of Mitigation Measure 12a, both Alternative A and Alternative B would have a **less-than-significant** impact on paleontological resources.

Impact 12-6: Would the project make a considerable contribution to cumulative geology, soil, seismic, or paleontological impacts?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

A cumulatively considerable contribution to geologic, soil, seismicity, and paleontological impacts would result if the proposed project contributed an incremental increase in these effects that, when taken into account with concurrent projects, results in a significant net effect. The geographic context for the analysis of impacts resulting from geologic hazards and potentially unstable soils is generally site-specific, rather than cumulative in nature, because each project site has a different

set of geologic considerations that would be subject to uniform site development and construction standards. Other past, present, and reasonably foreseeable development in the area is described in Chapter 3, Land Use. It includes development of approximately 430 acres within the Town, which could contribute to soil erosion effects. However, all projects within the City are required to comply with the Municipal Code, which requires that grading occur subject to an erosion and sediment control plan and implementation of BMPs. Additionally, grading permits are issued by the City, which include conditions of approval requiring incorporation of measures necessary to ensure that geotechnical hazards, seismic hazards, and soil erosion is minimized during and following construction. These requirements of the Municipal Code would apply to all other development projects within the City, ensuring that potential cumulative impacts resulting from geological, seismic, and soil conditions would be reduced to less than significant on a site-by-site basis by modern construction methods and code requirements. As such, the potential for cumulative geotechnical hazards, soil conditions, and paleontological resources to affect on-site or off-site areas would be minimal, resulting in **less-than-significant** impacts.

12.4 MITIGATION MEASURES

Mitigation Measure 12a: If paleontological resources are encountered during site remediation or construction, work shall be halted within 100 feet of the resource and the construction contractor must notify the City of Grass Valley Community Development Department of the resource within 24 hours. The project applicant shall retain a qualified paleontologist to evaluate and record the resource and make recommendations for the appropriate treatment of the resource, in consultation with the City. Construction workers shall not collect paleontological resources. Appropriate treatment may include collection and processing of "standard" samples by a qualified paleontologist to recover micro vertebrate fossils; preparation of significant fossils to a reasonable point of identification; and depositing significant fossils in a museum repository for permanent curation and storage, together with an itemized inventory of the specimens.

12.5 REFERENCES CITED

California Building Standards Commission. 2013. *2013 California Building Code*. July 2013. Accessed May 4, 2016. Available at http://www.bsc.ca.gov/Home/Current2013Codes.aspx

California Health and Safety Code Section 19100

California Public Resources Code Chapter 1.7 Section 5079.50

City of Grass Valley. 1993. *City of Grass Valley General Plan Mineral Management Element*. Adopted August 24, 1993.

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

City of Grass Valley. 1999b. *Grass Valley General Plan Update Environmental Impact Report*. Prepared for the City of Grass Valley by Quad Knopf. August 1999.

City of Grass Valley. 2007. "City of Grass Valley Municipal Code – Title 17 - Development Code Chapter 17.60 Grading Ordinance." March 6, 2007. Accessed May 4, 2016. Available at http://www.cityofgrassvalley.com/government/municipal-codes

City of Grass Valley. 2011. Draft Environmental Impact Report for the Proposed Grass Valley Redevelopment Plan Fourth Amendment. January 2011.

Department of Conservation California Geological Survey (CGS). 2003. "Map - Earthquake Shaking Potential for California." Spring 2003.

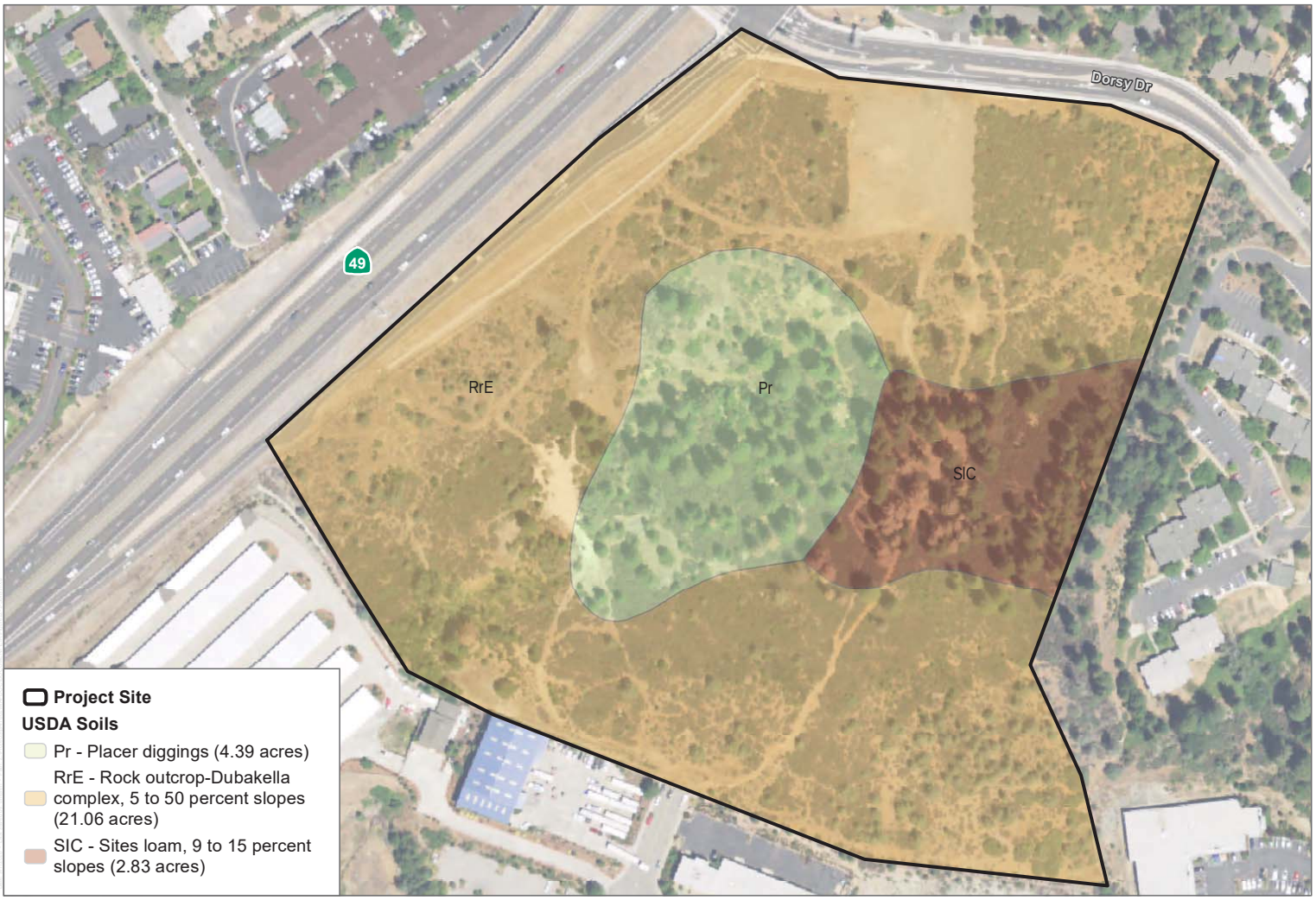
Department of Conservation CGS. 2010. "Table 4 - Cities and Counties Affected by Alquist-Priolo Earthquake Fault Zones as of January 2010." Accessed May 3, 2016.

Department of Conservation CGS. 2015. "Seismic Hazards Zonation Program – Northern California cities and counties affected by SHMP Zones." Last updated 2015. Accessed May 4, 2016. Available at

International Code Council (ICC). 2015. *2015 International Building Code*. Third printing October 2015. Available at http://codes.iccsafe.org/app/book/toc/2015/I-Codes/2015%20IBC%20HTML/index.html

Quad Knopf. 1998. *City of Grass Valley General Plan Update Background Report*. Prepared November 1998.

US Geological Survey. 2014. "USGS Earthquake Hazards Program California: California Seismic Hazard Map." 2014. Accessed May 6, 2016.



SOURCE: USDA 2016 & 2007

DUDEK

0 100 200 Feet

FIGURE 12-1

USDA Soils

Dorsey Marketplace EIR

CHAPTER 13
HYDROLOGY AND WATER QUALITY

This section evaluates impacts of the proposed Dorsey Marketplace (proposed project) in relation to drainage and water quality. The existing hydrology, water quality, and drainage of the project site are described, and associated regulatory requirements are identified and potential impacts evaluated. The potential for both localized and regional flooding to occur and emergency evaluation in the event of a regional flood event are also evaluated. The analysis considers two project alternatives. Alternative A would provide for up to 90 apartment units, approximately 178,960 square feet of commercial space, and a 3,200-square-foot clubhouse. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and a 3,200-square-foot clubhouse.

Information referenced to prepare this section includes:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- *Grass Valley General Plan Background Report* (Quad Knopf 1998)

Three comments related to hydrology, drainage, and water quality were received in response to the Notice of Preparation for this EIR. Caltrans requested the EIR's drainage study address potential downstream storm drainage impacts on Caltrans and City facilities. The Wolf Creek Community Alliance emphasized the importance of on-site stormwater retention and water quality measures, stating that the project is a few parcels uphill of the Wolf Creek riparian corridor. The CVRWQCB comment stated permitting requirements that may be applicable to the project. The Notice of Preparation and comment letters received in response to it are provided in Appendix A.

13.1 ENVIRONMENTAL SETTING

Regional Hydrologic Context

The City of Grass Valley, including the project site, is located within the Wolf Creek drainage basin in the Bear River Watershed. The Bear River Watershed covers an area of 300 square miles and is situated between two larger watersheds, the Yuba to the north and the American to the south. The average winter flows during the highest rainfall years is 3,400 to 5,600 cubic feet per second (cfs), in normal rainfall years is 600-800 cfs, and in the driest years is 20-65 cfs (Sacramento River Watershed Program 2016). The Bear River watershed is a part of the larger Sacramento River Hydrologic Region and the City also falls within the Mountain Counties Hydrologic region overlay zone (DWR 2011).

The south fork of the Wolf Creek and Little Wolf Creek drain the eastern and southern portion of the City and discharge into Wolf Creek in the central Grass Valley area (City of Grass Valley 1999a). Wolf Creek tributaries located within the City include French Ravine, Rhode Island Ravine, Slide Ravine, Murphy Hill, Matson Creek, South Fork Wolf Creek, Little Wolf Creek, Unnamed Ravine, Woodpecker Ravine and Olympia Creek.

The 26.8-acre project site generally slopes toward the south and southwest from a relatively flat-lying northern portion of the site, with elevations ranging from approximately 2,550 feet above mean sea level (MSL) in the southwestern portion to approximately 2,690 feet above MSL in the northern portion of the site. Drainage within the project site generally flows from north to south. Stormwater runoff from the site discharges in two main locations: an existing 24-inch pipe that carries runoff to the west and south generally along the route of State Route (SR) 20/49, and a rock lined swale that carries runoff to the east and south.

Groundwater

Regional Groundwater

The project site is within the Sacramento Hydrologic region and the Mountain Counties Hydrologic overlay zone (DWR 2011). In general, groundwater in this area is inadequate and unreliable because the fractured bedrock formations that compose much of the Sierra Nevada foothills and western slopes of the mountains are poorly suited to contain large quantities of groundwater (CABY 2014). Groundwater makes up only approximately 10 percent of the overall water supply in the Mountain Counties Hydrologic overlay area (CABY 2014). However, many rural homes, farms and ranches throughout this region rely on groundwater from individual wells.

Surface Water

Regional Surface Hydrology

The project site falls within the Wolf Creek drainage, which is part of the larger Bear River watershed. The Bear River originates about 20 miles west of the crest of the Sierra Nevada in northern Placer County and is fed by the Drum Canal from Spaulding Lake, which enters the river at the Drum Afterbay, a few miles downstream of the headwaters (Sacramento River Watershed Program 2016). The Middle Bear River flows out of the Drum Afterbay and enters Dutch Flat Reservoir. Bear River flows roughly parallel to Interstate 80 (I-80) and just before the river flows into Rollins Reservoir, it merges with Steephollow Creek, the largest tributary in the upper watershed. Bear River continues to flow southwest toward Lake Combie near the community of Meadow Vista. Wolf Creek drains southerly into Bear River, which heads continues west and enters into Camp Far West Reservoir, the largest water body in the Bear River Watershed. Eventually, the Bear River joins Feather River south of Yuba City and Marysville.

Project Site Surface Hydrology

The Preliminary Geotechnical Engineering Report (Appendix J-1) did not identify any areas of saturated ground or seeps on the project site. However, it is noted that seepage may be encountered in excavations that reveal the contact between relatively permeable surface soil and resistant volcanic rock.

Local Flooding

Grass Valley is located near the headwaters of Wolf Creek and its tributaries, which minimizes the quantity and velocity of stormwater flows through the City (City of Grass Valley 1999a). Future development upstream could increase the downstream flooding if appropriate mitigation measures are not applied. Flooding during the 100-year flood event is limited to a relatively narrow area along Wolf Creek and its tributaries. The Grass Valley flood damage protection ordinance (Chapter 15.52 of the Municipal Code) establishes construction standards for anchoring, materials, elevation and flood proofing of any structures building within the 100-year flood plain.

Regional Surface Water Quality

The project site is located in the Sacramento River Hydrologic region and within the Bear Creek watershed. Some areas of the Bear Creek watershed have been damaged by historic hydraulic mining and mercury contamination. Waterways within the watershed listed under CWA Section 303(d) as impaired bodies for mercury contamination include Upper Bear River, Steephollow Creek, Lake Combie, Wolf Creek, French Ravine, Camp Far West; Wolf Creek and French Ravine are listed for fecal coliform and bacteria, respectively (Sacramento River Watershed Program 2016). The South Fork American River is listed for mercury contamination from below Slab Creek Reservoir to Folsom Reservoir, and the Cosumnes River is listed in its entirety for aquatic exotic species (CABY 2014).

13.2 REGULATORY SETTING

Federal Regulations

Clean Water Act

The Clean Water Act (CWA) is a 1977 amendment to the Federal Water Pollution Control Act of 1972, which establishes the basic structure for regulating discharges of pollutants to waters of the United States. The objective of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." Important sections of the act are as follows:

- CWA Sections 303 and 304 provide water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, California is required to develop a list of impaired water bodies

that do not meet water quality standards and objectives. California is required to establish Total Maximum Daily Loads (TMDLs) for each pollutant/stressor, which defines how much of a specific pollutant a give water body can tolerate and still meet relevant water quality standards.

- CWA Section 401 (Water Quality Certification) requires an applicant for any federal permit that proposes an activity, which may result in a discharge to waters of the United States, to obtain certification from the state that the discharge will comply with other provisions of the act.
- CWA Section 402 establishes the NPDES, a permitting system for the discharge of any pollution into the waters of the United States. This permit program is administered by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). NPDES permits are described further below.
- CWA Section 404 establishes a permit program for the discharge of dredge and fill material into waters of the United States, which include stream courses and jurisdictional wetlands. This permit program is jointly administered by the U.S. ACOE and the EPA.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA, the U.S. ACOE, the Bureau of Reclamation, and the major federal land management agencies such as the U.S. Forest Service and the Bureau of Land Management. At the state level, the California EPA and its sub-agencies, including the SWRCB have been delegated primary responsibility for administering and enforcing the CWA in California.

NPDES Stormwater Discharge Permits

Surface water quality is regulated by NPDES, which was developed by the U.S. Environmental Protection Agency (EPA) in accordance with Section 303 of the CWA. In California, the SWRCB administers the NPDES program, with implementation and enforcement by each RWQCB. The NPDES program, designed to protect surface water quality, is applicable to all discharges to waters of the United States, including stormwater discharges associated with municipal drainage systems, construction activities, industrial operations, and "point sources" (such as wastewater treatment plant discharges and other direct discharges to water bodies). In April 2003, the SWRCB adopted an NPDES Phase II General Permit for the Discharge of Stormwater from small municipal separate storm sewer systems (MS4s) to provide NPDES permit coverage to municipalities that were not covered under the NPDES Phase I Rule for municipalities serving more than 100,000 people.

The Central Valley RWQCB issues NPDES permits for construction activities involving disturbance of 1 acre or more. The conditions of the state's General Permit for stormwater discharges associated with construction activities, Order Number 99-28-DWQ, require

development and implementation of a stormwater pollution prevention plan (SWPPP) that must address the following:

- Plans for implementation of structural and operational best management practices (BMPs) to prevent and control impacts to surface water during construction
- Inspection and maintenance of BMPs throughout all phases of construction
- Monitoring of runoff quality during all phases of construction
- A plan for preventing and controlling post-construction impacts to runoff quality

Federal Antidegradation Policy

The federal antidegradation policy is designed to protect water quality and water resources. The policy directs states to adopt a statewide policy that includes the following primary provisions: existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; where existing water quality is better than necessary to support fishing and swimming conditions, that quality shall be maintained and protected unless the state finds that allowing lower water quality is necessary for important local economic or social development; and where high-quality waters constitute an outstanding national resource, such as waters of national and state parks, wildlife refuges, and waters of exceptional recreational or ecological significance, that water quality shall be maintained and protected.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is responsible for determining flood elevations based on available studies pursuant to the National Flood Insurance Program Final Rule (44 CFR 59, 61). FEMA is also responsible for developing the Flood Insurance Rate Maps, which are used in the National Flood Insurance Program (NFIP). Participation in the NFIP provides an opportunity for property owners in the community to purchase flood insurance, provided that the community complies with FEMA requirements for maintaining flood protection and managing development in the floodplain.

State Regulations

The Porter-Cologne Water Quality Control Act of 1969

The Porter-Cologne Water Quality Control Act (Porter-Cologne) is the principal law governing water quality regulation in California. This statute established the SWRCB and the nine RWQCBs, which are charged with implementing its provisions. Porter-Cologne establishes a comprehensive program for the protection of water quality and the beneficial uses of water. It applies to surface waters, wetlands, and groundwater and to both point and non-point sources. Porter-Cologne is

found in California Water Code, Section 13000. In addition, California Code of Regulations, Title 23, contains administrative and regulatory elements of water quality and quantity management in California.

The SWRCB allocates rights to the use of surface water and, with the nine RWQCBs, protects water quality in all waters of the state. The SWRCB provides program guidance and oversight, allocates funds, and reviews RWQCB decisions. The RWQCBs are responsible for individual permitting, inspection, and enforcement actions within the nine hydrologic regions. The project site is located within Region 5, the Central Valley River Basin RWQCB.

The act requires a "Report of Waste Discharge" for any discharge of waste to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260 (a) requires that any person discharging waste or proposing to discharge waste that could affect the quality of the waters of the state, to file a Report of Waste Discharge with the applicable RWQCB. For discharges directly to surface waters an NPDES permit is required, which is issued under both state and federal law; while for other discharges to waters of the state (such as groundwater and isolated wetlands), Waste Discharge Requirements (WDRs) are required and are issued exclusively under state law. WDRs typically require many of the same best management practices (BMPs) and pollution control technologies as required by NPDES-derived permits.

Basin Planning

The SWRCB and its nine RWQCBs are responsible for administering and enforcing statutes for the protection and enhancement of water quality, including the Porter-Cologne Act and portions of the CWA. The SWRCB provides state-level coordination of the water quality control program by establishing statewide policies and plans for implementation of state and federal regulations. The nine RWQCBs throughout California adopt and implement Basin Plans that recognize the unique characteristics of each region with regard to natural water quality, actual and potential beneficial uses, and water quality problems.

The *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley* designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed throughout the plan (CVRWQCB 2015). The NPDES and WDR programs regulate construction, municipal, and industrial stormwater and non-stormwater discharges under the requirements of the CWA and the Porter-Cologne Act. The construction stormwater program and the statewide general permit for low-threat discharges are administered by the SWRCB, while the municipal stormwater program is administered by the CVRWQCB. The Basin Plan designates beneficial uses for the Bear River into which the City's stormwater eventually drains via Wolf Creek. Designated uses include water supply, irrigation, stock watering, power, contact recreation, non-contact recreation, warm water habitat and cold water habitat (CVRWQCB 2015).

To comply with the NPDES General Permit for Stormwater Discharges Associated with Construction Activities, project applicants must prepare a Stormwater Pollution Prevention Plan (SWPPP) for review by the Central Valley RWQCB. The SWPPP would include the following four major elements:

1. Identify pollutant sources, including sources of sediment, which may affect the quality of stormwater discharges from the construction site.
2. Identify non-stormwater discharges.
3. Identify, construct, implement in accordance with a time schedule, and maintain BMPs to reduce or eliminate pollutants in stormwater discharges and authorized non-stormwater discharges from the construction site during construction.
4. Identify, construct, implement in accordance with a time schedule, and assign maintenance responsibilities for post-construction BMPs to be installed during construction that are intended to reduce or eliminate pollutants after construction is completed.

State Nondegradation Policy

As required under the federal antidegradation policy, described above, in 1968 the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters of California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety and welfare of the people of the state. The policy provides the following:

- Where the existing quality of water is better than required under existing water quality control plans, such water quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such waters.
- Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements, which would ensure pollution or nuisance would not occur and the highest water quality consistent with the maximum benefit to the people of the state would be maintained.

Local Regulations

City of Grass Valley Stormwater Management Program

The City's Stormwater Management Program (SWMP) was completed in 2003 to comply with the statewide general permit (Small MS4 General Permit) for discharging stormwater in waters of the

United States. The SWMP contains six elements: public education and outreach, public involvement and participation, illicit discharge, construction activities, new development and redevelopment, and municipal operations. The SWMP is designed to eliminate discharges of non-stormwater from illicit connections and illegal dumping; reduce stormwater associated with construction activities and new development or redevelopment; reduce stormwater associated with municipal activities conducted in public rights of ways, open spaces and at publicly operated facilities.

City of Grass Valley Grading Ordinance

The City Grading Ordinance (Title 17, Article 6, Chapter 17.60/17.62 of the City Code) sets forth rules and regulations to prevent and control dust, control land disturbances, and reduce pollution, erosion and sedimentation resulting from construction activities. A dust prevention and control plan is required to be submitted along with a grading plan for review and approval by the City Engineer. The ordinance also specifies best management practices (BMPs) to be implemented at all times during construction and final erosion controls measures to be implemented within 30 days after completion of grading and no later than October 15th (City of Grass Valley 2007).

City of Grass Valley General Plan

The following Grass Valley 2020 General Plan goals (G), objectives (O) and policies (P) from the Conservation and Open Space (COS) elements are applicable to the proposed project and relate to stormwater drainage, water quality, and flood hazards.

2-COSG: Protect, enhance, and restore hydrologic features, including stream corridors, flood plains, wetlands, and riparian zones.

8-COSO: Minimize interference with the natural functions of flood plains and naturally flood-prone areas.

6-COSG: Assure compliance with and understanding of air and water quality regulations and standards.

15-COSO: Protection of ground- and surface water quality.

16-COSO: Inclusion of air and water quality considerations in land use decisions rendered by the Planning Commission and City Council.

6-COSP: Prevent excessive alteration of natural topography.

9-COSP: Carefully regulate development for location in flood hazard areas.

13.3 IMPACTS

Methods of Analysis

An Autodesk Storm and Sanitary Sewer Analysis was prepared for the project site by Genesis Engineering in 2014 (Appendix K) to estimate existing runoff and proposed project runoff, and to identify drainage facilities that would be needed to meet the current City standards. This impact analysis incorporates the results of that study to identify potential proposed project impacts associated with drainage and post-construction water quality.

Significance Criteria

Based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.), potentially significant impacts associated with hydrology and water quality from implementation of the proposed project, including construction and operation phases, have been evaluated with respect to the following significance criteria. Would the project:

- Substantially degrade surface or groundwater quality (i.e., during construction or operation)?
- Cause a substantial increase in rate or volume of runoff leaving the site that would exceed the capacity of existing or planned stormwater drainage systems and result in flooding?
- Expose people or structures, on- or off-site, to a significant hazard of flooding as a result of placing development within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?
- Substantially decrease groundwater recharge, resulting in depressed groundwater levels in the local and/or regional area?

Impact Analysis

Impact 13-1: Would the project substantially degrade surface or groundwater quality?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Project Construction Effects on Surface Water Quality

Project construction activities would be similar under both Alternative A and Alternative B. They would involve remediation of the contaminated soil on site, vegetation removal, grading, building construction, and paving. Without implementation of appropriate control measures, grading

involved in preparing the project site for construction would decrease vegetative cover and potentially increase the rate and quantity of stormwater runoff. This would result in accelerated soil erosion and sediment delivery to the on-site waterway and off-site areas. This could increase the amount of suspended solids in local waterways and contribute to elevated turbidity in portions of the Bear River watershed downstream of the project site. Additionally, leaks or upset of fuel or hydraulic fluid used in construction equipment and outdoor storage of construction materials or spills of paints, solvents, or other potentially hazardous materials commonly used in construction could degrade stormwater runoff quality during construction. Small leaks from construction equipment and building materials would not be expected to result in contamination of groundwater, as they would be likely to break down or dilute in the shallow soil layer and be conveyed to surface water runoff. Large quantities of hazardous materials would be required to be stored in compliance with applicable regulations to prevent or contain any spills. Chapter 15, Hazards and Hazardous Materials, provides further discussion regarding hazardous materials use and storage and the potential for accidental release of hazardous materials.

Pursuant to the requirements of the City's Grading Ordinance (Municipal Code 12.06.120), all construction plans and applications for building permits and grading permits shall consider the potential for erosion and sedimentation at the construction site, and shall include appropriate erosion and sedimentation controls. Appropriate controls shall be determined in accordance with the guidance provided in the California Stormwater Quality Association (CASQA) Stormwater Best Management Practice Handbook and city improvement standards and may include site planning considerations, construction staging and timing, and installation of temporary detention ponds or other treatment facilities.

Additionally, prior to issuance of a grading permit, the applicant would be required to demonstrate coverage for project activities under the SWRCB's NPDES General Permit for Stormwater Discharges Associated with Construction Activities. To obtain coverage under the permit, the project applicant would submit a Notice of Intent with the required permit fee and prepare a SWPPP for review by the Central Valley RWQCB.

In addition, dischargers are also required to inspect construction sites before and after storms to identify stormwater discharge from construction activity, and to identify and implement controls where necessary. Typical BMPs that would be appropriate to implement at the project site may include scheduling or limiting activities to certain times of year, implementing dust control procedures throughout the project area, stabilizing cut and fill slopes as soon as possible, controlling erosion through a variety of means such as mulch and compost blankets, riprap, and installation of sediment retention structures (such as a sediment retention basin), sediment control with the use of measures such as storm drain inlet protection, vegetated buffers, fiber rolls and berms, sediment fencing, and straw or hay bales.

Other temporary BMPs would ensure "good housekeeping" at the project site during construction. These would include cleaning construction equipment and preventing the leakage of fluids, storing materials away from surface water, protecting sensitive areas with sediment barriers or other containment methods, controlling laying of concrete and washing of related equipment, and collecting debris and gravel associated with paving operations. Adequate temporary storm drainage controls would be provided, including on-site drainage containment, the placement of silt fences around construction areas, and constructing temporary sediment basins (as necessary).

Compliance with the City's Grading Ordinance and implementation of the provisions contained in the SWPPP approved by the RWQCB would ensure that potential impacts to water quality due to construction activities would be **less than significant** because all appropriate and necessary BMPs would be implemented to avoid or minimize the discharge of pollutants and sediment to surface water.

Project Operation Effects on Surface Water Quality

Alternative A and Alternative B would result in similar site conditions, including the amount of impervious surfaces introduced to the project site, following construction. According to the preliminary drainage report prepared by Genesis Engineering (Appendix K), the overall amount of impervious land cover would increase up to approximately 75%. This increase in the overall area of impervious surface on the site would increase both the volume and rate of runoff from the site, as less water would infiltrate the soil. Human activities on site would also generate typical urban pollutants (automobile pollutants, chemicals from landscape and structural maintenance, soil erosion, and solid waste). These pollutants accumulate on impervious surfaces during dry weather and are then transported by surface flows into drainageways during storm events. Stormwater runoff from streets and driveways would be expected to contain oils, grease, sediment, and other urban debris and to have potential to result in degradation of surface water quality in area drainage ways.

Under either alternative, the project would include a combination of Low-Impact Development (LID) and BMPs to minimize pollutants entering the drainage system and being discharged from the site. This would be accomplished through a combination of "good housekeeping" practices and mechanical and biological treatment facilities. Both Alternative A and Alternative B incorporate grassy swales, detention basins, detached downspouts, and landscape strips all to promote infiltration of stormwater and to reduce the volume of runoff reaching the drainage system. Proper signage and inlet makings would also be incorporated to inform residents and visitors that all drains flow to the creeks and dumping, or disposal of waste in the drains is not allowed. In addition, treatment BMPs would be installed to ensure that all new impervious area would have some form of water quality treatment prior to discharge. These include bioretention basins, vegetative swales, flow-through planters, and hydrodynamic separators. The BMPs would be sized in accordance with the current local and state guidelines, including the California Stormwater Quality Association manual.

The BMP plan would be consistent with the NPDES requirements as discussed in Section 13.2, Regulatory Setting. To comply with the NPDES requirements, the project must implement a BMP plan that ensures the project would not cause or contribute to an exceedance of water quality standards contained in any Statewide Water Quality Control Plan, the California Toxics Rule, or the Water Quality Control Plan for the Sacramento River and the San Joaquin River Basins. With compliance with the NPDES requirements, under either Alternative A or Alternative B the project's impacts related to degradation of surface water quality would be **less than significant.**

Project Effects on Groundwater Quality

Construction of either Alternative A or Alternative B would proceed according to the Construction SWPPP required under the statewide construction general permit. The SWPPP would require construction to adhere to BMPs as listed previously that would minimize potential impacts to groundwater quality from construction. The greatest potential for impacts to groundwater quality to occur during project operation would be due to specific land uses that may store or transport hazardous materials. Project operation is not anticipated to result in the use or transport of substantial quantities of hazardous materials with the potential to result in groundwater contamination. Further discussion of potential impacts associated with use or transport of hazardous materials is provided in Chapter 15 of this EIR.

Under either alternative, the project would tie into the sewer system, and would therefore result in no impacts to groundwater as a result of septic tank failure or high groundwater septic system interaction.

The LID techniques and BMPs implemented under either alternative would ensure that surface water quality is maintained, and would reduce the potential for impacts to groundwater to occur as a result of pollutants delivered in stormwater runoff. Some groundwater recharge may occur when stormwater runoff is captured in the proposed detention basins. The project proposes to construct a stepped detention basin with 12 inches of crushed rock and 4-inch diameter perforated pipe to allow drawdown and standing water in the ponds to meet LID requirements and control drainage from the western portion of the project site. The eastern portion of the site would detain runoff with underground storage pipes and a shallow rock-lined pond with a separation system to meet LID requirements (Appendix K). With these features, the project would meet post-construction runoff and LID requirements so the water within the detention basin would not impair local groundwater quality. Thus, impacts to surface and groundwater quality would be **less than significant**.

Impact 13-2: Would the project cause a substantial increase in rate or volume of runoff leaving the site that would exceed the capacity of existing or planned stormwater drainage systems and result in flooding?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Development of roads, buildings, and other paved and impermeable surfaces would reduce the amount of stormwater that currently infiltrates into the ground and could increase the volume and rate of runoff leaving the project site, as discussed under Impact 3.13-1, if appropriate measures are not implemented to control peak flows. A significant impact would occur if post-development stormwater runoff rates are not reduced to levels below the pre-development runoff rates. However, the City requires that the project include a stormwater management plan that provides for sufficient onsite stormwater storage to ensure that runoff rates during the 2-year, 10-year, and 100-year storm do not increase compared to the existing condition.

The proposed stormwater management plan under either Alternative A or Alternative B includes three drainage management areas: the first is a 0.54 acre-feet storage basin in the west portion of the site; the second is a 1.49 acre-feet storage basin; the third is a 0.4 acre-feet storage basin. The first two would drain into extended detention basin while the last would drain into a CDS separation and underground water storage pipes.

Genesis Engineering used the SCS method to determine the increased runoff potential of the development. The SCS method is the Runoff Curve Method developed by the US Department of Agriculture Soil Conservation Service and estimates rainfall excess (runoff) from rainfall. Using the rain depth from the Rain Gage Station GRASS VALLEY 2 NNE (station number A60 3572 00), Genesis determined that the main CN value should be 0.95 with 75% impervious with a Type 1A SCS storm curve.

According to the preliminary Post Construction Design and LID requirement calculations (Appendix K), the first storage area will require 0.31 acre-feet of storage of the 0.54 allocated. The second will require 0.32 acre-feet of storage, far less than the allocated 1.49. Lastly, the third will fill 0.13 acre-feet of the 0.4 allocated. Because the storage areas provide more capacity than the minimum requirement, the proposed stormwater management measures would be sufficient to ensure that the project does not increase stormwater runoff rates from the project site. Therefore, under either alternative, the project's potential to cause a substantial increase in rate or volume of runoff leaving the site that would exceed the capacity of existing or planned stormwater drainage systems and result in flooding is **less than significant**.

Impact 13-3: Would the project expose people or structures to a significant hazard of flooding as a result of placing development within a 100-year flood hazard area?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Both Alternative A and Alternative B would develop the same project site and place structures in the same general locations throughout the site. The City of Grass Valley 2020 General Plan states that the City is relatively well drained and the only areas susceptible to flooding during the 100-year flood event are limited to areas along Wolf Creek and its tributaries. The project site is not within this narrow band. This is confirmed by the Federal Emergency Management Agency (FEMA) map 06057C0631E. Where storm drains and culverts are not maintained and kept clear, localized flooding may occur; this is preventable, temporary, and unlikely to be significant. Flooding risks associated with dam failure in this location are extremely low.

Per the City's General Plan, the only dam capable of inundating any portion of the Grass Valley Planning Area in event of failure is the Scotts Flat Lake Dam operated by NID. Inundation as a result of dam failure would most likely be caused by an earthquake. However, the area of Nevada County in which these dams exist is not located within an historical seismic zone, and is within the lowest earthquake intensity zone in California. Overall, both Alternatives will have a **less-than-significant** impact on the exposure of people or structures to a significant hazard of flooding as a result of placing development within a 100-year flood hazard area.

Impact 13-4: Would the project substantially decrease groundwater recharge, resulting in depressed groundwater levels in the local and/or regional area?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

Domestic water service to the project site and surrounding residential development is provided by the City of Grass Valley. The proposed project site includes no on-site groundwater extraction to supply water demands of the project. Provision of water supplies is evaluated in further detail in Chapter 14, Public Services and Utilities.

Both Alternative A and Alternative B would increase the amount of impervious surfaces by roughly the same amount by developing roads, driveways, buildings, and hardscape landscaping. This increase in the overall area of impervious surface on the site would reduce the amount of infiltration of surface water to the near surface soils. According to the California Department of Water Resources, the project site is located approximately 20 miles east of the North American subbasin of the Sacramento Valley Groundwater Basin, which covers 351,000 acres (548 square miles between the Bear River in the north, the Feather River in the west, and the Sacramento River in the south). Thus, no recharge of the groundwater basin occurs directly from the project site.

Both Alternative A and Alternative B would have no effect on infiltration patterns within the groundwater basin. As discussed in Impact 13-2, both Alternatives would implement BMPs and stormwater detention to ensure that post-development stormwater flows are reduced such that they do not exceed the pre-development flow rates; however, the total volume of stormwater discharge from the site would not be reduced. Therefore, Alternative A and Alternative B would have **no impact** to groundwater supply or recharge.

Impact 13-5: Would project construction and operation contribute to cumulative violations of water quality standards and/or waste discharge requirements?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None	None
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The geographic area for consideration of cumulative water quality impacts is the City of Grass Valley, and the cumulative development scenario includes buildout of the City of Grass Valley General Plan and the list of approved and proposed projects within the City, as summarized in Chapter 3, Land Use. Future development within the City could result in development of undeveloped land that could lead to potential increases in polluted runoff to local surface waters. However, all future development, similar to both Alternative A and Alternative B, would be subject to the NPDES MS4 permit and would be required to comply with BMPs in the City of Grass Valley Stormwater Management Plan; LID measures to reduce pollutants; the City's Grading Ordinance (Municipal Code, Chapter 12.04 12.06.120); General Plan policies related to hydrology and water quality; and the General Construction NPDES permit. New development and redevelopment projects would require implementation of plans that identify and implement a variety of BMPs to reduce the potential for erosion or sedimentation. Compliance with these regulations would ensure that each development in the cumulative scenario would not cause an increase in stormwater runoff rates or volumes and would not introduce new sources of surface water and groundwater pollution. Therefore, the cumulative impacts to water quality would be

less than significant, and there would be no significant cumulative impact to which either Alternative could contribute.

13.4 MITIGATION MEASURES

No mitigation measures are required.

13.5 REFERENCES CITED

California Department of Water Resources (DWR). 2011. "Hydrologic Regions and Overlay Areas of Interest Map." Prepared by Scott Hayes. January 4, 2011.

Central Valley Regional Water Quality Control Board (CVRWQCB). 2015. *Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board, Central Valley.* April 16, 2015.

City of Grass Valley. 1991. "City of Grass Valley Municipal Code Title 15 Buildings and Construction, Chapter 15.52 Flood Damage Prevention." 1991. Accessed June 7, 2016. Available at https://www2.municode.com/library/ca/grass_valley/codes/code_of_ordinances?nodeId=15036

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

City of Grass Valley. 1999b. *City of Grass Valley General Plan Update Environmental Impact Report*. Prepared for the City of Grass Valley by Quad Knopf. August 1999.

City of Grass Valley. 2003. *City of Grass Valley Stormwater Management Program Planning Document*. October 2003.

City of Grass Valley. 2007. "Development Code Title 17, Article 6, Chapter 17.60/17.62 Grading Ordinance." March 6, 2007. Accessed June 7, 2016. Available at http://www.cityofgrassvalley.com/document-central/development-code

Quad Knopf. 1998. *Grass Valley General Plan Background Report.* November 1998.

Sacramento River Watershed Program. 2016. "Bear River Watershed." Accessed June 7, 2016. Available at http://www.sacriver.org/aboutwatershed/roadmap/watersheds/american/bear-river-watershed

CHAPTER 14
PUBLIC SERVICES AND UTILITIES

This chapter addresses public services and utilities required to serve the proposed Dorsey Marketplace (proposed project). These services and utilities include water supply, treatment, and conveyance; wastewater treatment and conveyance; electricity, gas, and communication utilities; parks and recreational facilities; schools; fire protection; law enforcement; solid waste disposal and library services.

The Notice of Preparation and comments received in response to it are provided in Appendix A.

Information referenced to prepare this section includes:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- *Grass Valley General Plan Background Report* (Quad Knopf 1998)
- *Grass Valley Wastewater Master Plan (Stantec 2016)*
- *Sewer Capacity Analysis* (Appendix L)

14.1 ENVIRONMENTAL SETTING

Water Supply

The City of Grass Valley's water treatment system provides approximately 60% of the water provided to customers in the incorporated City, with 2,600 water connections. The Nevada Irrigation District (NID) provides the remaining 40% to outlying portions of the City between the City's water service area and the Planning Area boundary. NID serves agricultural, raw and treated water to more than 24,500 customers. (Nevada LAFCO 2015)

The proposed project site is located outside of the Grass Valley service area, and is within the NID service area. Existing NID pipelines surround the project site to the north, south, and east. They run along Dorsey Drive, Idaho Maryland Road, Spring Hill Drive, Golden Gate Terrace, and Sutton Way (Stantec 2016).

NID's service area encompasses 287,000 acres and covers portions of three counties: Nevada, Placer, and Yuba. All of NID's customers are metered and consist of single family and multi-family residential connections, and commercial, industrial, institutional, and landscape non-residential connections. NID sells raw and treated water to the Cities of Grass Valley and Nevada City, Bitney Springs LLC, Lake Vera Mutual, and Placer County Water Agency (PCWA). NID's

watershed is located on the upper reaches of the Yuba River, Bear River, and Deer Creek. Water management facilities include 10 storage reservoirs, 8 treatment plants, and 425 miles of pipeline, canals and other conveyance facilities. NID also owns and operates five hydroelectric power plants. Power from the plants is sold to Pacific Gas and Electric Company that supplies power to an estimated 85,000 residences (Brown and Caldwell 2016, Appendix K). NID supplies water to approximately 6,000 agricultural customers with an average total reported irrigated acreage of 25,860 acres (Brown and Caldwell 2016).

NID water is provided by four sources: water from the watershed, carry-over storage, contract purchases, and recycled water (Kleinschmidt 2011). However, NID's primary source of water is local surface water obtained from the Yuba River, Bear River, and Deer Creek watersheds that is diverted and stored under NID's appropriative water rights. NID does not use groundwater as an existing or planned source of water supply due to limited groundwater availability. NID's water rights allow for a diversion of 450,000 acre-feet. The District has an extensive system of storage reservoirs that provides surface water supply to the District's seven water treatment plants as well as to the raw water customers.

NID's water supply is dependent on snowmelt and rain to fill storage reservoirs. While there may be limited natural runoff during normal summer months, the irrigation season (April 15–October 14) demand is met primarily with withdrawals from storage reservoirs.

In 2015 NID supplied 126,653 acre/feet/year (AFY) of water to its customers (Brown and Caldwell 2016, p. 3-2). Water use in the Nevada Irrigation District declined more than 20% between 2013 and 2017 (Southern California Public Radio 2017). NID projects the minimum water supply available for 2016, 2017, and 2018 estimated based on combined availability of all water sources to be 233,225 AFY (2016), 253,185 AFY (2017), and 202,611 AFY (2018) (Brown and Caldwell 2016, p.7-6). Beyond that, NID projects a reasonably available volume of 360,800 AF/year from 2020 to 2040, with excess water after projected demands, as shown in the table below.

Table 14-1
Projected Water Supply Sources 2020-2040
(Acre Feet per Water Year)

Source	Projected Water Supplies							
	2020		*2025*		*2030*		*2040*	
	Reasonably available volume	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*
Watershed Runoff	221,500	221,500	221,500	221,500	221,500	221,500	221,500	221,500
Carryover Storage	129,400	201,985	129,400	201,985	129,400	201,985	129,400	201,985

Table 14-1
Projected Water Supply Sources 2020-2040
(Acre Feet per Water Year)

Source	Projected Water Supplies							
	2020		*2025*		*2030*		*2040*	
	Reasonably available volume	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*	*Reasonably available volume*	*Total right or safe yield*
Contract Purchase (PG&E)	8,000	54,361	8,000	54,361	8,000	54,361	8,000	54,361
Recycled water	1,900	1,900	1,900	1,900	1,900	1,900	1,900	1,900
Supply Total	360,800	479,746	360,800	479,746	360,800	479,746	360,800	479,746
Demand Total	178,919		187,960		196,076		209,521	
Difference (supply minus demand)	181,881		172,840		164,724		151,279	

Source: Brown and Caldwell 2016

NID also currently receives recycled water from the City's wastewater treatment plant. The City's discharges tertiary treated wastewater into Wolf Creek and in 2015 discharged 2,230 acre-feet of water. All wastewater treated within the NID service area is discharged to local natural watercourses. Recycled water mixes with NID water being transported in those watercourses. This supply of water augments NID's overall water supply. However, NID uses recycled water exclusively for agricultural uses.

According to NID's 2015 Urban Water Management Plan, in 2015 they provided 24 AFY of treated water and 917 AFY of raw water to the City (Brown and Caldwell 2016). Table 14-1 provides NID's estimated projected increase in water demand in five-year increments through 2040.

Table 14-2
NID Projected Increase in Water Demand

	2020	2025	2030	2035	2040
Treated Water	50	50	50	50	50
Raw Water	1,300	1,300	1,350	1,350	1,350

Note: All amounts are in acre/feet/year.
Source: Brown and Caldwell 2016

NID also has a Drought Contingency that provides guidance to staff and customers to help minimize drought or water supply shortage impacts. The plan identifies drought action levels, appropriate agency responses, water demand reduction goals, and provides recommended demand management measures to assist customers in water conservation.

Surface Water

The City of Grass Valley lies within two drainage basins. The southern majority of the City lies within the Wolf Creek drainage basin. The northern portion of the City, including lands within the Planning Area, lies within the Deer Creek basin. Northwestern and western areas are within the upper reaches of the Deer Creek drainage basin, but do not include Deer Creek or substantial tributaries. The South Fork of Wolf Creek and Little Wolf Creek drain the eastern and southeastern portion of the Planning Area and discharge into Wolf Creek in the central Grass Valley area. The Wolf Creek basin is approximately 20 square miles and intersects Grass Valley from the northeast to southwest and is a tributary of both the Bear and Sacramento Rivers.

Groundwater

The City and NID do not rely on groundwater due to its limited availability.

Wastewater Conveyance and Treatment

The Grass Valley Wastewater Treatment plant (WWTP) is located at 556 Freeman Lane. The plant encompasses 29 acres and was built in 1950 and expanded in 2000. The City currently collects and treats wastewater from an area of approximately 2,430 acres (equating to a service area of approximately 4.1 square miles), serving a population of approximately 12,668 people, as well as a number of industrial and commercial users (Stantec 2016). The WWTP is a nitrification/denitrification activated sludge treatment system with advanced tertiary treatment facilities. The plant is comprised of a headworks (screening and grit removal) with odor control, primary treatment (primary clarifiers), and secondary treatment (aeration basin and secondary clarifier). Secondary effluent is filtered and then disinfected using ultraviolet (UV) light before it is discharged to Wolf Creek (Stantec 2016). The design capacity of the WWTP is 2.78 mgd with a peak flow capacity of up to 7.0 mgd (Stantec 2016). The collection system conveys an average annual flow of approximately 2.2 mgd of raw wastewater to the WWTP. The City also maintains 61.5 miles of pipeline within the collection system and seven wastewater lift stations (Stantec 2016).

The current average daily flow of 1.3 mgd is less than 50% of the current 2.8 mgd design capacity. However, the peak flows that the plant currently receives exceed the peak flow design capacity. Currently, the plant's design peak hour flow is around 16 mgd and the measured peak hour flows at the plant are 18.9 mgd (Stantec 2016). The City is currently evaluating upgrading the collection

system to address conveyance capacity constraints, upgrading lift stations and upgrades to the plant to expand treatment capacity (Stantec 2016).

The proposed project would route wastewater by gravity through an 8-inch sewer collector in Springhill Drive which connects to an 18-inch trunk sewer line in Idaho Maryland Road. The Idaho Maryland Trunk sewer line connects to the city's Main Trunk sewer where Idaho Maryland Road intersects East Main Street. The Main Trunk is aligned roughly parallel to Highway 49 and ultimately conveys flows to the City's WWTP (Appendix L). The service area that discharges into the Idaho Maryland trunk sewer line covers an area of approximately 700 acres.

Electricity and Natural Gas

Electric service in this portion of the City is provided by PG&E. PG&E's power is generated in fossil-fueled plants, hydroelectric powerhouses, geothermal generators, a nuclear power plant, and ten combustion turbines. PG&E also buys power from independent power producers and other utilities. According to their website, PG&E provides service to approximately 5.1 million customers in Northern and Central California and has approximately 18,616 miles of interconnected transmission lines and 141,215 miles of distribution lines (PG&E 2015).

PG&E's services are provided in accordance with California Public Utilities Commission rules and regulations. Electric connections would be provided to the project site from the existing transmission network in the project vicinity. The project applicant would be responsible for the costs associated with extension of electrical service infrastructure to the project site.

PG&E also supplies natural gas to homes and businesses in the project area. PG&E has 42,141 miles of distribution pipelines supplying 4.3 million residential gas customers (PG&E 2015). Extension of the natural gas infrastructure by PG&E is financed through the collection of developer fees and through consumer payment for service.

Schools

Three school districts comprise the public education system in the City of Grass Valley: Grass Valley Elementary School District, Nevada Joint Union High School District, and Sierra Community College District.

The Grass Valley Elementary School District manages four schools: Bell Hill Elementary (342 South School Street), Lyman Gilmore Middle (10837 Rough and Ready Highway), Grass Valley Charter (225 South Auburn Street), and Margaret G. Scotten Elementary (10821 Squirrel Creek Road). The closest elementary schools to the project site are Bell Hill Elementary, about 1.5 miles southwest of the project site; Lyman Gilmore School, 1.6 miles west of the site; and Margaret G. Scotten, 1.8 miles west of the project site. Grass Valley Charter School, a Pre-K through 8th grade

school, is about 1.18 miles southwest of the project site. Since 2005, district enrollment has remained between 1,653 students and 1,745 students (California Department of Education 2017a). The district has a capacity of 2,189 students (Hardy 2017). Enrollment has increased slightly from 1,663 students in the 2010-2011 school year to 1,745 students for the 2015–2016 school year (California Department of Education 2017a). For the 2015–2016 school year, enrollment reached 210 students for Bell Hill Elementary, 527 students for Lyman Gilmore Middle, 487 students for Margaret G. Scotten Elementary, and 521 students for Grass Valley Charter (California Department of Education 2017b).

The Nevada Joint Union High School District operates Bear River High School (11130 Magnolia Rd.), Ghidotti Early College High School (250 Sierra College Drive), Nevada Union High School (11761 Ridge Road), Silver Springs High School (140 Park Avenue), and North Point Academy (11761 Ridge Road). The district has seen steadily declining enrollment since 1998, with 2,947 students enrolled in the 2015–2016 school year (California Department of Education 2017c). The district has a total capacity of 4,915 students (Nevada Joint Union High School District 2017). Nevada Union High School is about 1.1 miles northwest of the project site with a total enrollment of 1,653 for the 2015–2016 school year (California Department of Education 2017d) and a capacity of 2,814 (Nevada Joint Union High School District 2017). Bear River High School is approximately 12 miles south of the project site. Three other high schools are located near the project site but because they are more specialized, it is likely that most students would attend Nevada Union High. Silver Springs High, a continuing education high school, is about 1.5 miles southwest of the project site. Bitney College Prep High School, a public charter school authorized by the Nevada County Superintendent of Schools, is also about 0.3 miles north of the project site. Ghidotti High School is located about half a mile northwest of the project site, and has partnered with Sierra College to allow high school students to attend Sierra College courses tuition free. Attendance for this school is capped at 160 students (Ghidotti 2017).

Under authority of Education Code Section 17620 et seq., the governing board of a school district is authorized to levy a fee for the purpose of funding the construction or reconstruction of school facilities and may be used by the district to pay bonds, notes, loans, leases or other installment agreements for temporary as well as permanent facilities. The Nevada Joint Union High School District and Grass Valley Elementary School District collect combined fees established by the State for enclosed residential, commercial, and industrial construction. The districts charge $3.48 per square foot for residential development and $0.56 per square foot for commercial and industrial development (Hardy 2017).

Sierra College operates a northern campus in the City at 250 Sierra College Drive; the main campus is located in Rocklin, approximately 37 miles south. The Grass Valley location is adjacent to Nevada Union High School.

Fire Protection and Emergency Medical Services

Fire Protection within the City is provided by the City of Grass Valley Fire Department (GVFD). The GVFD employs 14 firefighters/EMTs and maintains two fire stations and an administrative office within City Hall: Station No. 1 (472 Brighton Street) and Station No. 2 (213 Sierra College Drive), and the Grass Valley Fire Administrative Offices (125 East Main Street). GVFP maintains two frontline and one reserve engine, one aerial ladder truck, and miscellaneous staff and support vehicles. The fire apparatus is staffed with a minimum of three Grass Valley and one Nevada County Consolidated firefighters each day. Additionally, the career firefighters assigned to the fire engines are supplemented with an intern firefighter assigned to each engine every day. An Interim Fire Chief, Battalion Chief, Deputy Fire Marshal and a part-time administrative assistant provide for the management and fire prevention services of the fire department. (City of Grass Valley 2017)

For areas outside the City, the Nevada County Consolidated Fire District serves the area north, west and south of the City and Ophir Hill Fire District serves the area east of the City. The Grass Valley Fire Department partners with the Nevada County Consolidated Fire Department and the Nevada City Fire Department under a Joint Operating Agreement wherein the departments respond as if they were one agency and in which the key feature is the response of the closest engine to an incident regardless of jurisdiction (City of Grass Valley 2017). In 1998, these agencies entered into an Automatic Aid agreement, which provides for a response by a minimum of two pieces of equipment anywhere in the City within four minutes, 24 hours/day (Quad Knopf 1999). In addition, mutual aid from agencies state-wide is provided pursuant to the California Fire Service and Rescue Emergency Mutual Aid System via its Mutual Aid Plan (Quad Knopf 1999). Finally, the California Department of Forestry and Fire Protection (CALFIRE) provide protection for wildland areas; they are responsible for wildfires during the fire season and thus structures in wildlands do not have year-round protection.

Law Enforcement

The City maintains its own police force, the Grass Valley Police Department (GVPD). The GVPD provides both police and animal control services within the incorporated areas of the city. Police headquarters are located at 129 South Auburn Street whereas the animal control facility is located on Freeman Lane. The GVPD sustains a 24-hour force consisting of 26 officers and 5 professional support staff, along with eight reserve officers and 12 volunteers. The current police station was constructed in 1996 to accommodate a larger police force. This was in regards to the projected population growth within the City's sphere of influence. (City of Grass Valley 2017c)

Library Services

The Nevada County Library System maintains one library with Grass Valley boundaries, at 207 Mill Street, and five other libraries throughout the county. The Grass Valley Library - Royce

Branch, it is a Carnegie library and is registered in the National Register of Historic Places (Nevada County 2017). It provides various services including children's educational opportunities, computer and internet access, and book and video rentals. The library serves the City's approximate population of 12,860 people (U.S. Census Bureau 2010).

Solid Waste

Waste Management, Inc. provides waste management services for the City. Solid waste collected within the City is taken to the McCourtney Road Transfer Station and Recycling Center located at 14741 Wolf Mountain Road before it is hauled outside the County boundaries to landfills with contracts with Nevada County (Quad Knopf 1999). The McCourtney Road Transfer Station (Permit 29-AA-0010) is permitted to process 350 tons per day with a total number of 1,090 vehicles per day (CalRecycle 2017). On average, in 2015 the facility received 291 tons of waste per day and 698 vehicle trips per day, with a peak of 960 vehicle trips per day (Simpson 2017). However, the current trips per day are now closer to the 2015 peak number because the local recycle buyback centers closed in 2016, resulting in more trips to the transfer station (Simpson 2017).

Waste Management has an agreement with Lockwood Regional Landfill, located in Sparks, Nevada, which serves as the primary landfill disposal site (RBF Consulting 2013). The Lockwood Landfill, located in Sparks, Nevada, is a Class I Municipal Solid Waste Site that accepts municipal solid waste. Currently, the landfill receives approximately 5,000 tons of waste per day, based on a five day work week, and has a capacity of 302.5 million cubic yards. Based on an aerial survey conducted in April 2010, the landfill contained a waste volume of approximately 32.8 million cubic yards. (Nevada Division of Environmental Protection 2015)

When inclement weather makes it infeasible to travel to the Lockwood Regional Landfill, solid waste is transported to the Anderson Landfill in Anderson, California (RBF Consulting 2013). The Anderson Landfill has a closure date of 2055 and a capacity of approximately 16.4 million cubic yards (Shasta County 2013), with 11.5 million cubic yards of capacity remaining (RBF Consulting 2013).

Within Nevada County, about 31% of solid waste is disposed, 23% is recyclable, 30% is compostable, and 16% is recoverable inert waste such as asphalt or concrete (Nevada County 2015a).

Parks and Recreation Facilities

The City owns and maintains approximately 108 acres of park land consisting of 7 developed park sites and one undeveloped park site (City of Grass Valley 2017). City parks include: Memorial Park (7.6 acres), Condon Park (80 acres), Mautino Park (12 acres), Pelton Wheel Museum/Glen Jones Park (2.0 acres), Minnie Park (2.0 acres), Dow Alexander Park (0.25 acre), and Elizabeth Daniels Park, (0.16 acre) (City of Grass Valley 2001). Memorial Park, Condon Park, and Mautino

Park are community parks while the other four are neighborhood parks and developed to serve the surrounding residential areas. Memorial Park is fully developed and includes a Video History museum whereas Condon Park is only partially developed and includes the LOVE community center, two lighted baseball fields, a disc golf course, and a skate park. Additionally, Sierra College maintains its own recreational area as does Nevada County Country Club. With a population estimate of 12,944 in 2015 (US Census 2017), the City exceeds its park standards of 5-8 acres per 1,000 population for community parks (City of Grass Valley 2001). With 4.41 acres of neighborhood parks, the city does not meet its standard of 1-2 acres per 1,000 population for neighborhood parks (City of Grass Valley 2001). The City plans to develop one additional park - Morgan Ranch Park, which would be a neighborhood park located on land that has been dedicated to the City and is currently open space.

14.2 REGULATORY FRAMEWORK

This section includes applicable federal, state, and local laws, regulatory guidance, and general plan goals and policies that govern public services and utilities in the City. Where services are provided by external agencies, such as Nevada County, goals and policies of the applicable jurisdiction providing the service are also discussed.

Water Supply

Federal Regulations

The Safe Drinking Water Act (SDWA) is the main federal law that regulates the quality of potable water for the public. The SDWA authorizes the U.S. Environmental Protection Agency (EPA) to establish national health-based standards for drinking water quality. These standards may apply to both naturally occurring and man-made constituents in drinking water. The national standards are established using scientific methods to evaluate health risks and consider available technology and costs to achieve the standards. The National Primary Drinking Water Regulations establish maximum contaminant levels or mandated methods for water treatment to remove contaminants, as well as requirements for regular water quality testing to make sure standards are achieved. In addition to setting these standards, the EPA provides guidance, assistance, and public information about drinking water, collects drinking water data, and oversees state drinking water programs. States can apply to the EPA for authority to implement SDWA within their jurisdictions by showing that they will adopt standards at least as stringent as the national standards and adequately enforce these standards. California has been granted this authority, and the California Department of Public Health establishes and enforces statewide drinking water standards.

The SDWA was passed by Congress in 1974 and amended in 1986 and 1996. The original focus of the law was on treatment of water supplies as a means of providing safe drinking water. However, the 1996 amendments expanded the focus to recognize protection of water quality at the

source. Under this expanded focus, SDWA requires many actions to protect rivers, lakes, reservoirs, springs, and ground water wells that provide sources of drinking water supplies. The 1996 amendments also recognized operator training, funding for water system improvements, and public information as important components of safe drinking water.

State Regulations

California Safe Drinking Water Act

The California Department of Public Health administers the state's SDWA through the Drinking Water Program. This program implements the regulatory authority of the Department of Public Health over public water systems in the state. Public water system operators are required to regularly monitor their drinking water sources and supplies for microbiological, chemical, and radiological contaminants to demonstrate that the water meets the regulatory requirements regarding primary maximum contaminant levels (MCLs) listed in Title 22 of the California Code of Regulations.

Urban Water Management Planning Act

California Water Code Section 10610 et seq. requires that all public water systems that provide water to more than 3,000 customers or supply more than 3,000 AFY must prepare an Urban Water Management Plan. The California Department of Water Resources provides guidance to urban water suppliers in the preparation and implementation of Urban Water Management Plans. These plans must be updated at least every 5 years.

Local Regulations

The Grass Valley General Plan 2020, adopted in 1999, includes the following policies pertinent to the City's water supply.

Conservation and Open Space Element

15-COSO: Protection of ground- and surface water quality.

16-COSO: Inclusion of air and water quality considerations in land use decisions rendered by the Planning Commission and City Council.

21-COSP: Continue to implement water quality improvement plans, including storm water separation and sewage treatment plant expansion.

23-COSP: Respond appropriately to state and federal air and water quality policies and policy changes, understanding the implications of regulations and standards, and maintaining a continuing public education program.

Safety Element

11-SP: Maintain appropriate standards for water supply, pressure and distribution for fire suppression purposes.

Wastewater Conveyance and Treatment

Federal Regulations

National Pollutant Discharge Elimination System Permits (Federal and State)

The federal Clean Water Act regulates the discharge of treated effluent from wastewater treatment plants. This authority is administered through the Central Valley Regional Water Quality Control Board (CVRWQCB).

The National Pollutant Discharge Elimination System (NPDES) permit system was established in the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. The discharge of wastewater to surface waters is prohibited unless an NPDES permit has been issued to allow that discharge. Each NPDES permit includes the following provisions: effluent and receiving water limits of allowable concentrations and/or mass of pollutants contained in the discharge; prohibitions on discharges not specifically allowed under the permit; provisions that describe required actions by the discharger, including industrial pretreatment, pollution prevention, and self-monitoring activities; and other regulatory requirements. The City's WWTP operates under NPDES permit No. CA 0079898.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act) is California's statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality plans, policies, and objectives that will provide protection to the state's waters for the use and enjoyment of the people of California. In California, the State Water Resources Control Board (SWRCB) has authority and responsibility for establishing policy for water quality control issues for the state. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The Porter-Cologne Act authorizes the SWRCB and RWQCBs to issue NPDES permits containing waste discharge requirements (WDRs), and to enforce these permits. SWRCB and RWQCB regulations implementing the Porter-Cologne Act are included in Title 27 of the California Code of Regulations.

General Waste Discharge Requirements for Sanitary Sewer Systems

The General WDRs for Sanitary Sewer Systems were adopted by the SWRCB in May 2006. These WDRs require local jurisdictions to develop a sewer system management plan (SSMP) that addresses the necessary operation and emergency response plans to reduce sanitary sewer overflows (SWRCB 2006). The WDRs require that the local jurisdiction approve the SSMP and the Grass Valley City Council approved an update to the City's SSMP in September 2012.

Local Regulations

City of Grass Valley 2020 General Plan

The Grass Valley 2020 General Plan Conservation and Open Space Element includes the following policy pertinent to the City's wastewater system.

> **21-COSP:** Continue to implement water quality improvement plans, including storm water separation and sewage treatment plant expansion.

City of Grass Valley Wastewater Systems Master Plan

The City adopted its Wastewater Systems Master Plan (Master Plan) in 2012 and recently completed an update in August 2016. The Master Plan provides guidance on how the City can efficiently and effectively manage, operate, and maintain all parts of the City's Sewer Collection System, including the WWTP, collection system, and associated facilities; ensure adequate capacity is available to convey peak wastewater flows; and reduce the frequency of sanitary sewer overflows wherever possible. The Master Plan provides assessments of the existing collection system and WWTP condition and capacity, as well as options for providing additional capacity for planned future development.

City of Grass Valley Sewer System Management Plan

In accordance with the requirements of the General WDRs for Sanitary Sewer Systems, the City of Grass Valley has prepared and adopted an SSMP that describes the operations and maintenance program, establishes design and construction standards, defines an overflow emergency response plan and the fats, oils and grease program, describes methods and standards of the system evaluation and capacity assurance plan, and outlines a communication program.

Electric/Natural Gas

Federal Regulations

There are no federal regulations applicable to the potential environmental effects associated with the provision of energy utilities to the project. Federal regulations associated with energy consumption and conservation are described in Chapter 16, CEQA-Mandated Sections.

State Regulations

Title 24 of the California Code of Regulations requires the use of energy-efficient appliances in all new residential, commercial, and educational facilities. No special permits for electrical hook-up, gas hook-up, or other energy sources are required; however, building permits and compliance with adopted building codes would be required for these services. PG&E electric and gas services are provided in accordance with the California Public Utilities Commission rules and regulations.

Local Regulations

There are no local regulations related to the potential environmental effects associated with provision of energy utilities to the project.

Schools

Federal Regulations

There are no federal regulations applicable to the potential environmental effects associated with provision of public education services to the project.

State Regulations

California State Assembly Bill 2926 – School Facilities Act of 1986

In 1986, Assembly Bill (AB) 2926 was enacted by the State of California authorizing entities to levy statutory fees on new residential and commercial/industrial development in order to pay for school facilities. AB 2926, entitled the School Facilities Act of 1986, was expanded and revised in 1987 through the passage of AB 1600, which added Section 66000 et seq. of the California Government Code.

Proposition 1A/Senate Bill 50

Proposition 1A/Senate Bill 50 (SB 50), (Chapter 407, Statutes of 1998) created the School Facility Program where eligible school districts may obtain state bond funds. State funding requires matching local funds that generally come from developer fees. The passage of SB 50 eliminated

the ability of cities and counties to require full mitigation of school impacts and replaced it with the ability for school districts to assess fees directly to offset the costs associated with increasing school capacity as a result of new development. The old "Stirling" fees were incorporated into SB 50 and are referred to as Level 1 fees. These fees, as of February 2016 are currently capped at $3.48 per square foot for new residential development and $0.56 per square foot for commercial and industrial (nonresidential) development and age-restricted senior housing. Districts meeting certain criteria may collect Level 2 fees as an alternative to Level 1 fees. Level 2 fees are calculated under a formula in SB 50. Level 3 fees are approximately double Level 2 fees and are implemented only when the State Allocation Board is not apportioning state bond funds. The passage of Proposition 1D on November 7, 2006, precludes the implementation of Level 3 fees for the foreseeable future. Although SB 50 states that payment of developer fees are "deemed to be complete and full mitigation" of the impacts of new development, fees and state funding do not necessarily fully fund new school facilities.

California Education Code – Sections 35500 and 35700

School district reorganizations are governed by Sections 35500 and 35700 of the California Education Code. District boundary reorganization may be initiated by "petition" by a developer or group of citizens, as well as by the majority of a school district governing body. A developer may initiate proceedings for a reorganization of a school district boundary for an uninhabited area. The more common form of school district boundary reorganization is through a petition of a majority vote of the governing body of one or more school districts that have jurisdiction in the area proposed to be reorganized.

Local Regulations

There are no local regulations applicable to the potential environmental effects associated with provision of public education services to the project.

Fire Protection and Emergency Medical Services

Federal Regulations

There are no federal regulations applicable to the potential environmental effects associated with provision of fire protection services to the project.

State Regulations

California Government Code

Effective January 1, 2005, California Government Code Section 51182 and Public Resources Code Section 4291 were modified with respect to fire risk reduction measures required to be enforced by local agencies and CAL FIRE for occupied dwellings or structures. These measures require:

- Maintaining a fire break made by removing and clearing away, for a distance of not less than 100 feet on each side of a dwelling or structure, or to the property line whichever is nearer, all flammable vegetation or other combustible growth. This does not apply to single specimen trees, ornamental shrubbery, or similar plants that are used as ground cover, if they do not form a means of rapidly transmitting fire from the native growth to any dwelling or structure.
- Maintaining additional fire protection or firebreaks made by removing all brush, flammable vegetation, or combustible growth that is located within 100 feet from an occupied dwelling or occupied structure or to the property line, or at a greater distance if required by State law, or local ordinance, rule, or regulation. Grass and other vegetation located more than 100 feet from a dwelling or structure and less than 18 inches in height above the ground may be maintained where necessary to stabilize the soil and prevent erosion.
- Removal of that portion of any tree that extends within 10 feet of the outlet of any chimney or stovepipe.
- Maintaining any tree adjacent to or overhanging any building free of dead or dying wood.
- Maintaining the roof of any structure free of leaves, needles, or other dead vegetative material.
- Providing and maintaining at all times a screen over the outlet of every chimney or stovepipe that is attached to any fireplace, stove, or other device that burns any solid or liquid fuel. The screen shall be constructed and installed in accordance with the California Building Standards Code.
- Prior to constructing a new dwelling or structure that will be occupied or rebuilding an occupied dwelling or occupied structure damaged by a fire, the construction or rebuilding of which requires a building permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable State and local building standards.

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction, maintenance, and use of buildings. Topics addressed in the code include fire department access, fire hydrants, automatic storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The code contains specialized technical regulations related to fire and life safety.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, include regulations for building standards (as also set forth in the California Building Code), and fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

California Occupational Safety and Health Administration

In accordance with California Code of Regulations, Title 8, Sections 1270, Fire Prevention, and 6773, Fire Protection and Fire Equipment, the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hosing sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance, and use of all firefighting and emergency medical equipment.

Local Regulations

City of Grass Valley 2020 General Plan

City of Grass Valley 2020 General Plan includes the following policies applicable to fire protection and suppression.

24-CP: Coordinate circulation and development plans with public safety agencies, fire departments/districts and emergency service providers.

6-SP: Incorporate fire hazard reduction considerations into land use plans/patterns, both public and private.

7-SP: Identify, maintain, and mark evacuation routes for use in case of disasters or emergencies.

8-SP: Assure public awareness of fire-safety measures, including those addressing property maintenance and evacuation

9-SP: Develop and implement fire-safe community design and landscaping standards, construction codes, and property maintenance regulations.

10-SP: Adopt and implement appropriate standards for access roads, on-site driveway standards, fuel reduction and emergency water supply.

11-SP: Maintain appropriate standards for water supply, pressure and distribution for fire suppression.

12-SP: Maintain a high level of inter-jurisdictional cooperation and coordination, including appropriate automatic aid agreements with fire protection/ suppression agencies automatic aid agreements with fire protection/suppression agencies in western Nevada County

Law Enforcement

There are no federal, state, or local regulations applicable to the potential environmental effects associated with provision of law enforcement services to the project.

Library Services

Federal Regulations

There are no federal regulations applicable to the potential environmental effects associated with provision of library services to the project.

State Regulations

There are no state regulations applicable to the potential environmental effects associated with provision of library services to the project.

Local Regulations

City of Grass Valley 2020 General Plan

The City of Grass Valley General Plan includes the following policies relevant to libraries.

10-RP: Expand the existing library as a cultural venue.

19-CDP: Retain existing public offices and facilities Downtown, including the Library, Post Office, Veterans Hall and City Hall.

Solid Waste

Federal Regulations

Resource Conservation and Recovery Act

Title 40 of the Code of Federal Regulations (CFR), Part 258, Resource Conservation and Recovery Act (RCRA), Subtitle D, contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State Regulations

California Integrated Solid Waste Management Act – Assembly Bill 939 (AB 939)

AB 939, passed in 1989, mandated a focus on the conservation of natural resources. Cities and counties were required to create comprehensive source reduction, recycling, and composting programs. The goal of these programs is to reduce the amount of waste sent to landfills by 50%. AB 939 requires cities and counties to prepare solid waste management plans and adopt source reduction and recycling elements (SRREs) to implement AB 939's goals. These goals include diverting approximately 50% of solid waste from landfills and identifying programs to stimulate local recycling in manufacturing and the purchase of recycled products.

The focus of this bill was a major change, shifting the emphasis from landfill disposal toward waste reduction, recycling and composting whenever possible. This approach conserves natural resources and saves energy, decreases pollution, and provides new jobs in the waste industry.

AB 939 established the following priorities for waste management:

- Waste reduction
- Recycling and composting
- Controlled combustion of waste to generate electricity
- Landfilling

In conjunction with Nevada County, the City of Grass Valley has adopted the countywide Source Reduction and Recycling Element that establishes goals and methodologies for compliance with AB 939. Additionally, on April 23, 2002, the County adopted the "Green Procurement and Sustainable Practices Policy" to encourage the reduction of solid waste entering landfill sites (RBF Consulting 2013). This policy requires waste prevention, recycling, market development, and use of recycled/recyclable materials through lease agreements, contractual relationships and purchasing practices with vendors, contractors, businesses, and other public and governmental

agencies. In addition, Nevada County Department of Sanitation (formerly the Department of Transportation and Sanitation) recently received a $100,000 grant from the California Integrated Waste Management Board to fund the program Nevada County Recycles, which is dedicated to educating schools, businesses, and individuals about recycling (RBF Consulting 2013).

Senate Bill 1016

SB 1016 enacted in 2007 changes the process for bi-annual review of a jurisdiction's source reduction and recycling element and allows the California Integrated Waste Management Board to make a finding whether each jurisdiction is in compliance with the requirements based on the jurisdiction's change in its per capita disposal rate. No longer is a diversion rate used to calculate compliance with AB 939, but a per capita disposal rate is used that calculates the number of pounds of solid waste diverted, divided by the total population, divided by 365 days

Solid Waste Reuse and Recycling Access Act of 1991

AB 1327 (Solid Waste Reuse and Recycling Access Act), enacted in 1991, requires jurisdictions to adopt ordinances that require development projects to provide adequate storage areas for collection and removal of recyclable materials.

Assembly Bill 341

AB 341, which was enacted in 2011, states that it is the policy goal of the state that not less than 75% of solid waste generated be reduced, recycled, or composted by the year 2020. The bill also requires that a business, defined to include a commercial or public entity that generates more than 4 cubic yards of commercial solid waste per week or is a multifamily residential dwelling of five units or more arrange for recycling services, on and after July 1, 2012. Jurisdictions, on and after July 1, 2012, are required to implement a commercial solid waste recycling program or revise their SRRE to meet this requirement.

California Department of Resources Recycling and Recovery

CalRecycle is the new home of California's recycling and waste reduction efforts. Officially known as the Department of Resources Recycling and Recovery, CalRecycle is a new department within the California Natural Resources Agency and administers programs formerly managed by the California Integrated Waste Management Board and Division of Recycling. CalRecycle is the State agency charged with the primary responsibility for permitting of solid waste facilities. CalRecycle operates through its designated Local Enforcement Agencies (LEAs), which typically are county health departments. Air pollution from solid waste facilities is regulated by local air pollution control districts or air quality management districts, while water pollution is regulated by RWQCBs.

Universal Waste Regulations

Universal wastes are hazardous wastes that are widely produced by households and many different types of businesses such as medical offices. Universal wastes include televisions, computers, and other electronic devices as well as batteries, fluorescent lamps, and mercury thermostats and other mercury-containing equipment, among others. The hazardous waste regulations identify seven categories of hazardous wastes that can be managed as universal wastes. Any unwanted item that falls within one of these waste streams can be handled, transported, and recycled following the simple requirements set forth in the universal waste regulations (22 CCR Division 4.5, Chapter 23).

SB 1016 repeals this review schedule on January 1, 2018, and, after that date, requires CalRecycle to review each jurisdiction's SRRE and household hazardous waste element at least once every 2 years.

Local Regulations

City of Grass Valley Solid Waste/Recyclable Materials Storage Ordinance

The City of Grass Valley Solid Waste/Recyclable Materials Storage Ordinance, adopted on April 10, 2007, requires developers for certain projects, such as new construction of multifamily and nonresidential developments, to provide solid waste and recyclables storage areas in the number, dimensions and types required by the department or review authority. Additional storage areas may be required, as deemed necessary (RBF Consulting 2013).

Parks and Recreation Facilities

State Regulations

Quimby Act

In 1975, the Quimby Act (California Government Code Section 66477, as amended in 1982) granted Cities and Counties authority to pass ordinances requiring developers to set aside land, donate conservation easements, or pay fees for park improvements. The City of Grass Valley has adopted such an ordinance as discussed in the following Local Regulations section. The goal of the Quimby Act was to require developers to help mitigate the impacts of their developments. Special districts must work with Cities, and/or Counties to receive parkland dedication and/or in-lieu fees. The fees must be paid and land conveyed directly to the local public agencies that provide park and recreation services to the affected community. Revenues generated through the Quimby Act cannot be used for the operation and maintenance of park facilities.

Local Regulations

City of Grass Valley 2020 General Plan

The City of Grass Valley General Plan includes the following policies relevant to parks and recreation.

Recreation Element

1-RP: Provide parks and open spaces of different sizes and types to respond to the needs of a diverse population, including trails for pedestrian and equestrian use, bicycle pathways, linear parkways and park-like natural areas.

2-RP: Increase the standard of park acreage to population.

3-RP: Distinguish neighborhood park needs from community and regional park needs.

6-RP: Provide non-motorized linkages between parks and open spaces.

City of Grass Valley Parks and Recreation Master Plan

The City's Parks and Recreation Master Plan includes park standards per 1,000 residents. The parks standards are provided below in Table 14-3.

Table 14-3
City of Grass Valley Park and Recreation Standards

Park Type	Standard (acres/1,000)	Recreation Facility	Standard (per population)
Urban Plaza	None	Baseball/Softball Fields	1 per 4,800
Pocket Parks	0.25–0.5	Soccer Field	1 per 4,100
Neighborhood Park	1–2	Football Field	1 per 15,000
Community Park	5–8	Outdoor Basketball	1 per 5,600
		Tennis Courts	1 per 2,400
		Volleyball	1 per 7,900
		Swimming Pools	21,100

Source: City of Grass Valley 2001

City of Grass Valley Parkland Dedication

Grass Valley Municipal Code section 17.86.030 establishes the City's requirements for dedication of land and/or the payment of fees to the City for park and recreational purposes as a condition of the approval of a Tentative Map, consistent with the Quimby Act. The determination of whether a subdivider shall dedicate land and/or pay a fee may be made the City Council. Parkland dedication fees may be used to develop new or rehabilitate existing park or recreation facilities to serve a proposed subdivision.

14.3 IMPACTS

Methods of Analysis

This section identifies and discusses environmental impacts resulting from the proposed project, and suggests mitigation measures to reduce the levels of impact. Potential impacts to public services and facilities were determined by comparing the proposed project to the existing conditions. The need for new or expanded services or facilities and the related physical impacts that could occur were analyzed qualitatively.

Water Supply

The analysis of impacts to water supply services was based on a consideration of the water demand generated by the proposed project compared to the thresholds of significance listed below. The expected water demand for the proposed project was determined based on water demand factors for proposed land uses on project site. Table 14-4 shows the anticipated water demand for the proposed project.

Table 14-4
Proposed Project Water Demand

Proposed Use [a]	Demand Factor	Proposed Project (acres)	Total Demand (gpd/AFY)
Alternative A			
Commercial	1,100 gpd/ac	21.04	23,144 gpd/25.94 AFY
Multi-Family Residential	1,900 gpd/ac	5.7	10,830 gpd/12.14 AFY
		Total	38.08 AFY
Alternative B			
Commercial	1,100 gpd/ac	13.7	15,070 gpd/16.89 AFY
Multi-Family Residential	1,900 gpd/ac	12	22,800 gpd/25.56 AFY
Office		1	1,100 gpd/1.23 AFY
		Total	43.68 AFY

Notes: gpd = gallons per day; AFY = acre-feet per year; ac = acre.
[a] Stantec 2016b

Wastewater Conveyance and Treatment

A Sewer Capacity Assessment was prepared for the project by Stantec Consulting Services, Inc. and is included in Appendix L. The analysis of impacts to wastewater services was based on a consideration of the wastewater treatment demand generated by the proposed project compared to the thresholds of significance discussed below. Table 14-5 shows the projected volume of wastewater generated based on the City's generation rates. The Sewer Capacity Assessment assumed that Alternative A would include 181,900 square feet of commercial space, while the

proposed site plans indicate development of 178,960 square feet. Thus the Sewer Capacity Assessment analysis provides a conservative analysis of potential impacts from Alternative A.

Table 14-5
Proposed Project Wastewater Generation

Proposed Use	SF/Units	Generation Rate (gpd/ac or unit)	Average Dry Weather Wastewater (gpd)	Safety Factor = 2	Peak Flow (gpd) (Peaking Factor = 4.8)[1]
Alternative A					
Commercial	181,900 (22.6 ac)	850	19,210	38,420	184,416
High Density Residential	90 (4.15 ac)	135	12,150	24,300	116,640
		Total	31,360 gpd/0.031 mgd	62,720 gpd	301,056 gpd
Alternative B					
Commercial	104,350 (14.2 ac)	850	12,108	24,216	116,237
High Density Residential	171 units	135	23,085	46,170	221,616
		Total	31,360 gpd/0.031 mgd	70,386 gpd	323,343 gpd

Notes: SF = square feet; gpd = gallons per day; ac = acre; mgd = million gallons per day.
Source: Appendix L

Solid Waste

The analysis of impacts to solid waste is based on commercial and residential sector generation rates provided by CalRecycle. CalRecycle provides a range of rates for each sector, as shown in Table 14-6. This EIR uses middle-of-the-range generation rates to be conservative.

Table 14-6
Waste Generation

	Proposed Project	Waste Generated	Total Waste
Alternative A			
Commercial/Retail	178,960 sf	0.046 lb/square feet/day	8,232 lb/day
Multifamily Residential	90 du	5.31 lb/du/day	477.9 lb/day
		Total	8,709.9
Alternative B			
Commercial/Retail	104,350 sf	0.046 lb/sf/day	4,800 lb/day
Office	8,500 sf	0.006 lb/sf/day	51 lb/day
Multifamily Residential	171 du	5.31 lb/du/day	909.72 lb/day
		Total	5,760.72 lb/day

Notes: sf = square feet; lb = pound; du = dwelling unit.
Source: CalRecycle 2016

Significance Criteria

Water Supply

Impacts of the proposed project to water resources would be considered significant if one or more of the following conditions would result from implementation of the proposed project. Would the project:

- Result in the inability of available water supply to meet the proposed project demand?
- Cause provision for water system modifications to be insufficient to meet proposed project demand?

Wastewater Conveyance and Treatment

A wastewater impact would be significant if any of the following conditions would result with implementation of the proposed project. Would the project:

- Exceed wastewater treatment requirements of the applicable RWQCB?
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?
- Result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Electricity and Natural Gas

An impact to electrical and gas utilities would be significant if any of the following conditions would result from implementation of the proposed project. Would the project:

- Result in increased demand for gas or electricity requiring new production facilities to supply the development?
- Require extension of infrastructure to the project area, the construction of which would cause significant environmental impacts?
- Encourage activities that result in the use of large amounts of energy or fuel, or use energy in a wasteful manner?
- Affect the ability of suppliers to accommodate the energy needs of the proposed project?

Schools, Libraries, and Recreation

Schools

An impact to schools would be significant if any of the following conditions would result from implementation of the proposed project. Would the project:

- Substantially increase school enrollment in any district that is near or over capacity?

Libraries

An impact to libraries would be significant if the following condition would result from implementation of the proposed project. Would the project:

- Increase demand for library services that would require expansion of library facilities, the construction of which would cause significant environmental impacts?

Parks and Recreation

An impact to parks and recreational opportunities would be significant if any of the following conditions would result from implementation of the proposed project. Would the project:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered park facilities?
- Result in the need for new or physically altered park facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or park standards?
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
- Include recreational facilities or require the construction or expansion of recreation facilities which might have an adverse physical effect on the environment?

Fire Protection and Emergency Medical Services

An impact to fire protection and emergency medical services would be significant if any of the following conditions would result from implementation of the proposed project. Would the project:

- Result in physical prevention of the routine extension of fire protection and emergency service to the project?
- Result in inadequacy of water volume and/or pressure to provide water for firefighting at the project site?

- Result in increased demands on existing fire services that would require additional fire protection facilities, the construction of which would result in significant environmental impacts?
- Result in increased demands on fire protection resources that would reduce overall fire protection adequacy within the City?

Law Enforcement

An impact to law enforcement services would be significant if any of the following conditions would result from implementation of the proposed project. Would the project:

- Require new or physically altered law enforcement facilities, the construction of which would result in significant environmental impacts?
- Creation of a physical obstacle preventing the provision of law enforcement activities?
- Result in any conflict with the ability of the Police Department to provide law enforcement services?

Solid Waste

An impact to solid waste collection services would be significant if the following condition would result from implementation of the proposed project. Would the project:

- Generate a volume of solid waste which cannot be accommodated by the existing solid waste collection service or landfill or generate a daily volume of waste which cannot be accommodated by the existing disposal facilities and services?

Impact Analysis

Impact 14-1: Would the project result in inadequate water supply and distribution infrastructure requiring construction of new facilities

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

Development of Alternative A would increase the demand for water supplies at the project site over what currently exists. Although the project site is located in the City of Grass Valley, it is located outside the City's water service area, and inside NID's water service area (Stantec 2016). Existing

NID pipelines surround the project site to the north, south, and east; they run along Dorsey Drive, Idaho Maryland Road, Spring Hill Drive, Golden Gate Terrace, and Sutton Way (Stantec 2016).

Preparation of a Water Supply Assessment (WSA) pursuant to Section 10912 of the California Water Code is not required for the proposed project. A formal WSA is required for residential developments of more than 500 dwelling units, shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space and projects that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project. Alternative A does not meet the thresholds requiring a formal WSA.

In 2015 NID's customers used 126,653 acre/feet/year (AFY) of water (Brown and Caldwell 2016, p. 3-2). NID projects the minimum water supply available for 2016, 2017, and 2018 estimated based on combined availability of all water sources to be 233,225 AFY (2016), 253,185 AFY (2017), and 202,611 AFY (2018) (Brown and Caldwell 2016, p.7-6). Applying water generation rates from the City's Water System Master Plan, the proposed project is expected to use 38.08 AFY. Based on NID'S demand in 2015, and the projected supply through 2018, NID would have adequate water supply for the proposed project. Impacts on existing water supplies from the proposed project would be **less than significant**.

Alternative B

Alternative B would develop more residential units and less commercial space. This would increase the demand for water compared to Alternative A. However, as shown in Table 14-5, Alternative B would result in a total water demand of 43.68 AFY. Based on NID's projected minimum water supply of at least 200,000 AFY and usage in 2015 of 126,653 AFY, the additional demand of 43.68 AFY that would be created under Alternative B, this alternative would have a **less-than-significant** impact to water supplies.

Impact 14-2: Would the project result in inadequate water supply and distribution infrastructure requiring construction of new facilities in the cumulative scenario

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The geographic area for consideration of cumulative impacts associated with water supply is the entire NID service area. As detailed in the NID UWMP, NID has sufficient water supplies to meet the anticipated future water demands in normal, single dry year, and multiple dry year conditions. For 2020 to 2040, NID predicts a reasonable supply of 360,800 AFY, although the district would have rights to 479,756 AFY. Table 14-1 shows the projected increased demand from 2020 to 2040, with an anticipated total demand in 2040 of 209,521 AFY. When comparing the future demands to the future projected supplies, NID would have an annual surplus. Therefore, NID is anticipated to have more than sufficient water to meet the needs of its customers, and this project, through 2040. Therefore, there cumulative impacts related to water supply would be **less than significant**, and there is no significant cumulative impact to which the project would contribute.

The UWMP also notes that water savings from codes, standards, ordinances, and land use plans generally decrease the water use for new and future customers, compared to historical customers. Water use in the Nevada Irrigation District has declined more than 20% between 2013 and 2017 (Southern California Public Radio 2017). NID anticipates water usage to decrease even more going forward with the addition of the Model Water Efficient Landscape Ordinance, California Energy Commission Title 20 appliance standards, and CALGreen Building Code (Brown and Caldwell 2016)

Impact 14-3: Would the project exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The Grass Valley WWTP would serve the project site. The commercial and high-density residential uses at the project site are expected to generate an ADWF of 0.031 mgd. With an existing capacity of 2.78 mgd and existing ADWF of 1.3 mgd (Stantec 2016), the Grass Valley WWTP has sufficient capacity to treat wastewater generated at the project site. The additional 0.031 mgd of wastewater from the proposed project would not exceed capacity of the WWTP.

Sewer flows from the site would be conveyed to the WWTP through a sewer collector line in Spring Hill Drive, which flows to the Idaho Maryland Trunk line, and then through the Main Trunk line from its connection to the Idaho Maryland trunk line to the WWTP. Wastewater generated at the site would be conveyed by gravity through the Spring Hill Drive sewer collector. The Sewer Capacity Assessment concludes that the existing 8-inch line has sufficient capacity to handle sewer flows from the proposed project, and that the line should be extended through the project site with a minimum slope of 0.00035 (Appendix L, Exhibit A). The Idaho Maryland Trunk sewer line ranges from 15 to 18 inches, and connects to the city's Main Trunk sewer where Idaho-Maryland Road intersects East Main Street. The Main Trunk is aligned roughly parallel to SR 20/49 and ultimately conveys flows to the City's WWTP (Appendix L). The Sewer Capacity Assessment for the project concluded that the addition of the proposed project is not expected to cause any new sewer segments to exceed capacity of the infrastructure but that the additional contribution from the project would slightly increase the existing full condition of the sewer trunk lines that are operating at or near capacity (Appendix L). The Sewer Capacity Assessment concluded that in the existing plus project condition:

- No surcharging in the Idaho Maryland Trunk is expected to occur and the maximum increase in HGL is expected to be 0.09 feet. Further, the existing deficiencies in the Idaho Maryland Trunk upstream of the Spring Hill Drive collector would not be exacerbated by the proposed project.
- No surcharging in the Main Trunk is expected to occur. The maximum increase in HGL is expected to be 0.28 feet.
- No surcharging in the Spring Hill Drive collector is expected to occur and this collector is predicted to have remaining capacity after addition of the flows from the proposed project.

Overall, the proposed project would not exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure. Impacts would be **less than significant**.

Alternative B

The commercial, office, and high-density residential uses under Alternative B are expected to generate an ADWF of 0.035 mgd. With an existing capacity of 2.78 mgd and existing ADWF of 1.3 mgd (Stantec 2016), the Grass Valley WWTP has sufficient capacity to treat wastewater generated at the project site. The additional 0.035 mgd of wastewater from the proposed project would not exceed capacity of the WWTP. The Sewer Capacity Assessment for the project concluded that the addition of the proposed project is not predicted to cause any additional sewer segments to exceed capacity of the infrastructure, consistent with the summary provided in the previous Alternative A discussion (Appendix L). Overall, the proposed project would not exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure. Impacts would be **less than significant**.

Impact 14-4: Would the project exceed existing treatment, collection, and disposal facilities, resulting in the need for expansion or new wastewater infrastructure in the cumulative condition

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

As discussed previously, wastewater from the project site would be collected by the City and conveyed to the Grass Valley WWTP, which has a capacity of 2.78 mgd. The cumulative context for impacts associated with wastewater conveyance and treatment is full buildout of the City's 2020 General Plan, including all Areas of Concern. The City anticipates a future ADWF of 1.6 mgd with development of vacant parcels within City limits, 1.9 mgd in the near term (5 years), and 2.1 mgd in the long term (10 years) (Stantec 2016). By the full buildout growth horizon, which includes all additional lands identified by the 2020 General Plan including the Special Development Areas of North Star and Kenny Ranch and the balance of the Berriman Ranch and adjacent property area, as well as all Areas of Concern identified in the 2020 General Plan, the ADWF is projected to reach 4.0 mgd (Stantec 2016). In the near-term growth condition, the near- and long-term growth condition, and the full buildout growth condition, storm events could cause peak flows that result in surcharging in several reaches of the wastewater collection system. This includes surcharging from the Main Trunk line, which consists of two parallel 18-inch lines. As shown in Table 5 of the Sewer Capacity Assessment, the surcharging is expected to occur at four manhole locations, with surcharging depth ranging from 1.27 feet to 4.13 feet under the following development scenarios: existing plus proposed project plus development of vacant parcels, existing plus proposed project plus near term development, and buildout plus the proposed project. Future conditions are also expected to include surcharging from four manhole locations on the Idaho Maryland Trunk, as shown in Table 6 of the Sewer Capacity Assessment. In the long term development plus proposed project condition, one location would have a peak surcharge of 1.48 feet. In the buildout plus proposed project condition, three locations would have peak surcharges ranging from 1.6 feet to 2.38 feet.

The Sewer Capacity Assessment calculates the percentage of peak flow attributable to the proposed project that contributes to surcharging, above the existing peak flow conditions, for Near Term and Long Term Conditions. One location, manhole I17-7, is the only manhole that conveys Dorsey Marketplace flows and fails the City's service criteria under Near Term conditions. The percent of peak flow attributable to the proposed project is 12.6%. This was determined by dividing the amount of peak flow in the manhole due to proposed project by the peak flow being contributed by all Near Term development (including the proposed project but excluding all existing flows).

There are three locations in the Long Term conditions where the proposed project would contribute to anticipated surcharging. The percentage of new flow that the proposed project would contribute at each location ranges from 11.2% to 15.5%, as shown in Table 7 of the Sewer Capacity Assessment.

The City's Wastewater Master Plan outlines an improvement plan with alternatives that address the deficiencies of the existing wastewater collection and treatment facilities. The plan includes four alternatives for each stage described above to accommodate the projected ADWFs of 1.6 mgd, 1.9 mgd, and 2.1 mgd. All of the alternatives will address the projected deficiencies. The Wastewater Master Plan indicates that one of the two 18-inch lines that comprise the Main Trunk would be upsized to 24 inches or an additional line would be added. Additionally, the City is currently planning to implement an inflow and infiltration (I/I) reduction project in targeted areas of the collection system. This I/I reduction project would not increase the capacity of the City's system; however, peak flow sewer capacity may be restored as I/I is reduced. (Stantec 2016)

The WWTP NPDES permit, Order No. R5-2009-0067 (revised and renewed in February 2016), allows for the discharge of effluent to Wolf Creek.

The proposed project would contribute to cumulative wastewater impacts. However, the project's contribution of 0.031 mgd under Alternative A and 0.035 mgd under Alternative B is minimal, and would not exceed the projected ADWF flows through the long term horizon. Because the City plans to address the projected deficiencies through the full buildout horizon, the project's contribution to cumulative wastewater impacts would be **less than significant**.

Impact 14-5: Would the project result in an increased demand for gas or electricity requiring new production facilities

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Under either Alternative A or Alternative B the project would increase energy use in the area to support the proposed commercial, residential, and office (Alternative B only) uses. Chapter 16 provides a summary of the project's anticipated energy needs, impacts, and conservation measures, in accordance with Appendix F of the CEQA Guidelines. The demand for electricity resulting from development of the proposed project would not require new production facilities. Title 24 of the California Code of Regulations ensures minimal increases in energy demands by requiring the use of energy-efficient appliances in all new residential, commercial, and educational facilities. Compliance with Title 24 would ensure that energy use at the project site is minimized. The project applicant would be responsible for the costs associated with extension of electrical service

infrastructure to the project site. Based on the existing capacity within PG&E's system and the energy demand associated with the proposed project, impacts related to requiring construction of new energy production facilities would be **less than significant**.

Impact 14-6: Would the project result in an increased demand for gas or electricity requiring new production facilities in the cumulative condition

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The cumulative context for impacts associated with electricity demand is buildout of the City's General Plan and the other projects discussed in Chapter 3, Land Use. This area is within the service area of the Sacramento-Sierra Division of PG&E. All new development within the service area must meet the energy efficiency requirements of Title 24 of the California Code of Regulations. Additionally, PG&E offers several energy efficiency programs and incentives to help all customers, including residential, commercial, and agricultural customers, reduce their water and energy usage, and cut their energy costs. The Title 24 requirements and PG&E's ongoing efforts to improve energy efficiency in the region would ensure that energy use in the cumulative scenario is minimized such that substantial new sources of energy generation are not needed. Thus, cumulative impacts would be **less than significant**.

Impact 14-7: Would the extension of dry utility infrastructure to the site that could cause significant environmental impacts

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Electric and gas service connections would be provided to the site from the existing transmission network in the project vicinity. As the site is surrounded by development, existing power and natural gas lines exist in the immediate vicinity of the site. Construction and installation of electricity and gas lines within the project site could contribute to physical impacts associated with construction activities, including air pollutant emissions, soil erosion, and reduced quality of stormwater runoff. Grading and construction activities associated with the provision of these services to the proposed residences are reflected on the proposed grading plans, and the impacts associated with these activities are evaluated throughout the resource sections of this Draft EIR.

With implementation of the construction-related best management practices (BMPs) and adherence to the City's policies identified throughout other sections in this EIR, it is expected that impacts from construction and installation of dry utilities would be **less than significant.**

Impact 14-8: Would the extension of dry utility infrastructure to the site that could cause significant environmental impacts in the cumulative condition

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

Extension of dry utility infrastructure within the project site would occur only at the time of project construction. While other development projects in the area would also be required to extend dry utility infrastructure to other project sites, the impacts, such as temporarily increased noise levels, and would not combine with other past, present, or reasonably foreseeable project impacts. Thus there would be **no significant cumulative impact** to which the project could contribute.

Impact 14-9: Would the project conflict with school district ability to provide educational services or create a substantial increase in school population?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

The proposed project would result in an increase in the existing student population. As discussed in Section 14.1, Environmental Setting, three elementary schools in the Grass Valley Elementary School District are within two miles of the project site. The district has seen a slight increase in students since 2005. Enrollment increased slightly from 1,663 students in the 2010–2011 school year to 1,745 students for the 2015–2016 school year (California Department of Education 2017a). The district has a capacity of 2,189 students (Hardy 2017). High school students from the project site would likely attend Nevada Union High School, which is approximately one mile from the project site. The Nevada Joint Union High School District has seen steadily declining enrollment since 1998 (California Department of Education 2017c). Nevada Union High School has a total enrollment of 1,653 for the 2015–2016 school year (California Department of Education 2017d) and a capacity of 2,814 (Nevada Joint Union High School District 2017).

The Nevada Joint Union High School District uses a student yield factor of 0.20 for multi-family dwelling units (Zeisler 2017). For the 90 units planned in Alternative A, the project would generate 18 new high school students. With generous capacity at Nevada Union High School, the additional 18 students anticipated from the proposed project would not exceed capacity at the school.

The Grass Valley Elementary School District uses a student yield factor of 0.50 students in grades K-6 and 0.50 students in grades 7-8 for multi-family dwelling units. For the 90 units planned in Alternative A, the project would generate 45 new K-6 grade students and 45 new 7-8 grade students. The available capacity within the Grass Valley Elementary School District is sufficient to accommodate these students.

Government Code 65996 requires the project applicant to pay impact fees to the school districts at the time of construction to offset increased student enrollment. As provided in the Government Code, payment of these fees constitutes adequate mitigation of impacts to the provision of school facilities. The applicant would be required to pay school impact fees of $3.48 per square foot for residential development and $0.56 per square foot for commercial and industrial development to the Grass Valley Elementary School District and the Nevada Joint Union High School District (Hardy 2017). Specific school facility developments would be subject to CEQA review on a project-by-project basis. Payment of the school impact fees, which would occur at the time building permits are issued, would ensure impacts associated with the addition of students to the over-capacity elementary and high schools would be **less than significant.**

Alternative B

Alternative B would develop 171 multi-family residential units, which would generate 34 new high school students, 86 new K-6 students, and 86 new 7-8 grade students. There is sufficient capacity at Nevada Union High School and within the Grass Valley Elementary School District to accommodate these students. Payment of the school impact fees, which would occur at the time building permits are issued, would ensure impacts associated with the addition of students to the over-capacity elementary and high schools would be **less than significant.**

Impact 14-10: Would the project conflict with school district ability to provide educational services or create a substantial increase in school population in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The cumulative context for impacts to schools is the district boundaries for the Grass Valley Elementary School District and the Nevada Joint Union High School District. With the expected growth in and surrounding Grass Valley, as discussed in Chapter 3, including the Loma Rica Ranch Specific Plan, the Grass Valley Elementary School District could be over capacity. Anticipated physical modifications to the Grass Valley Elementary School District include replacing existing portables with permanent construction, and construction of a new gym or cafeteria. The on-site improvements would not contribute to significant environmental effects; they would occur in areas already paved or within/adjacent to the athletic fields. Further, these improvements would be funded through developer impact fees to adequately address the project's fair share of demand for increased capacity. Therefore, while there may be temporary impacts related to school overcrowding, the cumulative impact would be **less than significant**.

The proposed project would contribute to the increased demands and capacity constraints of the local school districts in the cumulative scenario. As projects are approved and constructed within and around Grass Valley, coordinated planning efforts will need to continue to implement the expansion of facilities. The Nevada Joint Union High School District and Grass Valley Elementary School District share school impact fees. According to California Government Code Section 65996, SB 50 funding represents mitigation for the impacts on schools. Pursuant to state law, payment of statutory fees represents full and complete school facilities mitigation. Per California Government Code Section 65995(h) and Section 65996(b), the existing fee mechanisms would fully mitigate the financial effects of the student population associated with the proposed project. Thus the project's contribution to the cumulative impact would not be cumulatively considerable and this impact would be **less than significant**.

Impact 14-11: Would the project result in an increased demand for library services?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

The Nevada County Library System operates one library within City boundaries, at 207 Mill St., approximately 1.25 miles southwest of the project site, along with five other libraries within the county. The Grass Valley Library serves a population of approximately 12,860 people (U.S. Census Bureau 2010). Alternative A would result in the addition of 184 residents to the City, which is a 1.4% increase in total population. It is expected that the library services demands of the project residents would be minimal and would be accommodated by the existing Nevada County Libraries.

The City's goal for library services is to maintain 500 square feet of library space per 1,000 population (City of Grass Valley 1998). The population of the proposed project would represent a demand for 92 square feet of library space. These demands are not sufficient to require construction of new or expanded library facilities. Revenue generated by the proposed project in the form of special taxes, assessments, and fees would cover the costs of providing library services to the project's residents, including costs of acquiring new volumes for the library collection. All required fees and taxes paid by the developer and each future lot owner would ensure that project impacts to library services within the City would be **less than significant**.

Alternative B

Alternative B would result in the addition of 349 residents to the City, which is a 2.7% increase in total population, and would represent a demand for 174.5 square feet of library space. It is expected that the library services demands of the project residents would be minimal and would be accommodated by the existing Nevada County Libraries. All required fees and taxes paid by the developer and each future lot owner would ensure that project impacts to library services within the City would be **less than significant**.

Impact 14-12: Would the project result in an increased demand for library services in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The cumulative context for consideration of impacts to libraries is buildout of the City of Grass Valley and the other regional projects discussed in Chapter 3, Land Use. Under Alternative A, the project residents would create a demand for 92 square feet of library space while a demand for 174.5 square feet of space would be created by Alternative B. The six libraries nearest the City and within Nevada County would be sufficient to serve the population of the area, including the

minor additional demand created by the proposed project. Thus, the potential cumulative impact would be **less than significant**.

Impact 14-13: Would the project result in a need to construct new or expand existing parks and facilities?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

The City's Parks and Recreation Master Plan includes park standards per 1,000 residents, as shown in Table 14-4. The Grass Valley Subdivision Ordinance provides for land dedication for parks and recreation, and for in-lieu fees through which residential developments might facilitate park land acquisition. The standard for park and recreation dedications or in lieu fees, established under provisions of the "Quimby Act" (Section 66477 of the State Government Code), is a maximum of 5 acres per 1,000 population. Alternative A would accommodate 184 residents, and would therefore be required to provide 0.92 acres of parkland to satisfy the Quimby Act. The project would include a tot park and a dog park, which would meet a portion of the passive recreation needs of the project site residents.

As discussed in Section 14.1, Environmental Setting, the City exceeds its park standards of providing between 5 and 8 acres per 1,000 population for community parks but does not meet its standard of 1 to 2 acres per 1,000 population for neighborhood parks (City of Grass Valley 2001). However, the City has developed Mautino Park (community park) and plans to develop Morgan Ranch Park (neighborhood park). Morgan Ranch has been dedicated to the City and remains open space.

Given the current shortage of park space and the lack of new park space within the proposed site plan, Alternative A has the potential to increase the demand for community and regional parks in the City, which could accelerate or result in their physical deterioration. The Grass Valley Municipal Code provides for the City to require the project applicant to pay parkland dedication and park facilities fees at the time that building permits are issued to fully meet the City's park development standards, consistent with the General Plan. This would ensure that the project impacts associated with environmental effects due to increased use of existing parks, park facilities, and open space within the City would be reduced to **less than significant**.

Alternative B

Alternative B would accommodate 349 residents, which would correlate to a demand for 1.75 acres of parkland. Given the current shortage of park space and the lack of new park space within the proposed site plan, Alternative B has the potential to increase the demand for community and regional parks in

the City, which could accelerate or result in their physical deterioration. Payment of parkland dedication and park facilities fees to the City at the time that building permits are issued, as required by the Grass Valley Municipal Code would ensure that this impact remains **less than significant**.

Impact 14-14: Would the project result in a need to construct new or expand existing parks and facilities in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The geographic area for consideration of cumulative impacts related to parks and recreation is buildout of the City of Grass Valley General Plan and other development identified in Chapter 3. Under the General Plan, all projects in the area would be required to provide a minimum of 5 acres of parks and 5 acres of open space for every 1,000 people supported by the project. Where a proposed project does not provide sufficient park acreage to meet its required parkland dedication, the project applicant may pay the City's parkland dedication in-lieu fee. This provides for each project applicant to contribute a fair share amount toward establishment of parks and open space and, thus, the cumulative impact would be **less than significant.**

Impact 14-15: Would the project result in an increased demand for fire protection and emergency services requiring new facilities or reducing overall fire protection?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Development of the proposed project is likely to result in an increased demand for fire protection and emergency services. The proposed project site is in the jurisdiction of the GVFD, which provides fire protection and emergency medical services in the project area. The project proposes residential and commercial development (and office development under Alternative B) in an area adjacent to existing urbanized land uses. The project is not expected to substantially increase the risk of fire in the area.

The GVFD partners with the Nevada County Consolidated Fire Department and the Nevada City Fire Department under a Joint Operating Agreement and Automatic Aid Agreement, which allow for the nearest engine to an incident to respond and for a response by a minimum of two pieces of

equipment within four minutes. The City uses a planning ratio of 1.73 paid fire protection staff per 1,000 population. While the GVFD's fulltime staff of 14 firefighters does not meet that ratio for the City's approximate population of 12,860 people (U.S. Census Bureau 2010), when combined with the other local departments and the agreement to a response time of four minutes, the fire fighting and emergency medical response in the City is adequate.

Alternative A would include 90 multi-family residential units that have the potential to increase the City's population by approximately 184 residents while Alternative B would include 171 multi-family residential units housing 349 residents. This would create a demand for 0.32 new firefighters under Alternative A and 0.6 new firefighters under Alternative B. This additional personnel demand would not require construction of any new GVFD facilities.

The GVFD charges fees for various inspections, building plan reviews, hydrant inspections, etc. (City of Grass Valley 2017b). Additionally, Measure E, adopted in 2018, redirects 1 cent of sales tax to provide improvements to existing parks and new park facilities, plus fire, police and road/sidewalk improvements. Per the City's General Plan, existing standards for development that are expected to provide adequate access, fire flows, and other facilities to maintain an appropriate level of fire protection will continue to derive from the California Building Code, the California Fire Code, and the California Mechanical Code. Safety Policies 6 and 9 would incorporate fire hazard reduction considerations into land use plans and patterns, and develop and implement fire-safe community design and landscaping standards, construction codes, and property maintenance regulations. The project would not require the fire department to travel to remote locations because it is infill development; therefore, the project is not expected to lengthen response times to levels above GVFD standards. No improvements or additions to GVFD facilities would be necessary as a result of this project. This impact would be **less than significant**, and no mitigation is required.

Impact 14-16: Would the project interfere with emergency response or evacuation or increased demand for fire protection and emergency services requiring new facilities or reducing overall fire protection in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The cumulative context for consideration of impacts to emergency response and fire protection is buildout of projects within the jurisdiction of the GVFD. Prevention of emergency access or evacuation is typically related to physical improvements constructed within a project site. These types of impacts are site-specific and do not combine with other offsite impacts to create a larger cumulative impact. Per the City's General Plan, existing standards for development

that are expected to provide adequate access, fire flows, and other facilities to maintain an appropriate level of fire protection will continue to derive from the California Building Code, the California Fire Code, and the California Mechanical Code. Safety Policies 6 and 9 would incorporate fire hazard reduction considerations into land use plans and patterns, and develop and implement fire-safe community design and landscaping standards, construction codes, and property maintenance regulations. Safety Policy 11 requires the City to maintain appropriate standards for water supply, pressure, and distribution for fire suppression purposes. Circulation policy 24 also requires circulation and development plans be coordinated with public safety agencies, fire departments/districts, and emergency service providers. By complying with these requirements, each project would avoid creating obstacles to the routine extension of fire protection and emergency services in the vicinity.

As development continues in the area, the increased population could warrant improvements to the GVFD facilities and/or acquisition of new equipment and new staff. It could also warrant increased responses from neighboring fire districts. It is assumed that new development would within the GVFD service area would increase the total revenue that the GVFD collects through parcel taxes and fees for various inspections, building plan reviews, hydrant inspections, etc., which would provide funding to the GVFD to handle the cumulative increase in demand. Therefore, cumulative impacts would be **less than significant.**

Impact 14-17: Would the project require new law enforcement facilities?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Alternative A would establish 90 new dwelling units resulting in about 184 residents, as well as 178,960 square feet of new commercial/retail space within the City. Alternative B would establish 171 new dwelling units resulting in 349 new residents, 8,500 square feet of new office space, and 104,350 square feet of new commercial/retail space. The project area is currently served by the GVPD. The Department's headquarters are about one mile southwest of the project site. The slight increase in population under either Alternative A or Alternative B would be expected to generate a minimal increase in the demand for law enforcement services, but it is not anticipated to generate sufficient demand to require construction of new law enforcement facilities. This impact would be less than significant, and no mitigation is required.

Impact 14-18: Would the project interfere with the ability to provide law enforcement services?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

The design of the proposed project under either Alternative A or Alternative B would not create any obstacles to the provision of law enforcement services to the project site or to surrounding land/land uses. Roadway access is provided to all portions of the project area. The proposed project is expected to have no impact associated with creation of a physical obstacle to law enforcement.

Alternative A would add approximately 184 new residents and 178,960 square feet of commercial retail space. Alternative B would add 349 new residents, 8,500 square feet of new office space, and 104,350 square feet of new commercial/retail space. In accordance with Ordinance 441 Section 1-6, 1990 of the City's Municipal Code, the City may choose for developer fees that contribute to the city's capital improvement program to also serve improvements for the City's police service. All required fees would be paid by the developer to the City. Additionally, the City passed Measure N in 2012, a half-cent sales tax increase which supports police, fire, and public work services. Further, Measure E, adopted in 2018, redirects 1 cent of sales tax to provide improvements to existing parks and new park facilities, plus fire, police and road/sidewalk improvements. Therefore, taxes on additional commercial retail sales included in the proposed project would also contribute to those services. Since the project is not expected to present physical obstacles for law enforcement officers responding to calls, or require law enforcement officers to travel to remote locations (infill development), the project is not expected to substantially increase existing response times. Further, it is not expected that construction of any new facilities (which could result in additional environmental effects) would be needed. The slight population increase added by the proposed project would not warrant a need for construction of any new facilities to allow GVPD to provide sufficient services to the project site. Therefore, impacts related to law enforcement response times and physical improvements needed to support law enforcement service to the site would be **less than significant**.

Impact 14-19: Would the project contribute to the need for new law enforcement facilities or interfere with law enforcement response in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Anticipated development within the city of Grass Valley as discussed in Chapter 3, and development in the areas immediately surrounding the city define the cumulative condition for this impact. Prevention of emergency response is typically related to physical improvements constructed within a project site. These types of impacts are site-specific and do not combine with other off-site impacts to create a larger cumulative impact.

It is expected that call volume for law enforcement services would increase proportionally to the increase in population in the cumulative scenario. As development continues in the area, the increased population could warrant improvements to the GVPD facilities and/or acquisition of new equipment and new staff to ensure that service within the City limits remains sufficient. The demand would increase over time as projects are constructed and occupied; at the same time the development impact fees paid by developers and additional property taxes generated by development would provide funding to the City that could be used to fund additional GVPD staff to handle this increase in demand. Therefore, cumulative impacts would be **less than significant.**

Impact 14-20: Would the project generate waste of a daily volume that cannot be accommodated by the materials recovery facility?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Alternative A would add approximately 184 new residents and 178,960 square feet of commercial retail space. Alternative B would add 349 new residents, 8,500 square feet of new office space, and 104,350 square feet of new commercial/retail space. Using generation rates from CalRecycle, the combined residential and commercial/retail space under Alternative A would produce about 8,758 pounds or 4.38 tons of solid waste per day. The land uses proposed in Alternative B would produce about 5,791 pounds or 2.90 tons of solid waste per day.

Based on the average solid waste collection at the McCourtney Road Transfer Station of 291 tons per day and the permitted capacity of 350 tons per day, the generation of 4.38 daily tons of solid

waste under Alternative A or 2.90 daily tons of solid waste under Alternative B is not expected to significantly affect the overall capacity or lifespan of the transfer station. Based on a conservative estimate using the 960 peak vehicle trips and average waste received, each vehicle is estimated to deliver a third of a ton of waste per trip. Therefore, the proposed project could increase the trips by about 14 vehicles. The project's annual generation of a maximum of 4.38 tons and 14 vehicle trips would not exceed the capacity of the McCourtney Road Transfer Station. However, the facility is nearing capacity, and has been in the design phase for an upgrade since 2012 (Simpson 2017). The project would also not exceed the capacity of the Lockwood or Anderson Landfills: the Lockwood Landfill had a remaining capacity of 269.7 million cubic yards in 2010 (Nevada Division of Environmental Protection 2015) while the Anderson Landfill has an approximate capacity of 11.5 million cubic yards (RBF Consulting 2013).

The proposed project would be required to comply with the City's Grass Valley Solid Waste/Recyclable Materials Storage Ordinance, which requires developers of new construction projects to provide solid waste and recyclables storage areas. The project would also comply with Nevada County's adopted Source Reduction and Recycling Element that establishes goals and methodologies for compliance with AB 939.

The McCourtney Road Transfer Station and the Lockwood and Anderson Landfills would be able to accommodate the proposed project's waste. Additionally, these waste generation estimates are conservative because they do not include recycling diversions. Therefore, the proposed project would be served by landfills with sufficient permitted capacity to accommodate its solid waste disposal needs and impacts would be **less than significant**. No mitigation is required.

Impact 14-21: Would the project generate waste of a daily volume that cannot be accommodated by the materials recovery facility in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

Ongoing development in and surrounding the City of Grass Valley, and development throughout Nevada County, would contribute solid waste and vehicle trips to the McCourtney Road Transfer Station, which is already nearing capacity, as described previously. Because the Lockwood and Anderson Landfills each have remaining capacity of 291 million cubic yards, ongoing development in the region is not expected to exceed capacity. The County is in the design phase of an upgrade to the McCourtney Road Transfer Station, which would allow the facility to accommodate more waste. With implementation of an expansion to the transfer

station's permitted capacity and vehicle trips, cumulative impacts related to solid waste disposal would be **less than significant.**

14.4 MITIGATION MEASURES

All impacts associated with public services and utilities were determined to be less than significant. No mitigation measures are required.

14.5 REFERENCES CITED

Brown and Caldwell. 2016. Nevada Irrigation District 2015 Urban Water Management Plan. June 2016.

CalRecycle. 2016. Estimated Solid Waste Generation Rates. https://www2.calrecycle.ca.gov/WasteCharacterization/General/Rates. Accessed February 9, 2017.

CalRecycle. 2017. Facility/Site Summary Details: McCourtney Road Large Volume T.S. http://www.calrecycle.ca.gov/SWFacilities/Directory/29AA0010/Detail/. Accessed February 9, 2017.

City of Grass Valley City Parks Department. 2017. Accessed January 31, 2017. http://www.cityofgrassvalley.com/departments/parks-and-rec/city-parks

City of Grass Valley. 2001. Grass Valley Parks and Recreation Master Plan. February 2001.

Ghidotti. 2017. School Profile 2016-2017. 2017.

Kleinschmidt. 2011. NID Raw Water Master Plan Phase II. December 2011.

Stantec. 2016. City of Grass Valley Wastewater System Master Plan. August 23, 2016.

CHAPTER 15
HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential adverse effects on human health and the environment due to exposure to hazards that could result from implementation of the Dorsey Marketplace Project (proposed project). Hazards evaluated include those associated with hazardous materials including potential exposure to hazardous materials used, generated, stored or transported in or adjacent to the project site; and existing identified or suspected soil and/or groundwater contamination.

For the purposes of this environmental impact report (EIR), the definition for the term "hazardous materials" is taken from the California Health and Safety Code, Section 25501(o), where the term is defined as material that "because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment."

Similarly, the term "hazardous waste" is a subset of hazardous materials; its definition is derived from the California Health and Safety Code, Section 25517, and the California Code of Regulations, Title 22, Section 66261.2, which defines hazardous waste as material that "because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either cause, or significantly contribute to, an increase in mortality or serious illness, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, or otherwise managed."

Sources received to prepare this section include the following:

- *City of Grass Valley 2020 General Plan* (City of Grass Valley 1999a)
- *City of Grass Valley General Plan Update Environmental Impact Report* (City of Grass Valley 1999b)
- Grass Valley General Plan Background Report (Quad Knopf 1998)
- *Preliminary Geotechnical Engineering Report for Former Spring Hill Mine Property APNs 35-260-62, 63, and 64 Grass Valley, California* (Appendix J-1)
- *Preliminary Endangerment Assessment for Former Spring Hill Mine Property APNs 35-260-62, 63, and 64 Grass Valley, California* (Appendix J-2)
- *Removal Action Work Plan for Spring Hill Property APNs 35-260-62, 63, and 64 Grass Valley, California* (Appendix J-3A)

No responses to the Notice of Preparation (NOP) were received regarding hazardous wastes. The NOP and comments received in response to the NOP are included in Appendix A.

15.1 ENVIRONMENTAL SETTING

Regional Setting

The City of Grass Valley (City) is located within the western edge of the Sierra Nevada within Nevada County, California. The site is located in the southern half of the southeast quarter of Section 23 and the northern half of the northeaster quarter of Section 26, Township 16 North, Range 8 East of the Grass Valley Quadrangle Topographic Map. The regional location is shown in Figure 2-1 in Chapter 2, Project Description. In the heart of the California Gold Rush, the City of Grass Valley and the greater Nevada County was historically a mining area. Redevelopment of former mining sites can raise concerns associated with soil contamination, unknown mineshafts that may result in large sinkholes, and heavy metal contaminants leaching into the groundwater and affecting human health.

Existing Site Conditions

The approximately 27-acre project site was formerly the site of the Spring Hill Mine. Previous buildings associated with the mine have been demolished, but other features still exist, including a mill foundation, horizontal and inclined excavations, pits, relic foundations, and contaminated soil – primarily in stockpiles of mine waste rock and a dry tailings pond, as shown in Figure 15-1, Spring Hill Mine Site Plan. The site contains an estimated 44,000 cubic yards of mine waste rock and 20,000 cubic yards of processed tailings, as shown on Figure 15-2, Mine Waste Assessment Areas (Appendix J-2). Several roads and trails are also located within the site, some of which may be used periodically by trespassers.

The project site is near various commercial, institutional, and residential land uses, which may generate, transport, store, treat, or dispose of hazardous waste. These include three self-storage facilities, two apartment complexes, and two medical and nursing facilities. Most fuels, lubricants, solvents, and paints used by commercial, institutional, and residential land uses are considered hazardous materials.

Historic Uses of Property

The Spring Hill Mine operated intermittently from the late 1800s to the early 1940s, and included a well-developed operational mine with two mining locations and a mill site. The project site once supported buildings, mine shafts, tailing piles, and waste dumps on the western and central portion of the property, as shown on Figure 15-1. The mine facilities were used to extract gold, quartz, talc and chlorite group throughout its years of operation, though mainly gold and quartz were targeted.

Contaminants and Removal Action Work Plan

A Preliminary Endangerment Assessment (PEA, Appendix J-2)), which included a Human Health Screening Evaluation, was conducted to evaluate the project site for potential risks to human health and the environment resulting from historical site use. The RAW notes that the PEA has been approved by the Department of Toxic Substances Control (Appendix J-3A). The RAW describes procedures for conducting remedial activities to address recognized environmental conditions associated with past site use. The RAW also describes how the contaminated soils and mine waste would be removed from the project site.

The PEA included testing more than 90 soil samples from the AOCs and 8 ambient soil samples from other portions of the site. The Spring Hill site contains three areas of concern (AOCs), two of which are listed as areas for remediation, as shown in Figure 15-3, Areas of Concern. AOC 1, the former mill area, contains the highest levels of arsenic and lead contamination. AOC 2, the remaining mine waste site located west of the former mill site, contains levels of contamination that exceed the maximum public health levels, but are less than those of AOC 1. The mine waste and affected soil in AOC 1 are not acceptable for the three exposure scenarios considered: standard (unrestricted land use), commercial indoor worker, and construction worker. The mine waste and affected soil in AOC 2 are also not acceptable for use under the standard exposure scenario. In addition to the AOCs, other metals, including antimony, copper, lead, mercury and vanadium, are also considered constituents of potential concern (COPCs). The RAW recommends excavation and off-site disposal for the waste in AOC 1. Mine waste rock and tailings in AOC 2 are considered suitable for on-site consolidation and burial beneath the proposed commercial development, and can be classified as Group C mine waste per CCR Title 27 (Appendix J-3A).

Hazardous Material Release Sites

The Spring Hill Mine is listed as a Brownfields site. The Department of Toxic Substances Control has determined the cleanup project to be a Class 30 categorical exemption under CEQA because it is a minor cleanup action that will not have an effect on the environment, given the activities outlined in the RAW (Appendix J-3B).

Several federal and state databases provide information regarding facilities or sites identified as meeting the Cortese List requirements, and regarding businesses that have had or are currently experiencing a hazardous materials release within the general vicinity of the project area. These include CERCLIS, California Department of Toxic Substances Control's (DTSC) Envirostor, Geotracker (the leaking underground storage tank (LUST) database), Toxic Release Inventory database (TRI), the List of Active Cease and Desist Orders and Cleanup and Abatement Orders, and EnviroMapper.

The proposed project is not listed on the CERCLIS website, although Empire Mine State Park and the Idaho Maryland Mine property (just south of the project site) are listed as Superfund sites on the CERCLIS website (U.S. Environmental Protection Agency 2016a). The project site, Spring Hill Mine, is listed as an active voluntary cleanup site on the EnviroStor website (DTSC 2018). The EnviroStor website lists four sites in Nevada County on its Hazardous Waste And Substances Site List: two sites are under active cleanup (Lava Cap Mine and Empire Mine State Park) and two sites are backlogged (Pinewood Glen Estates and Davis Mill/Hoge Mine) (DTSC 2007). Lava Cap Mine is more than 3.5 miles from the project site, and Empire Mine State Park is more than 1 mile from the project site. The backlogged sites are both more than 4 miles from the project site. All four sites are listed because of mining-related hazards. There are no leaking underground storage tanks on or near the project site although six leaking underground storage tank cleanups have been completed within 2,500 feet of the project site, as listed on the identified by the State Water Board's GeoTracker website (California State Water Resources Control Board 2016). There are no sites in the project vicinity listed on the EPA Toxic Release Inventory database (U.S. Environmental Protection Agency 2016b).There are no solid waste disposal sites identified by Water Board with waste constituents above hazardous waste levels in the project vicinity (Cal EPA 2016a). There are six active Cease and Desist Orders (CDO) and Cleanup and Abatement Orders (CAO) in Grass Valley and Nevada City, located at local wastewater treatment plants and Empire Mine State Park outside of the project site (Cal EPA 2016b). Many CDOs and CAOs are related to discharges of domestic sewage, food processing wastes, or sediment that do not contain hazardous materials. However, the Water Boards' database does not distinguish between these types of orders. DTSC records do not identify any hazardous waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code in the project vicinity (DTSC 2007).

EPA maintains the EnviroMapper for the Envirofacts website, which compiles EPA environmental data and identifies environmental activities related to waste and land. Within approximately 4 miles of the project site, 38 facilities report to EPA about hazardous waste and land (U.S. Environmental Protection Agency 2013a). Examples of these include automotive repair shops, Sierra Community College, Sierra Nevada Memorial Hospital, dry cleaners, and Raley's. Bob's Enterprises (listed for miscellaneous fabricated metal product manufacturing) and the Idaho Maryland Mine property are located on the border of the project site (U.S. Environmental Protection Agency 2013a).

Business Hazardous Waste Collection

Businesses classified as Conditionally Exempt Small Quantity Generators (CESQG) are required to ship their hazardous wastes to the McCourtney Road Transfer Station Hazardous Waste Facility and Recycling Center in Grass Valley for proper disposal. There are no CESQGs within the project site (U.S. Environmental Protection Agency 2013a).

Transportation of Hazardous Materials

The project is located adjacent to State Route (SR) 20/49, which is a major north-south transportation corridor in Nevada County that serves all types of traffic, including vehicles and trucks containing hazardous materials and waste. Hazardous materials can be in liquid, solid, or gas form, and examples can include explosives, flammables, corrosives, radioactive materials, and poisons.

Airport-Related Hazards

The project site is located approximately 1.5 miles from the Nevada County Airport runway. The Nevada County Airport Land Use Compatibility Plan (NCALUCP) designates its influence area as any location within 1.7 miles of the airport runway (Mead & Hunt 2011). Therefore, according to the NCALUCP, the project site is located within Zone D, Traffic Pattern Zone/Urban Overlay Zone.

The project is also located near two private airstrips. Sierra Nevada Memorial Hospital Heliport, owned by Sierra Nevada Memorial Hospital, located at 155 Glasson Way, is approximately 0.2 miles from the project site. Grass Valley Service Center Heliport, owned by Pacific Gas & Electric, is located approximately 2 miles from the project site at the intersection of Highway 49 and McKnight Way.

Asbestos-Related Hazards

The project site contains serpentine rock formations from the mafic and ultramafic era. In the Sierra Nevada foothills area, ultramafic rock and serpentinite are associated with naturally occurring asbestos (NOA) minerals such as chrysotile, actinolite, and tremolite. Materials containing NOA can become a public health hazard if the rock is broken and the asbestos fibers or dust become airborne.

Fire-Related Hazards

Nevada County contains many areas that consist of steep topography, flammable vegetation, and long, dry summers, which result in conditions conducive to wildfires. CAL FIRE maps rank locations as Very High, High, and Moderate for Local Responsibility Areas (areas served by local fire protection districts rather than state or federal agencies). The project site is located in a non-Very High Fire Hazard severity zone, within the local responsibility area (CAL FIRE 2008). Additionally, the proposed project consists of infill in an area that already includes similar commercial land uses served by local fire protection services.

Natural Disaster-Related Hazards

Hazards specifically associated with earthquakes, soil stability, and other geologic conditions are discussed in Chapter 12, Geology, Soils, Seismicity, and Paleontology. Hazards specifically

associated with flooding, mudflow, and other hydrologic conditions are discussed in Chapter 13, Hydrology and Water Quality.

Proximity to Schools

CEQA Guidelines Section 15186 requires consideration of projects within 0.25 miles of a school to ensure that potential health impacts resulting from exposure to hazardous materials, wastes, and substances are evaluated. The project site is located approximately 0.5 miles southeast of William & Marian Ghidotti High School. Nevada Union High School and Nevada Joint Union High School District (to the northwest), and Grass Valley Charter School (to the southwest) are each located approximately 1 mile from the project site.

Emergency Response and Evacuations

As described in the City of Grass Valley 2020 General Plan, the city's primary evacuation routes are the two freeways serving Grass Valley: SR 49 (toward the north and toward the south) and SR 20 (toward the west). Secondary evacuation routes include Brunswick Road (toward the east/southeast), and Idaho-Maryland Road (toward the east, until and unless the road is closed) (City of Grass Valley 1999a). SR 20 and SR 49 are co-located through most of Grass Valley. The project site is adjacent to and southeast of SR 20/49. The project site also connects to Idaho-Maryland Road via Spring Hill Drive to the south, and Idaho-Maryland Road connects to both SR 20/49 to the southwest and Brunswick Road to the southeast of the project site.

15.2 REGULATORY FRAMEWORK

Federal Regulations

Several federal agencies regulate hazardous materials, including the U.S. Environmental Protection Agency, the Occupational Safety and Health Administration (OSHA), the U.S. Department of Energy, and the U.S. Department of Transportation. Applicable federal regulations are contained primarily in Title 40 (Chapter I – U.S. Environmental Protection Agency), Title 29 (Chapter XVII – OSHA), Title 10 (Chapter X – U.S. Department of Energy), and Title 49 (Chapter I – U.S. Department of Transportation) of the Code of Federal Regulations. Title 40, Chapter 1, regulates water and air contamination, pesticide use, toxic substances, emergency planning, and solid and liquid wastes. Title 29, Chapter 17, regulates worker safety and health concerning environmental hazards, and Title 10, Chapter 10, regulates petroleum-based products. Title 49, Chapter 1, regulates the transportation of hazardous materials, and details hazardous material spill/release prevention and response plans. Title 40, 300.400 et seq., entails the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), which dictates how remedial action work plans are conducted. Section 264.18 of CFR Title 40, the Resource Conservation and Recovery Act, pertains to the treatment, storage and disposal of hazardous waste.

Toxic Release Inventory

The Emergency Planning and Community Right-to-Know Act of 1986 and the Pollution Prevention Act of 1990 established a publicly available database called the Toxic Release Inventory (TRI), which has information on toxic chemical releases and other waste management activities. The TRI is updated annually and lists chemical releases by industry groups and federal facilities managed by EPA.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, was enacted by Congress on December 11, 1980. It established prohibitions and requirements concerning closed and abandoned hazardous waste sites; provided for liability of persons responsible for releases of hazardous waste at these sites; and established a trust fund to provide for cleanup when no responsible party could be identified. Amended in 1986, the act establishes two primary actions: (1) to coordinate short-term removal of hazardous materials; and (2) to coordinate and manage the long-term remedial response actions associated with sites identified on the Environmental Protection Agency's (EPA's) National Priorities List (NPL). The NPL lists known or threatened releases of hazardous substances, pollutants, or contaminants. The Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) is a national database and management system used by the U.S. Environmental Protection Agency (EPA) to track cleanup activities at CERCLA hazardous waste sites.

State Regulations

Asbestos Regulations

Asbestos exposure in construction work is regulated by Title 8 California Code of Regulations (CCR) Section 1529, which defines permissible exposure limits and work practices. The law requires that removal or disturbance of more than 100 square feet of material containing more than 0.1% asbestos must be performed by a registered asbestos abatement contractor, but associated waste labeling is not required if the material contains 1% or less asbestos. If the asbestos content of materials exceeds 1%, all requirements of the standard become effective. With regards to potential worker exposure, notification, and registration requirements, asbestos-containing construction material (ACCM) is defined by California Division of Occupational Safety and Health (Cal/OSHA) as any construction material containing more than 0.1% asbestos (8 CCR 341.6).

California Environmental Protection Agency (Cal/EPA) Air Resources Board Regulation 93105, *Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations* (ATCM), specifies how to handle disturbance of soil and rock that contain

ultramafic rock, serpentinite or NOA minerals. Per the ATCM, site work must be performed according to protocols established by an Asbestos Dust Mitigation Plan.

California Hazardous Waste Control Law

The California Hazardous Waste Control Law is administered by the California Environmental Protection Agency to regulate hazardous wastes. Although the Hazardous Waste Control Law is generally more stringent than Resource Conservation and Recovery Act, until the U.S. Environmental Protection Agency approves the California program, both the state and federal laws apply in California. The Hazardous Waste Control Law lists 791 chemicals and about 300 common materials that may be hazardous; establishes criteria for identifying, packaging, and labeling hazardous wastes; prescribes management controls; establishes permit requirements for treatment, storage, disposal and transportation; and identifies some wastes that cannot be disposed of in landfills.

Title 22 of the California Code of Regulations defines hazardous waste as a waste that exhibits the characteristics that may:

A. cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or

B. pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, disposed of or otherwise managed (22 CCR 662610).

According to Title 22 of the California Code of Regulations, substances having a characteristic of toxicity, ignitability, corrosively, or reactivity are considered hazardous waste. Hazardous wastes are hazardous substances that no longer have a practical use, such as material that has been abandoned, discarded, spilled, or contaminated, or that is being stored prior to proper disposal.

California Code of Regulations Title 27

Sections 22470 through 22490 of CCR Title 27 pertain to classification of mine waste for the purposes of disposal.

California Health and Safety Code

Section 25356.1 of the California HSC requires the regional water quality control board (RWQCB) to prepare or approve removal action plans (as defined in Section 25323.1) for the sites listed pursuant to Section 25356. This section also allows for a potentially responsible party to request DTSC or the RWQBC to prepare or approve a remedial action plan for a site not listed pursuant to Section 25356, if it is determined that a removal or remedial action is required to respond to a release of a hazardous substance. The project applicant has entered into a Voluntary Cleanup Agreement with the DTSC.

Additionally, this section defines the basis for creating remedial plans, the required public involvement, and standards for response actions. Remedial action plans are based upon Section 25350 (e) of the National Oil and Hazardous Substances Pollution Contingency Plan and the following six factors, to the extent that they do not require a less stringent level of cleanup than the federal regulations:

- Health and safety risks posed by the conditions at the site;
- The effect of contamination or pollution levels upon present, future and probable beneficial uses of contaminated, polluted or threatened resources;
- The effect of alternative remedial action measures on the reasonable availability of groundwater resources for present, future, and probable beneficial uses;
- Site-specific characteristics, including the potential for off-site migration of hazardous substances, the surface or subsurface soil, and the hydrogeologic conditions, as well as preexisting background contamination levels;
- Cost-effectiveness of alternative remedial action measures; and
- The potential environmental impacts of alternative remedial action measures, including but not limited to, land disposal of the untreated hazardous substances as opposed to treatment of the hazardous substances to remove or reduce its volume, toxicity, or mobility prior to disposal.

Proposed remedial actions in the work plan must be based upon, and be no less stringent than the following six regulations:

- Requirements established under federal regulations pursuant to Subpart E of the NCP (40 CFR 300.400 et seq.), as amended, which pertains to remedial action and selection of remedial alternatives; Regulations established pursuant to Division 7 (commencing with Section 13000) of the California Water Code, which pertains to state and regional water quality control; Applicable water quality control plans adopted pursuant to Section 13170 of the California Water Code;
- Article 3 (commencing with Section 13240) of Chapter 4 of Division 7 of the California Water Code, which pertains to water quality control plans and waste discharge requirements;
- Applicable state policies for water quality control adopted pursuant to Article 3 (commencing with Section 13140) of Chapter 3 of Division 7 of the California Water Code, to the extent that those policies are consistent with the federal regulations; and

Section 25356.1 of the HSC outlines public participation requirements for the RAW. Requirements include the preparation of a community profile report to determine public interest in the remedial

action, notice of the RAW in a newspaper of general circulation, provision of a minimum 30-day public comment period, and preparation of a responsiveness summary

Applicable provisions of the California HSC, to the extent those provisions are consistent with the federal regulations; and the PEA risk assessment findings. Section 25505 of the HSC requires businesses using hazardous materials to develop and submit a business plan describing the facility, inventory, a site map, emergency response and evacuation plans, and training programs, to the local Certified Unified Program Agency (CUPA), which, for the proposed project, is the Hazardous Materials Division of Nevada County Department of Environmental Health.

California Human Health Screening Levels

Developed by the California Environmental Protection Agency, pursuant to Health and Safety Code Section 57008, California Human Health Screening Levels (CHHSLs) are concentrations of chemicals in soil or soil gas below thresholds of concern for risk to human health: an excess lifetime cancer risk of one-in-a-million and a hazard quotient of 1 for non-cancer health effects.

Cortese List

The Hazardous Wastes and Substances Site (Cortese) List, maintained by Cal-EPA, is a list of data resources used by state and local agencies and developers to provide information about the location of hazardous materials release sites, per Government Code Section 65962.5. The DTSC, State Water Board, and California Department of Resources Recycling and Recovery all contribute data related to hazardous waste and substances sites, leaking underground storage tanks, solid waste disposal sites with waste constituents above hazardous waste levels, active Cease and Desist Orders and Cleanup and Abatement Orders, as well as hazardous waste facilities subject to corrective action.

National Pollutant Discharge Elimination System

Authorized by the Clean Water Act, the National Pollutant Discharge Elimination System (NPDES) Permit Program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge do not need an NPDES permit; however, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters. The NPDES Program is a federal program which has been delegated to the State of California for implementation through the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards), collectively Water Boards (see the following State Water Resources Control Board section).

Stormwater Pollution Prevention Plan

Construction General Permits require the development of a Stormwater Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Any project that disturbs one or more acres of soil or whose projects disturb less than one acre but are part of a larger common plan of development that in total disturbs one or more acres, are required to obtain coverage under the General Permit for Discharges of Stormwater Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to this permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) protects water quality in California by setting statewide policy. The SWRCB supports the nine RWQCBs, which, within their areas of jurisdiction, protect surface and groundwater from pollutants discharged or threatened to be discharged to the waters of the state. For Nevada County, the Central Valley RWQCB maintains jurisdiction within the subject basin. This protection is carried out by the RWQCB through the issuance and enforcement of National Pollutant Discharge Elimination System permits, called Waste Discharge Requirements, regulation of leaking USTs and contaminated properties through the Leaking Underground Storage Tank (LUST) and Spills, Leaks, Investigation, and Cleanup (SLIC) programs, respectively. The SWRCB also regulates the handling, storage, and disposal of hazardous substances on construction projects. Permits and/or other action by the SWRCB may be required if contamination of water or soils occurs during construction of the proposed project.

Local Regulations

City of Grass Valley 2020 General Plan

The General Plan is a comprehensive plan and policy document regarding growth and development in the City of Grass Valley and the surrounding unincorporated area. The Grass Valley 2020 General Plan Safety (S)) Element identifies safety-related issues designed to reduce, eliminate, and avoid risks to persons and property from these issues. The Circulation (C) Element is intended to (1) promote the safe, efficient and reliable movement of the people and goods; (2) facilitate a level of transition from the automobile to other modes of transportation; and (3) provide an adequate level of transportation

service for all persons traveling in and through Grass Valley. The following goals (G), objectives (O), policies (P) and implementation actions (I) are relevant to the proposed project:

1-SG: Reduce the potential risk of death, injury, property damage, and economic and social dislocation resulting from hazards.

5-SO: Reduction of risk from exposure to hazardous materials, including contaminated sites

24-CP: Coordinate circulation and development plans with public safety agencies, fire departments/districts and emergency service providers.

4-SP: Based on location or probable need, require development plans in mined areas to include in depth assessments of potential safety, including mining-related excavations, and health hazards and accompanying mitigation measures.

7-SP: Identify, maintain, and mark evacuation routes for use in case of disasters or emergencies.

8-SP: Assure public awareness of fire-safety measures, including those addressing property maintenance and evacuation.

9-SP: Develop and implement fire-safe community design and landscaping standards, construction codes, and property maintenance regulations.

Local Hazard Mitigation Plan for Nevada County 2011-2016

The Nevada County Operational Area Emergency Services Council prepared this Local Hazard Mitigation Plan on behalf of the County, its incorporated cities and towns and participating districts. The planning process examined the recorded history of losses resulting from natural and selected human-caused hazards and analyzed the future risks to the county by these hazards. The plan names several mitigation goals and objectives that are based on the results of the risk assessment, and contains specific recommendations, action items and projects that can mitigate future disaster losses.

Nevada County Airport Land Use Compatibility Plan

The NCALUC (Mead & Hunt 2011) sets compatibility criteria applicable to local agencies in their preparation or amendment of land use plans and ordinances and to land owners in their design of new development. The influence area extends 1.5 miles from the airport's runway. Within Zone D, the Traffic Pattern Zone/Urban Overlay Zone, the plan requires a maximum residential density of 20 dwelling units/acre, but no intensities limit for other uses. Prohibited uses include highly noise-sensitive uses and hazards to flight. NCALUC airspace review is required for objects more than 3,207 feet above mean sea level (MSL). NCALUC review may be warranted for proposals for new development (including buildings, antennas, and other structures) having a height of more

than 100 feet within Compatibility Zone D. Land use development that may cause the attraction of birds to increase is also prohibited.

15.3 IMPACTS

Methods of Analysis

The baseline for hazards and hazardous materials includes the hazards and hazardous materials that currently exist in the area and which are identified in sources cited in the Environmental Setting. This section provides a qualitative discussion of the potential risks involving hazards and hazardous materials as a result of the proposed project.

Significance Criteria

Potential significant impacts associated with hazardous waste/materials impacts have been evaluated using the following criteria. Would the project:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within 0.25 miles of an existing or proposed school?
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?
- Create or expose residents to potential health hazards?

Project Impacts

Impact 15-1: Would the project create a significant hazard to the public or environment through routine transport, use, or disposal of hazardous materials?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 15a	Mitigation Measure 15a
Significance after mitigation:	Less than significant	Less than significant

Alternative A

As discussed in Section 15.1, Environmental Setting, the project site contains hazardous materials as a result of the past mining activities. These conditions must be remediated to make the site safe for human use. Remediation would involve the use, transport, and disposal of hazardous materials. Thus, the project would have a **potentially significant** impact associated with potential hazards associated with these activities. As discussed in this impact, implementation of the RAW would ensure that the remediation activities are carried out in a manner that does not create additional hazards. Mitigation Measure 15a specifies that implementation of the RAW must be completed to the satisfaction of the DTSC prior to proceeding with development of the proposed project. With implementation of the RAW as required by Mitigation Measure 15a, the impact would be reduced to a **less-than-significant** level.

Remediation of the project site, as well as construction and operation of residential and commercial uses could result in the transport, use, or disposal of hazardous materials. Remediation and construction would require use of heavy construction equipment (e.g., excavators, backhoes, grading machines, asphalt machines), the operation and maintenance of which would involve the use and handling of hazardous materials, including diesel fuel, gasoline, lubricants, and solvents. These hazardous materials would be used and stored within the area designated for the remediation and construction sites. Diesel fuel would be used to power the equipment and would be present in the fuel tanks of the individual pieces of equipment and potentially in larger quantity storage tanks used to refuel the equipment. Additionally, during remediation and construction of residential or commercial buildings, small quantities of lubricants and solvents would be stored in the support area for maintenance of construction equipment. The quantities of hazardous materials could exceed regulatory thresholds and thus require transport, handling, storage and disposal in accordance with federal, state, or local regulations, to minimize the potential for release of hazardous materials into the environment. Therefore, the use and presence is not anticipated to cause a significant hazard to the public or environment.

Alternative A would include cleanup of the former mine site. Prior to construction of the proposed project, an estimated 64,000 cubic yards of mine waste rock and processed tailings would need to be removed from the project site. As described in Section 15.1, Environmental Setting, the

contaminated soils, rock, and tailings contain constituents of potential concern (COPC) regarding human health, such as arsenic, antimony, vanadium, and other metals. The RAW describes two methods by which humans can be exposed to high levels of metals: contact with skin and incidental ingestion of surface soil, and inhalation of airborne particulates resulting from wind erosion of surface soil. The RAW describes procedures for conducting soil excavation, off-site disposal, and on-site placement at the project site, to make the project site safe for human use. Excavation and disposal, as well as burial of the mine waste, effectively reduces human health risk by eliminating the potential for human exposure (incidental ingestion, inhalation of airborne particulates, and dermal contact with the impacted soil). The RAW also includes a Site Safety Plan, which all parties involved in the remediation process would follow (Appendix J-3A).

Remediation would take place before construction of the proposed project. The RAW identified two separate strategies for remediation of AOC 1 and AOC 2. The mine waste within AOC 1 would be excavated and removed from the site while the waste in AOC 2 would be consolidated and buried beneath the proposed commercial development, as discussed further in the following paragraphs. Any mine waste and soil that would be consolidated and buried on site, or which would remain on site without consolidation and burial, must meet acceptable constituent concentration percentages, as identified in the RAW. Any remaining materials that exceed those percentages would be removed from the site (Appendix J-3A).

The RAW recommends excavation and off-site disposal for AOC 1. The roughly 1,700 cubic yards of mine waste and affected soil would be excavated and transported to an appropriate Class I or Class II solid waste disposal facility. Class II (non-hazardous) waste would be transported to and disposed at Norcal Waste Systems' Ostrom Road Landfill Inc., in Wheatland. Class I waste would be transported to and disposed at the Chem Waste Management facility in Kettleman Hills. Soil would be excavated via mechanical excavation using rubber-tired or track-mounted backhoe excavators and loaders. During excavation, stockpiling and loading, workers would dampen soil as necessary, using water trucks or hoses, to reduce dust generation. Before removing the affected soil, vegetation removal would also be conducted in the areas to be excavated using hand-held mechanical equipment to minimize disturbance of soil prior to excavation, before being removed from the work area. The soil would then be stockpiled onto and covered with plastic sheeting, adjacent to the excavation. The covered soil would be loaded into trucks and transported to an off-site landfill for disposal. Based on preliminary volume estimates, approximately 150 truckloads would be used for off-haul, and another 150 truckloads would be used for import of clean fill. The trucks used for off-haul would have closed-tarp bins or covered with tarps. They would exit the site via Spring Hill Drive (a public roadway with single lanes in each direction) to the south and Idaho Maryland Road (a public roadway with single lanes in each direction) to the west. Trucks would enter SR 20/49 southbound from Idaho-Maryland Road, approximately 1 mile southwest of the site. Transportation and disposal of waste from the site is to be conducted in accordance with applicable local, state, and federal regulations (Appendix J-3A).

The RAW recommends excavation and on-site placement (or capping) for AOC 2. An estimated 62,300 cubic yards of mine waste and affected soil would be excavated, transported within the site, and capped in an area that is not subject to surface water infiltration or groundwater seepage, such as the foundations of a building, or a parking lot, as shown in the conceptual plan provided on Figure 15-4, On-Site Containment. Similar to the excavation for AOC 1, excavation methods would include mechanical excavation using rubber-tired or track-mounted backhoe excavators and loaders, and soil would be damped to reduce dust generation. All transportation of mine waste and affected soil would occur within the site boundaries, and may include minor clearing and grading. The RAW, Appendix J-3A, includes a conceptual placement plan and general grading recommendations. Prior to implementation of the RAW, DTSC would review and approve site development plans showing the final development layout and waste placement details. In the event that any ground-disturbing activities would occur on the project site prior to the site remediation activities, DTSC must review the proposed ground-disturbing activities and the project proponent/construction contractor would mark remediation areas on the site so the areas may be avoided. After excavation and on-site placement, soil samples would be tested. If soil sample results meet the proposed remedial goals, the former location of AOC 2 would then be suitable for unrestricted land use, such as construction and implementation of the proposed project. Development of the proposed project would coincide with site remediation. Once construction of the proposed commercial building and paved parking area over the soil repository area is complete, in accordance with the project development plans, DTSC would be notified that the project is complete. The structures and pavement are intended to provide access restriction; however, if structures and pavement are not immediately constructed upon completion of site remediation, the waste placement area shall be fenced and posted until the structures and pavement are constructed (Appendix J-3A).

The project proposes to construct approximately 178,960 square feet of commercial building space, consisting of four major shops, six smaller shops, and three drive-through restaurants. Businesses such as these may be classified as small or large quantity generators of hazardous waste depending on the nature of their businesses. The operation of businesses that could be developed on lands designated for commercial use could result in the transport, use, or disposal of hazardous waste within the project area. However, there is a low potential for these materials to cause a significant hazard to the public or environment because all new businesses would be required to comply with the regulations, standards, requirements, and guidelines, established by federal and state law and overseen by agencies as previously described in Section 15.2, Regulatory Framework. Additionally, the California Safety Code requires all businesses that handle moderate amounts of hazardous materials to submit business plans and emergency management plans. Therefore the proposed project would not be expected to cause a significant hazard to the public or environment and the impact would remain **less than significant**.

The proposed project would also construct 90 multiple-family dwelling units. Hazardous wastes generated by residential uses are referred to as household hazardous waste. Households commonly

discard items such as paints, stains, oven cleaner, motor oil, and pesticides, as well as batteries, thermostats, lamps, televisions, and computer monitors that contain hazardous constituents. The county collected 1,023,398 tons of household hazardous waste through its various collection programs in 2014, or 10.42 pounds of hazardous household waste per person (California Department of Resources Recycling and Recovery 2016). Based on this average rate of hazardous household waste generation, buildout of residential development under the proposed project would allow for approximately 1,917.28 pounds of household hazardous waste each year. Household hazardous waste is exempt from reporting. Nevada County directs residents to the McCourtney Road Transfer Station in Grass Valley to dispose of household hazardous waste (Nevada County 2016). Therefore, it is anticipated that the generation of household hazardous waste or the disposal of it as a result of the residential development would result in a **less-than-significant** hazard to the public or environment.

Alternative A would place residences near the SR 20/49 corridor and possible hazardous materials being transported along the corridor. However, residences are already located in the vicinity of the project site and SR 20/49. The project would not increase the likelihood of hazardous spills or accidents on the highway. Nor would the project affect the type or amount of hazardous materials or the frequency of hazardous materials shipping. Therefore, this impact would be **less than significant**.

The DTSC approved the RAW and filed a Notice of Exemption from CEQA for the cleanup project (Appendix J-3B). Remediation, as well as construction and operation of the proposed project, would include oversight by the appropriate federal, state, and local agencies and would comply with applicable regulations regarding hazardous materials. Therefore, there is a low likelihood that hazardous materials would create a significant hazard to the public or environment through the routine transport, use, or disposal of materials during remediation, construction and operation of Alternative A. With implementation of Mitigation Measure 15a, this impact would be **less than significant**.

Alternative B

Alternative B would be constructed within the same project site and involve the same area of disturbance as Alternative A. It would require the same remediation outlined in the RAW and would result in the same low likelihood of a significant hazard to the public or environment through the routine transport, use, or disposal of materials during remediation and construction. Alternative B proposes to develop less commercial space, more multifamily dwelling units, and 8,500 square feet of office uses. The use of hazardous materials in a typical office use would be similar to the use of hazardous materials in commercial and residential areas. Thus Alternative B would have the same low likelihood of a significant hazard to the public or environment through the routine transport, use, or disposal of materials during project operation as Alternative A. With implementation of Mitigation Measure 15a, Alternative B would have a **less-than-significant** impact.

Impact 15-2: Would the project create a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 15a	Mitigation Measure 15a
Significance after mitigation:	Less than significant	Less than significant

Alternative A

Remediation of the project site and development of Alternative A, as previously described, would remove risks and improve safety related to human health and the environment, compared to existing conditions. However, during remediation and construction, activities such as soil excavation and stockpiling, rock excavation, fill slope grading, paving, and other disruption of the existing soil and geology on the project site would occur. Construction equipment that would be used during remediation or to build the proposed project has the potential to accidentally release oils, greases, solvents, and other finishing materials. Potential spills or upset of such materials would have the potential to affect surrounding land uses. However, because the volume in any single piece of construction equipment is generally less than 50 gallons, and fuel trucks are limited to 10,000 gallons or less, the amount of hazardous material released during a construction-related spill is typically small. While spills of hazardous materials are not uncommon during construction, the enforcement of construction and demolition standards, such as a stormwater pollution prevention plan (SWPPP) and BMPs by appropriate local and state agencies (i.e., fire departments) would minimize the potential for an accidental release of petroleum products and/or hazardous materials. Federal, state, and local laws would be enforced to reduce the effects of potential hazardous materials spills during construction.

Mechanical soil disturbance activities associated with construction would disrupt the existing soil and geology on the project site and have the potential to disrupt NOA, which often occurs in the Sierra Nevada foothills Area in ultramafic rock and serpentinite rock. If NOA is found during remediation or construction of the proposed project, NOA materials would be handled in accordance with Cal/EPA Air Resources Board Regulation 93105, Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. This regulation requires site work be performed according to protocols established by an Asbestos Dust Mitigation Plan, which is included in the RAW (Appendix J-3A). The Asbestos Dust Mitigation Plan outlines engineering controls that must be used on site to reduce the risk of release of metals and NOA fibers into the environment during site clearing, excavation, grading, underground utility work, transportation, and disposal activities. Specifically, the measures that would be taken to ensure that asbestos-containing soil does not become airborne and thus create a health hazard include:

- Track-out prevention, including using a gravel pad or metal screen and spraying down vehicles that have entered the construction zone to prevent asbestos-containing soil from being transported off site on construction vehicles.
- Sufficiently wetting soil known to contain asbestos or tailings, especially during earthmoving activities, and
- Suspending all mechanical soil disturbance activities during high winds.

Physical hazards may exist due to the abandoned mine excavations identified at the site, as well as other mine excavations that may be present on and adjacent to the site. These may present hazards such as entrapment, collapse, or hazardous confined space conditions, to workers during construction and remediation. Such areas may not be suitable to support structural improvements. The RAW, Appendix J-3A, specifies methods to close the excavations and address the possibilities of physical hazards. Temporary measures are appropriate to reduce the existing physical hazards, but final physical closure of the excavations would be performed in accordance with recommendations from a qualified geotechnical engineer and with the approval of the local building department (Appendix J-3A).

With implementation of the RAW as required by Mitigation Measure 15a, oversight by the appropriate federal, state, and local agencies, including the DTSC which approved the PEA and the RAW (Appendix J-3B), and compliance with applicable regulations regarding hazardous materials, there would be limited potential for a reasonably foreseeable upset or accident during remediation, construction, or operation. Therefore, it is not anticipated that a significant hazard to the public or the environment would occur. This impact would be **less than significant**.

Alternative B

Alternative B would occur on the same project site, involve a similar area of disturbance, and would be subject to all the same federal, state, and local regulations and oversight as Alternative A. Primary oversight during remediation activities would come from DTSC. With implementation of the RAW as required by Mitigation Measure 15a there would be limited potential for a reasonably foreseeable upset or accident during remediation, construction, or operation, and Alternative B would it is not anticipated that a significant hazard to the public or the environment would occur. Therefore, Alternative B will have a **less-than-significant** impact.

Impact 15-3: Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within 0.25 miles of an existing or proposed school?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

All existing nearby schools are more than 0.25 miles from the project site. William & Marian Ghidotti High School is approximately 0.5 miles northwest of the project site, separated from the project site by Highway 49. Nevada Union High School and Nevada Joint Union High School District (to the northwest), and Grass Valley Charter School (to the southwest) are all located approximately 1 mile from the project site. Both Alternative A and B would not include any operations that would emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 miles of an existing or proposed school. There would be no impact.

Impact 15-4: Would the project be located on a site which is included on a list of hazardous materials sites, and as a result, would create a significant hazard to the public or environment?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 15a	Mitigation Measure 15a
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The project site is identified as an active voluntary cleanup site on the EnviroStor website (DTSC 2018) under the site name Spring Hill Mine. Therefore development of the site has a potential to create a hazard to the public or the environment, and this impact is **potentially significant.** As documented in Section 15.1, the project site is not designated as a hazardous materials site on any other Cortese List databases, and is not included on any state or federal list of potentially hazardous materials. DTSC adopted a CEQA Notice of Exemption for implementation of the RAW (Appendix J-3B). Completion of the remediation activities described in the RAW, as required by Mitigation Measure 15a and as previously summarized in Impact 15-1, would reduce the potential for development of the project site to result in hazards to the public and environment. Implementation of the RAW is a component of the proposed project under both Alternative A and Alternative B, and the RAW has already been approved by DTSC as sufficient to ensure that the hazardous materials existing within the project site would be appropriately removed or contained within the site to allow for unrestricted land use. Thus with implementation of the RAW as required

by Mitigation Measure 15a, there would be no potential for the public that may reside within or visit the project site to be exposed to hazardous materials and this impact would be reduced to a **less-than-significant** level for both Alternative A and Alternative B.

Impact 15-5: Would the project be located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, and as a result, would result in a safety hazard for people residing or working in the project area?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The only public airport near the project site is the Nevada County Airport, which is located 1.45 miles from project site. The project site is within the 1.5-mile influence of the NCALUC. The site falls under Zone D, Traffic Pattern Zone and Urban Overlay Zone, which may require NCALUC review for proposals for new development (including buildings, antennas, and other structures) having a height of more than 100 feet within Compatibility Zone D (Mead & Hunt 2011). Land use development that may create attractions for birds is also prohibited.

The maximum proposed height of buildings under Alternative A and Alternative B is 40 feet. Neither alternative would include any features that would attract birds, such as ponds, pools, or wetlands. There may be some trash left on sidewalks or in the parking lot from patrons of the proposed restaurant uses within the site that could attract birds, however these would be typical of urban uses and would not be expected to attract large flocks of birds flying at elevations that could interfere with aircraft. Therefore, both Alternative A and Alternative B would result in no impact related to safety hazards for people residing or working in the project area.

Impact 15-6: Would the project be located within the vicinity of a private airstrip, and would result in a safety hazard for people residing or working in the project area?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The nearest private airstrip to the project site is a helipad at the Sierra Nevada Memorial Hospital approximately 0.2 miles from the project site, separated from the project site by SR 20/49. The

helipad is for use by emergency helicopters only. The proposed project would not introduce land uses that are substantially different from those that currently exist near the project site and the Sierra Nevada Memorial Hospital helipad. Grass Valley Service Center Heliport, owned by Pacific Gas & Electric, is located approximately 2 miles from the project site, and would not be affected by the proposed project.

Construction and development of either Alternative A or Alternative B would have a less-than-significant impact related to interfering with private airstrips and creating a safety hazard for people residing or working in the project area.

Impact 15-7: Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than significant	Less than significant
Mitigation measures:	None required	None required
Significance after mitigation:	Less than significant	Less than significant

Alternative A

As described in Section 15.1, the City of Grass Valley 2020 General Plan identifies SRs 20 and 49 as the city's primary evacuation routes and Brunswick Road, and Idaho-Maryland Road as secondary evacuation routes (City of Grass Valley 1999a). Under Alternative A, the proposed project would not require any modifications to these roadways other than installation of traffic signals at several locations as discussed in Chapter 8, Transportation.

Construction of the proposed project could result in increased construction-related vehicles on roads nearby and adjacent to the proposed site. This activity would be limited to the construction period and would affect only the streets and intersections adjacent to the project site, and as such, would be unlikely to interfere with emergency response vehicles (e.g., fire, police, or ambulance). Because of the project's proximity to the identified emergency evacuation routes, construction vehicles may use roads that are used as emergency access or evacuation. As part of preparation of the RAW, Holdrege & Kull contacted the City of Grass Valley and Caltrans District 3; neither agency found that the traffic associated with implementation of the RAW would interfere with routine roadway operations or emergency response (Appendix J-3A).

Operation of the various businesses or residences developed as part of the proposed project would introduce additional residents and attract other drivers to the project area, thereby increasing traffic on nearby roads, some of which serve as emergency evacuation routes. This has the potential to interfere with the response times of emergency vehicles. However, the project would adhere to appropriate site design for safety and evacuation, such as Safety Implementation Action 4-SI and Circulation Policy 24-CP in the City of Grass Valley 2020

General Plan. For information regarding project-related traffic impacts to nearby roads, such as SR 20/49, see Chapter 8, Transportation. For information regarding emergency response times, see Chapter 14, Public Services and Utilities.

Construction and operation of Alternative A would increase background traffic levels in the project region but would not introduce substantial roadway congestion or modify the City's identified evacuation routes. Therefore Alternative A would have a **less-than-significant** impact associated with impairing implementation of or physically interfering with the adopted emergency evacuation plan.

Alternative B

Alternative B would occur on the same project site and would maintain the same primary and secondary evacuation routes; the alternative would not include construction associated with the identified emergency evacuation roadways. Like Alternative A, Alternative B has the potential to affect emergency vehicle response times, although Alternative B would generate less peak hour traffic than Alternative A. However, both alternatives would adhere to appropriate site design for safety and evacuation, such as Safety Implementation Action 4-SI and Circulation Policy 24-CP in the City of Grass Valley 2020 General Plan. Therefore, Alternative B would have a less-than-significant impact.

Impact 15-8: Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

The project site is located in an urban area, in a non-Very High Fire Hazard severity zone and local responsibility area (CAL FIRE 2008). Additionally, the proposed project consists of infill development in an area that already includes similar commercial and residential land uses served by local fire protection services. Several major roads surround the project site, such as SR 20/49, Idaho-Maryland Road, and Brunswick Road. These roads separate the developed project vicinity from the less-developed area to the east of the city. Therefore, both Alternative A and Alternative B would have **no impact** associated with exposing people or structures to a significant risk of loss, injury, or death involving wildland fires.

Impact 15-9: Would the project create or expose residents to potential health hazards?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Potentially significant	Potentially significant
Mitigation measures:	Mitigation Measure 15a	Mitigation Measure 15a
Significance after mitigation:	Less than significant	Less than significant

Alternative A and Alternative B

The project site contains naturally occurring asbestos and was once used as a mining site. Earth-moving activities within the project site could release these materials into the air, which could expose people within the project site and in the project vicinity to health hazards. In addition, if the hazardous materials that are present on the site as a result of the past mining activities are not removed or capped, development of commercial, office, and residential uses within the site could expose people within the site to health hazards from exposure to these hazardous materials. Thus the project, under either Alternative A or Alternative B, would have a **potentially significant** impact associated with potential exposure of people to health hazards. As discussed in Impact 15-1 and 15-2, both alternatives would require the implementation of the RAW to remediate the known potential health hazards on the site, including preventing the release of naturally occurring asbestos through implementation of the Asbestos Dust Mitigation Plan included in the RAW. Mitigation Measure 15a specifies that implementation of the RAW must be completed to the satisfaction of the California Department of Toxic Substances Control prior to proceeding with development of the proposed project.

The proposed land uses under both Alternative A and Alternative B would be expected to use common hazardous materials, such as cleaning and property maintenance products, which are not expected to create substantial health hazards.

With implementation of the RAW as required by Mitigation Measure 15a, and compliance with all applicable federal, state, and local laws and regulations throughout construction and operation of the project, both Alternative A and Alternative B would have a **less-than-significant** impact due to the low likelihood of a hazardous impact related to public health.

Impact 15-10: Would the project contribute to a significant impact regarding hazards or hazardous materials in the cumulative condition?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	No impact	No impact
Mitigation measures:	None required	None required
Significance after mitigation:	No impact	No impact

Alternative A and Alternative B

The geographic scope for consideration of cumulative impacts related to hazards and hazardous materials is the Grass Valley area. Alternative A and Alternative B would occur on the same project site with a similar area of disturbance and under the same cumulative scenario. Potential hazardous materials impacts related to site-specific conditions is generally not regional in nature impacts from one project typically do not combine with impacts from other projects in the area to create a cumulative impact. Thus, there would be no cumulative impact to which either alternative could contribute. Compliance with all applicable federal, state, and local regulations related to hazards and hazardous materials on a project-by-project basis would be required for all projects within the Grass Valley area and would ensure that site-specific impacts are appropriately addressed and cannot combine with site-specific impacts from other project sites.

For any projects in the Grass Valley area that would entail development of a previously developed site, the potential exists for release of hazardous substances during demolition and construction at those sites. For individuals not involved in construction activities, the greatest potential source of exposure to contaminants would be airborne emissions, primarily through dust either from soil remediation activities or from soil-disturbing activities during construction where previously unidentified contamination may exist. (Other potential pathways, such as direct contact with contaminated soils or groundwater, would not pose as great a risk to the public because such exposure scenarios are site specific and would typically be confined to the construction zones.)

Use, Storage, and Transport of Hazardous Materials during Construction

During the construction process, hazardous materials spills or accidents would typically be site-specific and would not combine with other uses to create a cumulative effect. Associated health and safety risks generally would be limited to those individuals using the materials or to persons in the immediate vicinity of the materials. Therefore there is **no impact** in the cumulative scenario associated with use, storage, and transport of hazardous materials during construction.

Use, Storage, and Transport of Hazardous Materials during Operation

The implementation of either Alternative would not introduce any new industrial land uses to the project site. During project operation, the use, storage, and transport of hazardous materials would

be limited to materials such as paints, solvents, cleaning supplies, pool chemicals, pesticides, herbicides, and gas products. Both Alternatives, in conjunction with other existing, planned, and probable future projects within the City of Grass Valley, would result in an increase in the amount of hazardous materials used and stored within and transported through the City. New projects would involve similar requirements for use, storage, and transport of hazardous materials as the proposed project. The quantities of hazardous materials that would be present during occupancy of these residential and retail land uses under Alternative A and the residential, office, retail uses under Alternative B are expected to be minimal and would consist of typical cleaning and property maintenance products. Compliance with applicable hazardous materials management laws and regulations adopted at the federal, state, and local level would ensure cumulative impacts related to hazardous materials use remain less than significant; both Alternative A and Alternative B would have **no impact** associated with contributing to a significant cumulative impact.

15.4 MITIGATION MEASURES

Mitigation Measure 15a: The project applicant shall implement the Removal Action Workplan (RAW) as approved by the California Department of Toxic Substances Control prior to construction of the proposed project. This shall include excavation and off-site disposal for the waste in Area of Concern (AOC) 1, and on-site consolidation and burial of mine waste rock and tailings beneath the proposed commercial development in AOC 2. In AOC 1, vegetation removal must be conducted in the areas to be excavated using hand-held mechanical equipment to minimize disturbance of soil prior to excavation. In AOC 2, prior to implementation of the RAW, DTSC must review and approve site development plans showing the final development layout and waste placement details. In the event that any ground-disturbing activities would occur on the project site prior to the site remediation activities, DTSC must review the proposed ground-disturbing activities and the project proponent/construction contractor would mark remediation areas on the site so the areas may be avoided. After excavation and on-site placement, soil samples must be tested and submitted to DTSC to verify that soil conditions meet the remedial goals defined in the RAW. Throughout all activities conducted in implementation of the RAW, contractors must adhere to each component of the RAW, including, but not limited to the Site Safety Plan and the Asbestos Dust Mitigation Plan.

15.5 REFERENCES CITED

Cal EPA (California Environmental Protection Agency). 2016a. *Sites Identified With Waste Constituents Above Hazardous Waste Levels Outside The Waste Management Unit.* Available at: http://www.calepa.ca.gov/sitecleanup/corteselist/CurrentList.pdf. Accessed: August 8, 2016.

Cal EPA (California Environmental Protection Agency). 2016b. *CDOCAO List*. Available at: http://www.calepa.ca.gov/sitecleanup/corteselist/CDOCAOList.xlsx. Accessed: August 8, 2016.

CAL FIRE (California Department of Forestry and Fire Protection). 2008. *Local Responsibility Area.* Available at: http://www.fire.ca.gov/fire_prevention/fhsz_maps_nevada. Accessed: August 4, 2016.

California Department of Resources Recycling and Recovery. 2016. *Household Waste County Summary Data*. Available at: http://www.calrecycle.ca.gov/HomeHazWaste/Reporting/Form303/CountySumm.htm. Accessed: August 17, 2016.

California State Water Resources Control Board. 2016. *Geotracker*. Available at: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=dorsey+drive%252#. Accessed: August 18, 2016.

City of Grass Valley. 1999a. *City of Grass Valley 2020 General Plan*. Adopted November 1999.

City of Grass Valley. 1999b. *City of Grass Valley General Plan Update Environmental Impact Report*. Prepared for the City of Grass Valley by Quad Knopf. August 1999.

DTSC (California Department of Toxic Substances Control). 2007. *Hazardous Waste And Substances Site List.* Available at: http://www.envirostor.dtsc.ca.gov/public/search.asp?PAGE=6&CMD=search&ocieerp=False&business_name=&main_street_number=&main_street_name=&city=&zip=&county=&branch=&status=ACT%2CBKLG%2CCOM&site_type=CSITES%2COPEN%2CFUDS%2CCLOSE&cleanup_type=&npl=&funding=&reporttype=CORTESE&reporttitle=HAZARDOUS+WASTE+AND+SUBSTANCES+SITE+LIST&federal_superfund=&state_response=&voluntary_cleanup=&school_cleanup=&operating=&post_closure=&non_operating=&corrective_action=&tiered_permit=&evaluation=&spec_prog=&national_priority_list=&senate=&congress=&assembly=&critical_pol=&business_type=&case_type=&display_results=&pub=&hwmp=False&permitted=&pc_permitted=&inspections=&complaints=&ORDERBY=county&next=Next+50. Accessed: August 18, 2016.

DTSC (California Department of Toxic Substances Control). 2018. EnviroStor report for Spring Hill Mine (600000663). Available at: http://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60000663. Accessed: September 7, 2018.

Mead & Hunt. 2011. *Nevada County Airport Land Use Compatibility Plan*. Available at: http://www.nctc.ca.gov/Reports/Aviation-Reports/index.html. Accessed: August 4, 2016.

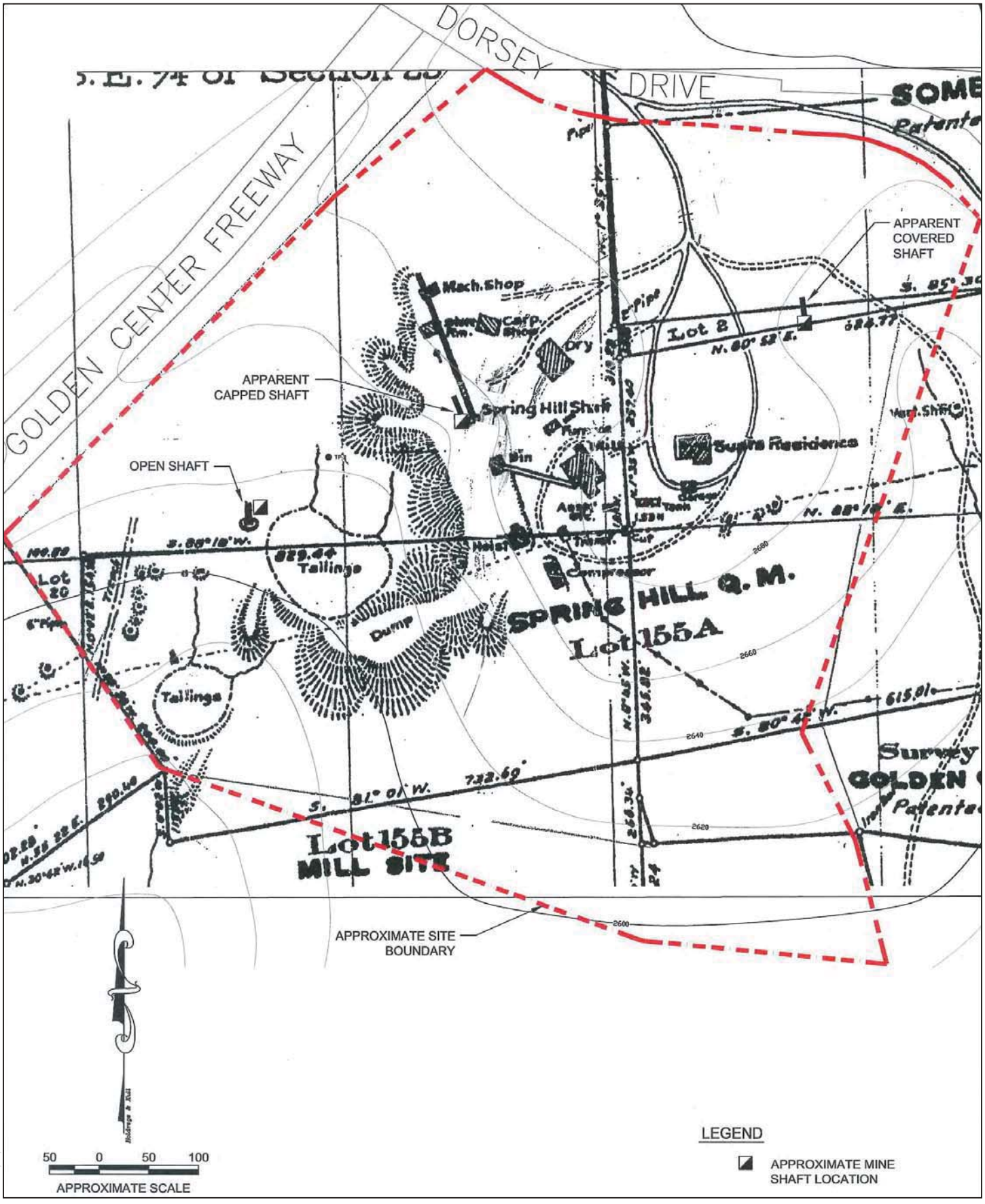
Nevada County. 2016. *Nevada County Public Works Recycling Facilities*. Available at: http://nevcounty.maps.arcgis.com/apps/webappviewer/index.html?id=d17cb4b387e24995be550c0dd89e073b. Accessed: August 17, 2016.

Quad Knopf. 1998. *Grass Valley General Plan Background Report*. November 1998.

U.S. Environmental Protection Agency. 2013a. *Envirofacts*. Available at: https://oaspub.epa.gov/enviro/enviroFACTS.quickstart?minx=-121.091480&miny=39.2032. Accessed: August 18, 2016.

U.S. Environmental Protection Agency. 2016a. *CERCLIS*. Available at: https://iaspub.epa.gov/enviro/efsystemquery.cerclis?fac_search=primary_name&fac_value=. Accessed: August 8, 2016.

U.S. Environmental Protection Agency. 2016b. *Toxic Resources Inventory*. Available at: http://www.zoomaru.net/alleventsdata.php?id=185005&display=&eportal=appac&sid=12&rtn=#.V7X7RP7dVD8. Accessed: August 8, 2016.



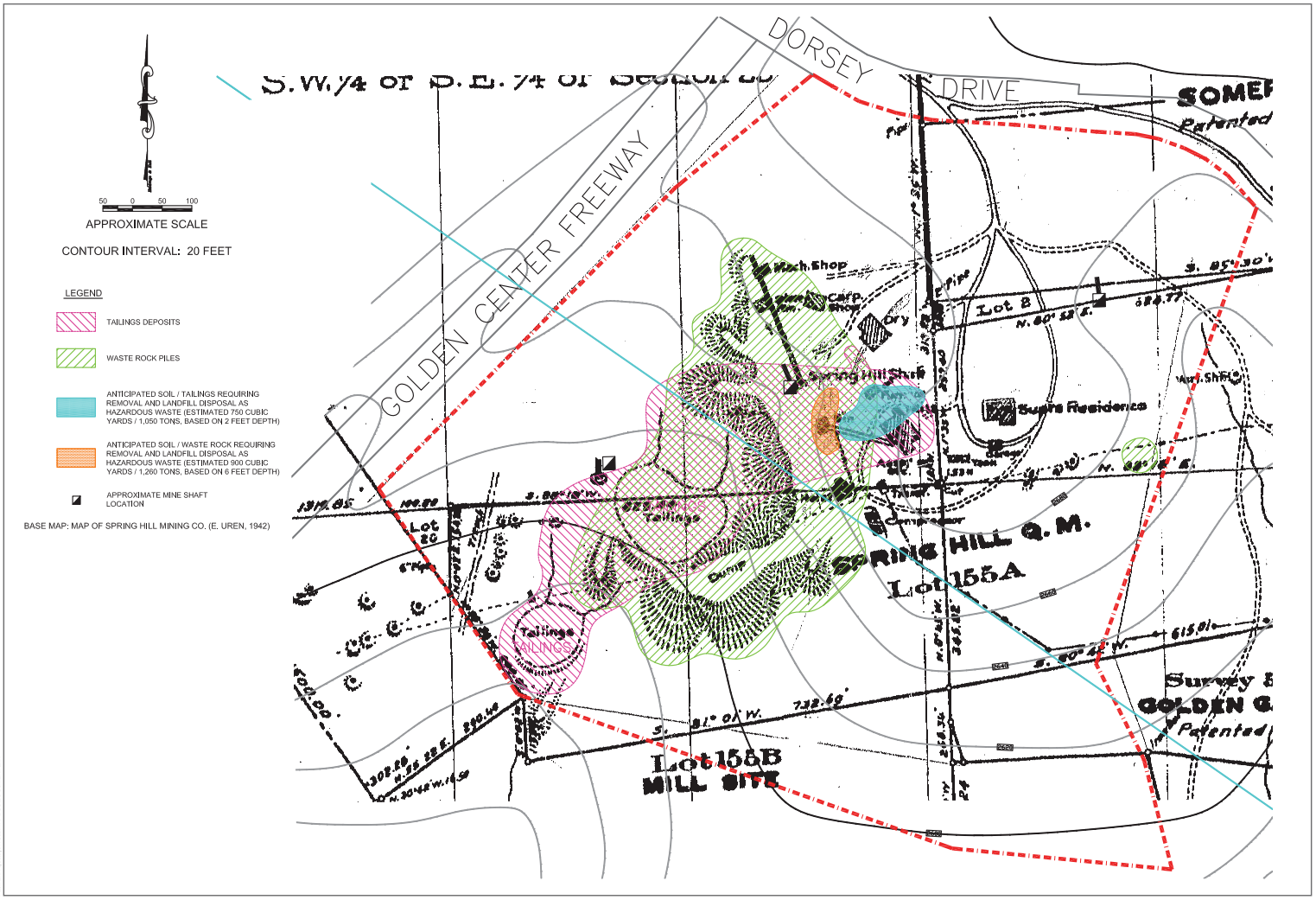
SOURCE: Holdredge & Kull 2007

FIGURE 15-1

Spring Hill Mine Site Plan

Dorsey Marketplace EIR

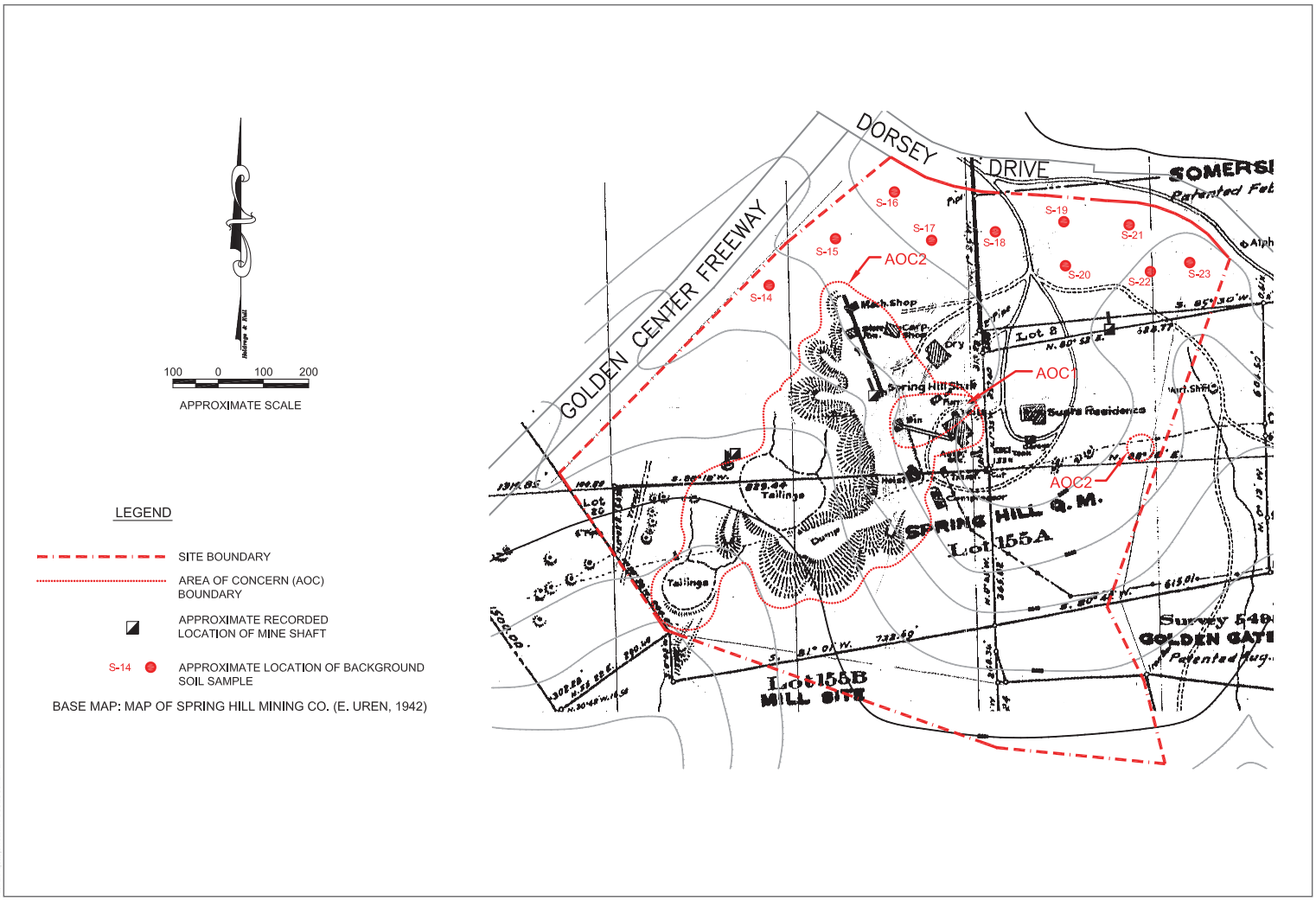
DUDEK



SOURCE: Holdredge & Kull 2008

FIGURE 15-2
Mine Waste Assessment Areas
Dorsey Marketplace EIR

DUDEK



SOURCE: Holdredge & Kull 2012

FIGURE 15-3
Areas of Concern
Dorsey Marketplace EIR

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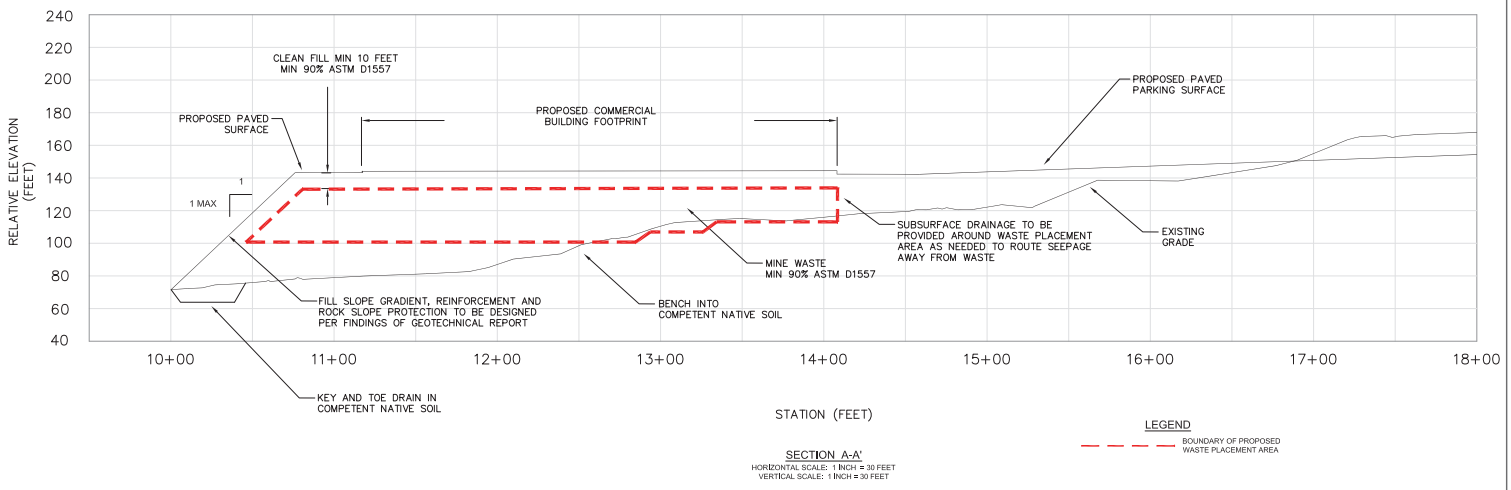

SOURCE: Holdredge & Kull 2012

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FIGURE 15-4
On-site Containment
Dorsey Marketplace EIR

CHAPTER 16
CEQA-MANDATED SECTIONS

This chapter includes the following considerations that are required to be discussed in an environmental impact report (EIR) in accordance with the California Environmental Quality Act (CEQA):

- Effects Not Found to Be Significant (Section 16.1)
- Significant and Unavoidable Environmental Impacts (Section 16.2)
- Significant and Irreversible Environmental Changes (Section 16.3)
- Growth Inducement (Section 16.4)
- Energy Consumption (Section 16.5)

Two versions of the proposed project are evaluated in this chapter. Alternative A would provide for up to 90 apartment units, approximately 178,960 square feet of commercial space, and a 3,200-square-foot clubhouse. Alternative B would provide 171 apartments, approximately 104,350 square feet of commercial space, approximately 8,500 square feet of office space, and a 3,200-square-foot clubhouse.

16.1 EFFECTS NOT FOUND TO BE SIGNIFICANT

This section discusses potential environmental impacts from the proposed Dorsey Marketplace (proposed project) that were found not to be significant based on the analysis in the Notice of Preparation (NOP). The NOP was released for public review on February 11, 2016. No Initial Study was prepared with the NOP, as the City assumed that a number of impacts would be significant or potentially significant even after implementation of mitigation. All potential effects are evaluated in this Draft EIR. Each resource chapter identifies where no impacts would occur and those impacts that were determined to be less than significant.

16.2 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Implementation of the project-specific mitigation measures identified in Chapters 3 through 15 would reduce most of the project's significant impacts to less than significant levels. Alternative A would result in the following significant and unavoidable impact (this impact would be less than significant under Alternative B):

- Impact 8-9: Would the project contribute to a cumulative increase in traffic that conflicts with adopted policies and plans related to intersection and roadway segment function, including consideration of LOS and ADT?

In addition, Alternative A and Alternative B would result in the following significant and unavoidable impact:

- Impact 11-1: Would the project impede the City or state efforts to meet AB 32 standards for the reduction of GHG emissions?

16.3 SIGNIFICANT AND IRREVERSIBLE ENVIRONMENTAL CHANGES

The CEQA Guidelines (14 CCR 15000 et seq.) mandate that an EIR address any significant irreversible environmental changes that would be involved in the proposed action should it be implemented (14 CCR 15126(c)). An impact would fall into this category if:

- The project would involve a large commitment of nonrenewable resources.
- The primary and secondary impacts of the project would generally commit future generations of people to similar uses.
- The project involves uses in which irreversible damage could result from any potential environmental incidents associated with the project.
- The proposed consumption of resources is not justified (e.g., the project results in wasteful use of energy).

Determining whether the proposed project may result in significant irreversible changes requires a determination of whether key resources would be degraded or destroyed in such a way that there would be little possibility of restoring them. The project site is located on an infill brownfield site within an urbanized area of the City of Grass Valley (City). The site supported mining activities in the past but is no longer a viable site for mining. Natural resources in the form of building materials would be used in the construction of the proposed project; these resources have varying degrees of renewability. However, their use would be characteristic of typical development projects and use of these resources for construction of the proposed project is not expected to negatively impact the availability of these resources for other uses. Due to the scale of the proposed project, the use of construction materials and nonrenewable resources would not be unusual or extraordinary, and as a result there would be no significant irreversible environmental effects related to resource consumption during construction.

The project would not result in impacts that commit future generations to similar uses. Under Alternative A, the project would construct 90 residential units, 178,960 square feet of commercial uses, and associated infrastructure. Under Alternative B, the project would construct 171 residential units, 104,350 square feet of commercial uses, 8,500 square feet of office uses, and associated infrastructure. The project would be uniquely suited to the proposed residential, office,

and commercial uses. However, should the buildings become vacant in the future it would be feasible for interior renovations to be made to adjust the buildings to a different user or to demolish buildings and develop the site for a different land use.

The proposed project would not introduce highly hazardous land uses or activities to the project site such that there would be a potential for irreversible damage from incidents such as a release of hazardous materials, explosion, or other potentially catastrophic event. The project includes implementation of the approved Removal Action Workplan for the site, which would ensure that the hazardous materials currently present at the site are removed or capped such that occupation of the site does not expose people to adverse effects associated with hazardous materials.

On a permanent, long-term basis, the proposed project would consume energy. However, as discussed further in Section 16.5, the project's energy consumption does not constitute a significant and irreversible environmental change.

16.4 GROWTH INDUCEMENT

CEQA requires a discussion of ways in which the proposed project could induce growth in the project area. The CEQA Guidelines identify a project as growth inducing if it fosters economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment (14 CCR 15126.2(d)). New employees from commercial or industrial development and new population from residential development represent direct forms of growth. These direct forms of growth have a secondary effect of expanding the size of local markets and inducing additional economic activity in the area. A project could indirectly induce growth by reducing or removing barriers to growth or by creating a condition that attracts additional population or new economic activity.

The project's potential to induce growth in the project area is discussed in Chapter 4, Population, Employment, and Housing. In that analysis, the project was found to have a less-than-significant potential to induce growth in the region.

16.5 ENERGY CONSUMPTION

CEQA provides that an environmental impact report shall include a detailed statement identifying all significant effects on the environment of a proposed project, and mitigation measures proposed to minimize significant effects on the environment, including, but not limited to, "measures to reduce the wasteful, inefficient, and unnecessary consumption of energy" (California Public Resources Code, Section 21100(b)(1),(3)).

Appendix F of the CEQA Guidelines, Energy Conservation, includes recommendations for information that should be included in an EIR to "assure that energy implications are considered

in project decisions" (14 CCR 15000 et seq.). Appendix F directs that EIRs should include "discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3))" (14 CCR 15000 et seq.).

Appendix F lists potential energy impacts that may be relevant to the Energy Conservation analysis in an EIR. Where a listed item is applicable or relevant to a proposed project, the EIR should consider it. This analysis applied the following relevant listed items from Appendix F, subdivision (II)(F)(C), to the discussion of impacts: energy requirements and energy use efficiencies of the project by fuel type and amount for each stage of the project, the effects of the project on local and regional energy supplies and on requirements for additional capacity, compliance with existing energy standards, the effects of the project on energy resources, and the project's projected transportation energy use requirements and overall use of efficient transportation alternatives.

Additionally, Appendix F provides a list of potential energy impacts and conservation measures that may be relevant to the discussion of the Project Description. Accordingly, Chapter 2, Project Description, of this EIR includes discussions of utilities and project construction, which address the following relevant items from Appendix F, subdivision (II)(A): energy consuming equipment and processes to be used during the various phases of the project and identification of energy supplies that would serve the project. These issues are also discussed in Chapter 10, Air Quality, and Chapter 14, Public Services and Utilities, of this EIR.

In accordance with Appendix F, this EIR includes relevant information and analyses that address the energy implications of the project. This section represents a summary of the project's anticipated energy needs, impacts, and conservation measures. Information found herein, as well as other aspects of the project's energy implications, are discussed in greater detail elsewhere in this EIR, including in Chapter 8, Transportation; Chapter 10; Chapter 11, Climate Change; and Chapter 14.

16.5.1 Energy Setting

Local Service and Use

The project site is an infill development site and is located in an area where all public services are currently available. The introduction of the proposed project to the project area would increase local demands for electricity and natural gas, which are supplied by PG&E. As demonstrated in the following discussion, the energy demands of the proposed project would be consistent with the anticipated level of economic development and growth in the region, and PG&E would have sufficient available capacity to serve the proposed project. For the purposes of this analysis, energy consumption is measured in kWh or MMBtu. One million British thermal units is equivalent to 293.297 kWh.

Electricity

Pacific Gas & Electric (PG&E) provides electric services to 5.4 million customers throughout a 70,000-square-mile service area in northern and central California (PG&E 2016). The residents of Grass Valley receive their electrical service from PG&E. According to the California Energy Commission (CEC), PG&E consumed approximately 86.5 billion kilowatt-hours (kWh) of electricity in total in 2013 (CEC 2015). PG&E's commercial building electrical consumption was approximately 30.9 billion kWh, and the residential electrical consumption was approximately 31.4 billion kWh.

PG&E receives electric power from a variety of sources. According to PG&E's 2013 Power Content Label, 22% of PG&E's power came from eligible renewables, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources. Large hydroelectric made up 10% of PG&E's power mix (CEC n.d.).

The Overview webpage at the California Energy Almanac, the online database of the CEC, states that statewide electricity generation exceeds 200,000 gigawatt-hours each year, with natural gas as the main source for electricity generation, responsible for 60.5% of the total in-state electric generation system power. In addition, the Renewables Portfolio Standard established a goal for California to increase the amount of electricity generated from renewable energy resources to 20% by 2010 and to 33% by 2020. Currently, California's in-state renewable generation is composed of biomass, geothermal, small hydro, wind, and solar generation sites that make up approximately 19.6% of the total in-state generational output (CEC 2014).

Based on recent energy supply and demand projections in California, statewide annual peak demand is projected to grow an average of 890 megawatts (MW) per year for the next decade, or 1.4% annually, while per capita consumption is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2007). In Nevada County, the CEC reported an annual electrical consumption of approximately 656 million kWh in total, with 234 million kWh for non-residential use and 422 million kWh for residential use in 2013. Energy consumption went down in Nevada County for 2014; total consumption was 633 million kWh, of which 227 million was non-residential and 406 million was residential use (CEC, 2016).

Natural Gas

PG&E also provides natural gas service to the Grass Valley area. The system receives gas from PG&E's regional transmission system. (PG&E 2016). The CEC reports that PG&E consumed a total of approximately 480 million British thermal units (MMBtu) of natural gas in 2013, with 87.3 million MMBtu for commercial buildings and 200 million MMBtu for residential use. In Nevada County, total natural gas consumption was approximately 18.79MMBtu in 2016, with 5.89 MMBtu for non-residential use and 12.90 MBtu for residential use.

16.5.2 Regulatory Framework

Federal

Although there are federal regulations addressing energy efficiency in the built environment, fuel efficiency for motor vehicles, energy sources used by the United States, and national conservation goals, none of these regulations and policies applies directly to the proposed project and this analysis of the project's energy consumption.

State

California Environmental Quality Act

Appendix F of the CEQA Guidelines, as discussed previously, calls for discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Global Warming Solutions Act

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006) enacted Sections 38500–38599 of the California Health and Safety Code. AB 32 establishes regulatory, reporting, and market procedures to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires reduction of statewide GHG emissions to 1990 levels by 2020. The procedures for reducing GHG emissions will relate to the generation and efficient use of energy. The California Air Resources Board adopted the Climate Change Scoping Plan in 2008, which is the state's plan to achieve the statewide GHG reductions required by AB 32. The most significant proposed GHG reductions are recommended through improving emission standards for light-duty vehicles, implementation of the Low-Carbon Fuel Standard, energy efficiency measures in buildings and appliances, and a renewable portfolio standard for electricity production.

California Energy Commission

The CEC's Integrated Energy Policy Report set forth policies that would enable the state to meet its energy needs under the carbon constraints established in the 2006 Global Warming Solutions Act. The Integrated Energy Policy Report also provides a set of recommended actions to achieve these policies.

Title 24, California Code of Regulations, Energy Efficiency Standards

Title 24 sets the energy efficiency standards for residential and nonresidential buildings. The CEC has adopted changes to the Building Energy Efficiency Standards to accomplish the following:

- Respond to California's energy crisis to reduce energy bills, increase energy delivery system reliability, and contribute to an improved economic condition for the state
- Respond to the AB 970 (Statutes of 2000) urgency legislation to adopt and implement updated and cost-effective building energy efficiency standards
- Respond to various statutes of 2001, which included urgency legislation to adopt energy efficiency building standards for outdoor lighting
- Emphasize energy efficiency measures that save energy at peak periods and seasons, improve the quality of installation of energy efficiency measures, incorporate recent publicly funded building science research, and collaborate with California utilities to incorporate results of appropriate market incentives programs for specific technologies

Additionally, the 2013 California Green Building Standards Code, or CALGreen Code (24 CCR 11), which took effect on January 1, 2014, requires buildings to reduce energy and water consumption and establishes specific performance standards that appliances and fixtures must meet. The code contains mandatory and voluntary measures for site planning and design, energy efficiency, water efficiency and conservation, materials conservation, resource use efficiency, and environmental quality.

State of California Energy Plan

The State Energy Plan, drafted by the CEC, identifies emerging trends in energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The plan recommends reductions in congestion and increased efficiency in the use of fuel supplies. The plan also encourages urban designs that reduce vehicle miles traveled and promote pedestrian and bicycle access.

Clean Energy and Pollution Reduction Act

Under Senate Bill 350, signed into law in October2015, the Clean Energy and Pollution Reduction Act of 2015 updates the Renewables Portfolio Standard and applies to all electricity retailers in California. These entities must meet the Renewables Portfolio Standard goals of 33% of retail sales from eligible renewables by the end of 2020, 40% by the end of 2024, 45% by 2027 and 50% by 2030.

California's Energy Storage Law

California's Energy Storage Law (Assembly Bill (AB) 2514) (Chapter 469, Statutes of 2010) requires the governing board of each publicly-owned utility to "determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems (Ca. Pub. Util. Code Section 2836(b)(1)). AB 2514 also requires that "all procurement of energy storage systems" by a publicly owned utility "shall be cost-effective" (California Public Utilities Code Section 2836.6).

Local Regulations

Neither the City of Grass Valley nor the NSAQMD have adopted any policies or regulations that specifically define energy consumption or conservation standards and goals. The City is currently working to prepare an energy action plan.

16.5.3 Impacts

Thresholds of Significance

Appendix F of the CEQA Guidelines does not provide a specific numeric threshold to evaluate the potential significance of the energy effects of a proposed project. Rather, the emphasis is on reducing "the wasteful, inefficient, and unnecessary consumption of energy" (Public Resources Code Section 21100(b)(1),(3)). In order to use this standard as a threshold of significance, the following criteria are considered in this analysis:

Project-related energy usage would be considered "wasteful, inefficient, and unnecessary" if:

- The project were to violate state and federal energy standards, including Title 24 of the California Code of Regulations.
- The project consumed a substantially greater amount of energy, in either the construction or operational phase, than a similar project.

The project objectives could be achieved through a feasible alternative that would substantially reduce the amount of energy required over the life of the project or through a feasible alternative that would include use of alternative fuels or energy systems.

Project Impacts

Impact 16-1: Would the project cause a temporary increase in wasteful, inefficient, and unnecessary energy consumption due to construction?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

As discussed in Chapter 2, both Alternative A and Alternative B would require very similar construction that would last for an approximately 60-month-long construction period. The construction phases anticipated to occur include demolition of the existing building foundations and other mining remnants on site, site clearing and hazard remediation, grading, and trenching for utilities followed by building construction, paving, architectural coating, and installation of landscaping.

Heavy-duty construction equipment associated with demolition and construction activities would rely on diesel fuel, as would haul trucks involved in removing the materials from demolition of the existing on-site buildings.

Heavy-duty construction equipment of various types would be used during each phase of construction. The California Emissions Estimator Model (CalEEMod) analysis discussed in Chapter 10, and included in Appendix I to this EIR, includes the proposed construction schedule and assumed equipment usage. Based on that analysis, over all phases of construction, diesel-fueled, on-site construction equipment would run for an estimated 8,700 hours, as summarized in Table 16-1.

Table 16-1
Construction Equipment

Equipment Description	Hours
345 CAT Excavator	480
320 CAT Excavator	480
314 CAT Excavator	360
308 CAT Excavator	360
120 CAT Motor Grader	200
140 CAT Motor Grader	200
633 CAT Scrapers	720
D10 CAT Dozers	600
D8 CAT Dozers	600
750 John Deere Dozer	420

Table 16-1
Construction Equipment

Equipment Description	Hours
815 CAT Compactors	600
563 CAT Compactor -	600
433 CAT Compactor	400
950 CAT Loader	400
938 CAT Loader	400
924 CAT Loader	400
430 CAT Backhoes	400
210 John Deere Skip Loaders	400
Kenworth Water Trucks 2000-4000 gal	680
345 CAT Excavator	480

Source: Appendix I.

Assuming an average diesel fuel efficiency of 1.74 gallons per hour, on-site construction equipment would consume approximately 15,138 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to hauling would be approximately 616,116.6 kWh (Appendix I).

As reported in the Removal Action Workplan, it is expected that approximately 150 total truck trips (which is 300 one-way trips) would be required to haul the debris from grading (Appendix J-3A). Over the grading period, this would generate approximately 6,000 vehicle miles traveled (VMT). Assuming an average diesel fuel efficiency of 6 miles per gallon for medium-heavy duty and heavy-heavy duty haul trucks (EIA 2013), hauling would consume approximately 36,000 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to hauling would be 1,465,200 kWh.

During the remaining construction phases, it is expected that vendors will travel to and from the site in diesel-fueled vehicles to deliver materials. CalEEMod estimates that 102 total trips will be taken by vendors, which would generate approximately 6.6 VMT. Assuming an average diesel fuel efficiency of 6 miles per gallon (EIA 2013), vendor trips would consume approximately 673.2 gallons of diesel. With a conversion factor of 40.7 kWh per gallon of diesel, the energy consumption due to vendor trips to and from the site would be approximately 27,388.24 kWh.

The number of construction workers required would vary based on the construction phase and activity. The fuel construction workers would require for transportation would depend on the total number of worker trips estimated for the duration of construction activity. CalEEMod estimates that construction will generate 416 worker trips, which would generate approximately 16.8 VMT. Assuming an average fuel efficiency of 17.5 miles per gallon (DOT 2014), demolition and construction activities on site would use approximately 6,988.8 gallons of gasoline for construction

worker trips. With a conversion factor of 33.7 kWh per gallon of gasoline, the annual energy consumption due to gasoline-fueled transportation by construction worker trips to and from the project site would be 284,444.16 kWh.

According to a study by the U.S. Energy Information Administration, California's transportation sector consumed a total of 14.1 billion gallons of gasoline and 3 billion gallons of diesel (EIA 2013). Based on the fuel usage amounts presented in the previous text, demolition of the existing buildings on site and construction would use approximately 6,989 gallons of gasoline and 51,801 gallons of diesel. This would comprise less than 0.00005% of gasoline fuel consumption and 0.0017% of diesel fuel consumption in the State.

Temporary electric power for as-necessary lighting and electronic equipment such as computers inside temporary construction trailers would be provided by PG&E. The electricity used for such activities would not result in a net increase in on-site electricity use over the existing buildings' electricity usage, as the daily demand for lighting and electronics at the buildings currently on site would be higher than that for construction.

Project construction would also involve use of non-renewable or slowly renewable resources used to create building materials including certain types of lumber and other forest products; aggregate materials used in concrete and asphalt such as sand, gravel, and stone; metals such as steel, copper, and lead; petrochemical construction materials such as plastics; and water.

Construction would comply with all relevant energy-related regulations by conserving energy and natural resources to the extent feasible. The energy demands due to diesel and gasoline use during construction would be small relative to statewide and local demands for fuel use, as discussed previously. The energy consumption during project construction would be commensurate with typical construction projects and would not use energy wastefully or inefficiently. Therefore, the temporary short-term consumption energy consumption impacts due to construction are considered **less than significant**.

Impact 16-2: Would the project cause a permanent increase in wasteful, inefficient, and unnecessary energy consumption or fail to comply with state and federal energy standards?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A

The total annual energy demands of Alternative A are described and quantified in the following text.

Daily Operations

As discussed in Chapter 2, Alternative A proposes to construct approximately 178,960 square feet of commercial building space, 90 multi-family dwelling units and a 3,200-square foot clubhouse. The project would also construct a new circulation system throughout the proposed project and would install landscaping and recreational facilities.

As described in Chapter 4, Alternative A is expected to generate between 260 and 280 jobs and the addition of 90 dwelling units is expected to result in approximately 184 new residents.

Daily operation of Alternative A would generate demand for electricity, natural gas, and water supply, as well as generating wastewater requiring off-site conveyance, treatment, and disposal.

PG&E uses a variety of renewable energy sources to generate a portion of its electricity, and these sources would contribute to the project's electricity supply. Due to the nature of the project site, which is located in a developed, landlocked area, it would be infeasible to use on-site renewable energy sources such as hydropower, biodiesel, or ocean-dependent technologies. However, consistent with the California Green Building Code, solar panels would be provided in association with the proposed residential land use.

The CalEEMod program estimates energy usage associated with building systems that are regulated under Title 24 (such as the heating and cooling system), lighting, and use of office equipment, appliances, plug-ins, and other sources not covered by Title 24. The CalEEMod program estimates that the commercial project components would consume 1.30789e+006 British thermal units (kBtu) of natural gas and 2,582,170 kWh of electricity (including for parking lot lighting) annually (Appendix I). The CalEEMod modeling results also indicate that the residential component of the project would consume 971,962 kBtu of natural gas annually and the residences would consume 428,315 kWh. Thus, Alternative A would consume 2,279,852 kBtu of natural gas annually and 3,010,485 kWh annually (Appendix I).

The CalEEMod modeling estimates that Alternative A would generate approximately 8,338.8 daily vehicle trips during the week. It is noted that the traffic impacts analysis demonstrates that a substantial portion of these daily trips would remain on site or would be considered pass-by trips. However, for the purposes of this energy consumption analysis, all of the trips (including those that remain internal to the site and those that are pass-by trips) are considered. Using the default assumptions in CalEEMod regarding trip length and total VMT, the project is expected generate a total of 15,680,281 VMT annually (Appendix I). Assuming an average fuel efficiency of 17.5 miles per gallon (DOT 2014), the proposed project would increase consumption of gasoline by 274,404,918 gallons annually. With a conversion factor of 33.7 kWh per gallon of gasoline, the annual energy consumption due to these trips would be 9,247,445,720 kWh.

There would be an increase in local energy consumption due to the proposed project. However, because the project would incorporate energy-efficient elements as required by the City's Building Code, the energy consumption of Alternative A would not be wasteful or inefficient. The demand for housing and jobs in the City demonstrates that the energy consumption used by this or any in-fill project would not be unnecessary. Therefore, the impact of energy consumption at the proposed project is considered **less than significant**.

Operations would also expel energy through trash collection, the recycling process, and the greenhouse gases expelled by recomposing solid waste in landfills.

The use of deciduous trees in purposeful landscaping will reduce a buildings need for energy by the shade cooling the building and the lack of leaves allowing more sunlight and thus heat on the exterior of the building. Furthermore, the use of trees and vegetation extensively throughout the site would reduce the local urban heat island effect and thus reduce the need for cooling during the summer.

Additional Project Design Features

CEQA Guidelines, Appendix F, Energy Conservation, states that the "goal of conserving energy implies the wise and efficient use of energy." It lists three means of achieving this goal: decreasing overall per capita energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources" (14 CCR 15000 et seq.). Public transit, such as fixed bus routes, reduce vehicle trips and result in decreased demand for transportation-related energy. Grass Valley maintains six public transit routes including one which goes up to Nevada City. The project site is located along two different routes and is directly adjacent to a transfer point.

Additionally, Alternative A would include the use of recycled materials in construction and the recycling or reuse of construction materials and debris, and would include other energy conservation features such as parking lot shade trees and Energy Star appliances.

Conclusion

Overall, the proposed project would result in an increase in energy consumption, with the project requiring a total of 9,247,445,720 kWh associated with vehicle trips to/from and within the project site, 3,010,485 kWh in on-site electricity consumption, and 2,279,852 kBtu in on-site natural gas consumption. As noted in Section 16.5.1, Energy Setting, the project's energy demands would be consistent with the anticipated level of economic development and growth in the region. The demand for local housing and commercial spaces in the project area demonstrate that the energy consumption of these facilities would not be unnecessary. Therefore, impacts related to wasteful, inefficient, or unnecessary energy consumption would be **less than significant.**

Alternative B

Daily Operations

As discussed in Chapter 2, Alternative B proposes to construct approximately 104,350 square feet of commercial building space, 8,500 square feet of office space and 171 multi-family dwelling units. The project would also construct a new circulation system throughout the proposed project and would install landscaping and recreational facilities. As discussed in Chapter 4, Alternative B would be expected to generate between 170 and 190 jobs and to support a residential population of 349 people.

The daily operation of Alternative B would generate demand for electricity, natural gas, and water supply, as well as generating wastewater requiring off-site conveyance, treatment, and disposal. PG&E uses a variety of renewable energy sources to generate a portion of its electricity, and these sources would contribute to the project's electricity supply. Due to the nature of the project site, which is located in a developed, landlocked area, it would be infeasible to use on-site renewable energy sources such as hydropower, biodiesel, or ocean-dependent technologies. However, consistent with the California Green Building Code, solar panels would be provided in association with the proposed residential land use.

The CalEEMod program estimates energy usage associated with building systems that are regulated under Title 24 (such as the heating and cooling system), lighting, and use of office equipment, appliances, plug-ins, and other sources not covered by Title 24. The CalEEMod program estimates that the office and commercial project components would consume 813,649 British thermal units (kBtu) of natural gas and 1,660,410 of electricity (including for parking lot lighting) annually (Appendix I).

The CalEEMod modeling results also indicate that the multiple-family component of the project would consume 1.84673e+006 kBtu of natural gas annually and the multi-family residences would consume 813,798 kWh. Thus Alternative B would consume 2,660,379 kBtu annually and 813,798 kWh annually (Appendix I).

The CalEEMod modeling estimates that Alternative B would generate approximately 8,872.67 daily vehicle trips during the week. It is noted that the traffic impacts analysis demonstrates that a substantial portion of these daily trips would remain on site or would be considered pass-by trips. However, for the purposes of this energy consumption analysis, all of the trips (including those that remain internal to the site and those that are pass-by trips) are considered. Using the default assumptions in CalEEMod regarding trip length and total VMT, the project is expected generate a total of 17,584,086 VMT annually (Appendix I). Assuming an average fuel efficiency of 17.5 miles per gallon (DOT 2014), Alternative B would increase consumption of gasoline by 1,008,805 gallons annually. With a conversion factor of 33.7 kWh per gallon of gasoline, the annual energy consumption due to these trips would be 33,861,926 kWh.

There would be an increase in local energy consumption due to Alternative B. However, because the project would incorporate energy-efficient elements as required the City's Building Code, the energy consumption of the proposed project would not be wasteful or inefficient. The demand for housing and jobs in the City demonstrates that the energy consumption used by this or any in-fill project would not be unnecessary. Therefore, the impact of energy consumption from Alternative B is considered **less than significant**.

Operations would also expel energy through trash collection, the recycling process, and the greenhouse gases expelled by recomposing solid waste in landfills.

The use of deciduous trees in purposeful landscaping will reduce a buildings need for energy by the shade cooling the building and the lack of leaves allowing more sunlight and thus heat on the exterior of the building. Furthermore, the use of trees and vegetation extensively throughout the site would reduce the local urban heat island effect and thus reduce the need for cooling during the summer.

Additional Project Design Features

CEQA Guidelines, Appendix F, Energy Conservation, states that the "goal of conserving energy implies the wise and efficient use of energy." It lists three means of achieving this goal: decreasing overall per capita energy consumption, decreasing reliance on fossil fuels, and increasing reliance on renewable energy sources" (14 CCR 15000 et seq.). Public transit, such as fixed bus routes, reduce vehicle trips and result in decreased demand for transportation-related energy. Grass Valley maintains six public transit routes including one which goes up to Nevada City. The project site is located along two different routes and is directly adjacent to a transfer point.

Additionally, Alternative B would include the use of recycled materials in construction and the recycling or reuse of construction materials and debris, and would include other energy conservation features such as parking lot shade trees and Energy Star appliances.

Conclusion

Overall, the proposed project would result in an increase in energy consumption, with the project requiring a total of 33,861,926 kWh associated with vehicle trips to/from and within the project site, 813,798 kWh in on-site electricity consumption, and 2,660,379 kBtu in on-site natural gas consumption. As noted in Section 16.5.1, the project's energy demands would be consistent with the anticipated level of economic development and growth in the region. The demand for local housing and commercial spaces in the project area demonstrate that the energy consumption of these facilities would not be unnecessary. Therefore, impacts related to wasteful, inefficient, or unnecessary energy consumption would be less than significant.

Impact 16-3: Could the proposed project objectives be achieved through a feasible alternative that would substantially reduce the amount of energy required over the life of the project or through a feasible alternative that would include use of alternative fuels or energy systems?

Significance and Mitigation	Alternative A	Alternative B
Significance before mitigation:	Less than Significant	Less than Significant
Mitigation measures:	None Required	None Required
Significance after mitigation:	Less than Significant	Less than Significant

Alternative A and Alternative B

As discussed under Impacts 16-1 and 16-2, both Alternatives would have a less than significant impact related to energy consumption during construction and during operation. The approximate amount of energy consumed by the project is also identified previously. CEQA Guidelines, Appendix F, Energy Consumption, states that the alternatives in an EIR should be compared "in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy" (14 CCR 15000 et seq.). The analysis of project alternatives provided in Chapter 17 of this EIR includes consideration of whether any of the feasible project alternatives would substantially reduce the amount of energy required over the life of the project and finds that each of the alternatives would result in reduced overall energy consumption compared to Alternative A and B; however, this is because the alternatives would either change the proposed land use or reduce the size of the proposed project. None of these alternatives would result in a more efficient use of energy. As the local demand for housing, employment, and retail/commercial services increases, energy will be consumed in providing those services. A reduction in the amount of housing or commercial and office space developed on site would not necessarily reduce energy consumption, as local residents would continue to drive out of the City to seek commercial/retail services and commute to places of employment. Therefore, both Alternative A and Alternative B will have less than significant impacts.

16.5.4 Mitigation Measures

No mitigation measures are required.

16.6 REFERENCES CITED

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

24 CCR 11. California Green Building Standards Code (CALGreen). January 1, 2014.

California Public Resources Code, Sections 2100—21177. California Environmental Quality Act (CEQA), as amended.

California Public Utilities Code Section 2836.

CEC. 2007. California Energy Demand 2008–2018 Staff Revised Forecast. CEC-200-2007-015-SF2. November 2007.

CEC. 2014. "Overview." California Energy Almanac. http://www.energyalmanac.ca.gov/. 2014.

CEC. 2016. *Electricity Consumption by County*. http://ecdms.energy.ca.gov/elecbycounty.aspx. Accessed June 6, 2016.

EIA (Energy Information Administration). 2013. *Annual Energy Outlook 2013 with Projections to 2040*. DOE/EIA-0383(2013). U.S. Energy Information Administration, Independent Statistics and Analysis. April 2013. http://www.eia.gov/forecasts/aeo/pdf/0383(2013).pdf.

DOT (U.S. Department of Transportation). 2014. "Table 4-23: Average Fuel Efficiency of U.S. Light Duty Vehicles." Bureau of Transportation Statistics. http://www.rita.dot.gov/bts/sites/rita.dot.gov.bts/files/publications/national_transportation_statistics/html/table_04_23.html.

PG&E (Pacific Gas & Electric). 2016. "Company Profile." Accessed 2016. http://www.pge.com/en/about/company/profile/index.page.

CHAPTER 17
ALTERNATIVES TO THE PROPOSED PROJECT

17.1 INTRODUCTION

Pursuant to the California Environmental Quality Act (CEQA) Guidelines, environmental impact reports (EIRs) are required to "describe a range of reasonable 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" (14 CCR 15126.6(a)). This alternatives analysis is prepared in support of CEQA's goals to foster informed decision making and public participation (14 CCR 15126.6(a)). An EIR is not required to evaluate the environmental impacts of alternatives at the same level of detail as the proposed project, but it must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project.

The alternatives analysis is required even if the alternatives "would impede to some degree the attainment of the project objectives, or would be more costly" (14 CCR 15126.6(b)). An EIR must evaluate "only those alternatives necessary to permit a reasoned choice" (14 CCR 15126.6(f)) and does not need to consider "every conceivable alternative" to a project (14 CCR 15126.6(a)). The alternatives evaluated should be "potentially feasible" (14 CCR 15126.6(a)), but inclusion of an alternative in an EIR does not constitute definitive evidence that the alternative is in fact "feasible." The final decision regarding the feasibility of alternatives lies with the decision makers for a given project who must make the necessary findings addressing the feasibility of alternatives for avoiding or substantially reducing a project's significant environmental effects (California Public Resources Code, Section 21081; see also 14 CCR 15091).

This chapter identifies the alternatives that were included for analysis, evaluates the environmental impacts associated with them, and compares the impacts with those of the proposed Dorsey Marketplace (proposed project). This chapter also identifies those alternatives considered by the City of Grass Valley (City) but not carried forward for detailed analysis, and it describes the basis for the Town's decision to omit those alternatives from the detailed analysis.

In conformity with CEQA, the purpose of this analysis is to focus on alternatives that are potentially feasible, and that would avoid or substantially lessen any of the significant effects of the project. It is noted that the analysis in the Environmental Analysis, Chapters 3 through 15, finds that the proposed project would result in significant and unavoidable impacts. Most of the project's significant or potentially significant impacts would be reduced to less than significant levels with implementation of the mitigation measures included in this EIR. Those impacts that would remain significant and unavoidable are addressed in Section 16.2, Significant and Unavoidable Environmental Impacts.

17.2 PROJECT OBJECTIVES

The primary objectives of the proposed project are set forth in Chapter 2, Project Description, of this Draft EIR. The project applicant has set forth the following objectives for the proposed project:

- Create a high-quality mixed-use infill project combining residential, retail, and community uses through the re-use of an existing brownfield site consistent with the City's plans for the Core Priority Development Area and its Economic Strategic Plan.
- Develop an infill site adjoining and proximate to existing infrastructure, high density residential, affordable and senior housing, Sierra Nevada Memorial Hospital and medical offices, and existing businesses along Idaho-Maryland Road.
- Construct the Spring Hill Drive connector between Dorsey Drive and Idaho Maryland Road, consistent with the City's General Plan.
- Incorporate safe and convenient walking paths, access to public transit, enhanced bicycle circulation.
- Redevelop the property to allow for the environmental clean-up of a brownfield former mining site.
- Develop the project site in such a way as to make a positive contribution to the City's satisfaction of its Regional Housing Needs Allocation through the creation of new quality high-density market-rate housing.
- Create new retail uses that will capture more local sales tax dollars, reducing the amount of sales tax leakage from City and County residents shopping in other jurisdictions, and reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions associated with shopping destinations outside the area.
- Develop a retail mixed use center that incorporates quality design, local art and community amenities that delivers a lifestyle oriented experience.
- Develop a diverse mix of retail uses that allows a single vehicle trip to the project site verses multiple vehicle trips to a number of retail locations to enjoy a similar shopping experience, thereby reducing vehicle miles traveled, air quality impacts and greenhouse gas emissions.
- Develop a mixed-use project that includes high-density residential uses to reduce the need for vehicular trips to satisfy resident retail needs.

17.3 ALTERNATIVES ANALYSIS

Throughout Chapters 4 through 15, Alternative A and Alternative B have been evaluated at an equal level of detail. This section evaluates three additional alternatives to the proposed project,

including two variations of the No Project Alternative. The No Project Alternative is a required element of an EIR pursuant to Section 15126.6(e) of the CEQA Guidelines that examines the environmental effects that would occur if the project were not to proceed. The other alternatives are discussed as part of the "range of reasonable alternatives." The environmental effects of each alternative relative to the environmental effects of Alternative A and Alternative B are evaluated below. The conclusions from this analysis are listed in the alternatives summary matrix provided at the end of this discussion.

The project alternatives were chosen based on a balancing of considerations of each alternative's ability to best meet the project objectives stated above and to avoid or substantially lessen the significant effects of the proposed project. The selected alternatives constitute a reasonable range of project alternatives due to their consideration of different variations in the size and layout of proposed project components. As noted previously, the intent of this alternatives analysis is to identify a means of avoiding or substantially lessening any of the significant effects of the proposed project. The analysis throughout chapters 4 through 15 show that under either Alternative A or Alternative B, the project would result in no significant and unavoidable environmental effects. The project would result in 30 significant and potentially significant impacts that would be reduced to less-than-significant levels with implementation of the mitigation measures identified in this EIR.

The project alternatives are evaluated as part of the "range of reasonable alternatives" required under CEQA. They are described in the following subsections. The alternatives addressed in this section are listed below, followed by a more detailed discussion of each.

Alternatives Considered but Rejected

Bifurcation of the Spring Hill Extension. During the NOP comment period, a number of concerns were raised that traffic would be negatively impacted on Idaho-Maryland Road. In order to alleviate these concerns, consideration was given to an alternative would bifurcate Spring Hill Drive so that it would not provide a connection between Dorsey Drive and Idaho-Maryland Road. However, by bifurcating Spring Hill Drive within the project site, the project would no longer be consistent with the Circulation Element of the General Plan. In addition, the City has maintained an easement on the property specifically for the extension of Spring Hill. Thus this alternative is considered infeasible because it would impede attainment of the City's established transportation plans.

17.3.1 Alternative 1a: No Project/No Build

Under the No Project/No Build Alternative, the project site would remain in its current condition. No building demolition, grading, remediation, or new construction would occur. The site would remain vacant, and the existing chaparral and woodlands would not be removed.

Land Use

Alternative A and Alternative B would alter the land use of the project site. Implementation of mitigation measures specified in Chapter 3, Land Use, would ensure these changes would result in less than significant impacts related to consistency with policies and regulations. The No Project/No Build Alternative would result in no changes to land uses in the project vicinity. However, the project site is anticipated to be developed under the City's Core Priority Development Area and its Economic Strategic Plan. The No Project/No Build Alternative would be inconsistent with these plans, but would not preclude development of the site at a future time. Thus there would be no land use impacts under this alternative. Although land use impacts would be less than significant under the Alternative A and Alternative B, there would be no land use impacts under the No Project/No Build Alternative. The No Project/No Build Alternative would have somewhat reduced land use impacts compared to Alternative A and Alternative B.

Population and Housing

Alternative A and Alternative B would not result in any significant impacts associated with the provision of housing nor would the project induce substantial growth elsewhere in the City. The No Project/No Build Alternative would not contribute to any impacts to housing or induce growth because there would be no change to the existing conditions and there would be no new construction. However, none of the residential or commercial land uses proposed for the site would be developed, thus the provision of high-density residential land uses that may be capable of meeting some of the City's need for multi-family housing would not be achieved under this alternative. Compared to Alternative A and Alternative B, the No Project/No Build Alternative would have greater impacts related to population and housing because it would not provide any new multi-family housing.

Biological Resources

Alternative A and Alternative B would result in potentially significant impacts to biological resources associated with the loss of protected trees, special status plant species, and nesting birds. With implementation of mitigation measures specified in Chapter 6, these impacts would be reduced to less than significant levels. The No Project/No Build Alternative would result in no changes to biological resources. No nesting birds would be disturbed and all existing trees would remain in place.

While all of the biological resource impacts of Alternative A and Alternative B would be reduced to less than significant levels with implementation of mitigation measures, no development would occur under the No Project/No Build Alternative and there would be no loss of or disturbance to habitat or protected trees. Therefore, the No Project/No Build Alternative would have reduced biological resources impacts compared to Alternative A and Alternative B.

Cultural Resources

Alternative A and Alternative B would result in potentially significant impacts associated with disturbance of archaeological resources. There is a low potential for project construction to disturb unknown subsurface prehistoric or historic resources and human remains; mitigation is included that would reduce potential impacts to a less than significant level. The No Project/No Build Alternative would result in no potential to disturb existing buildings or subsurface cultural resources or human remains and would avoid these potential impacts and thus would have reduced cultural resource impacts compared to Alternative A and Alternative B.

Visual Resources

Alternative A and Alternative B would result in potentially significant impacts to visual resources associated with loss of trees and changes in the visual character of the project site. Mitigation measures are identified to reduce these impacts to less than significant levels by identifying performance standards for project site landscaping to ensure that effective visual screening of the proposed development is provided.

Under the No Project/No Build Alternative, no site remediation or construction would occur; as a result, the No Project/No Build Alternative would result in no changes to existing visual conditions and visual character of the site. The hillside and ponderosa pine forest vegetation would not be changed or altered under this alternative. Therefore, the No Project/No Build Alternative would have reduced aesthetic impacts compared to Alternative A and Alternative B.

Transportation and Circulation

Alternative A would increase traffic in the project vicinity due to the introduction of commercial and residential land uses to the currently vacant project site. Implementation of mitigation measures would be necessary to ensure that most impacts to traffic and circulation in the vicinity are reduced to less than significant levels, however one impact would remain significant and unavoidable due to the length of vehicle queues at the Dorsey Drive/SR 20/49 interchange in the cumulative plus project scenario. Alternative B would generate less traffic than Alternative A, but would also increase traffic in the project vicinity and require implementation of mitigation measures requiring the project applicant to provide a fair-share contribution to installation of traffic signals at a few intersections. Traffic impacts under Alternative B would all be reduced to less than significant levels with implementation of mitigation. Since the No Project/No Build Alternative would not introduce any development to the project site, this alternative would result in no changes to transportation and circulation conditions in the project vicinity compared to existing conditions. The No Project/No Build Alternative would have no impacts on transportation and circulation. Therefore, the No Project/No Build Alternative would have reduced transportation and circulation impacts compared to Alternative A and Alternative B.

Noise

Alternative A and Alternative B would result in potentially significant impacts associated with noise generated during project construction and operation. Mitigation measures are identified to ensure that noise exposure for residents of the project site and existing residents on adjacent parcels remain within the acceptable noise level range as established by the City of Grass Valley. The No Project/No Build Alternative would avoid all noise generation from site remediation, construction, and increases in traffic associated with Alternative A and Alternative B. Therefore, the No Project/No Build Alternative would have reduced noise impacts compared to Alternative A and Alternative B.

Air Quality

Alternative A and Alternative B would result in potentially significant air quality impacts during project construction and project operation. Implementation of mitigation measures would reduce the air pollutant emissions during construction to a less than significant level. Under the No Project/No Build Alternative, no site remediation or construction would occur, and the No Project/No Build Alternative would neither increase nor decrease emissions of air pollutants. Thus, the No Project/No Build Alternative would result in no impacts to air quality.

Greenhouse Gas Emissions

Alternative A and Alternative B would result in a significant and unavoidable impact related to greenhouse gas (GHG) emissions during project operation. Implementation of mitigation measures would reduce the GHG emissions, but emissions would remain significant and unavoidable. Under the No Project/No Build Alternative, there would be no operational emissions of GHGs. Thus, the No Project/No Build Alternative would result in no impacts associated with GHG emissions.

Geology, Soils, Seismicity, and Paleontology

Alternative A and Alternative B would not expose future residents to risks due to earthquakes or unstable soils and impacts would be less than significant. Compliance with existing state and local regulations would ensure that substantial erosion or loss of topsoil would be less than significant. There is low potential for the site to support paleontological resources, disturbance of which would be a potentially significant impact. Mitigation is identified to reduce this impact to less than significant.

No impacts to geology or soils or paleontological resources would occur under the No Project/No Build Alternative because there would be no site disturbance, grading, or project construction. Therefore, the No Project/No Build Alternative would have reduced impacts to geology, soils, seismicity, and paleontology compared to Alternative A and Alternative B.

Hydrology and Water Quality

Alternative A and Alternative B would incorporate BMPs and meet NPDES permit requirements, and thus would not result in any significant impacts to groundwater supply, or increases in sediment and erosion on local waterways during construction. Further, the project would include three small stormwater detention basins that would be sized sufficiently to ensure that the project does not result in an increase in stormwater runoff rates from the project site, thus the project's stormwater flows would not exceed capacity of existing stormwater infrastructure. All of these impacts were determined to be less than significant.

There would be no impacts to hydrology or water quality related to an increase in stormwater, loss of groundwater, or inadequate stormwater infrastructure under the No Project/No Build Alternative because there would be no increase in impervious surfaces under this alternative and no development. Therefore, impacts would be reduced compared to Alternative A and Alternative B.

Public Services and Utilities

Alternative A and Alternative B would have less than significant impacts related to existing public services including police, fire, solid waste disposal, emergency access, parks, libraries, schools, or dry utilities. Alternative A and Alternative B would increase demand for these services and utilities but the demand would be within the levels anticipated by the applicable service providers and impacts would remain less than significant.

The No Project/No Build Alternative would not develop new housing, commercial space, or office space that would generate an increase in population requiring public services and utilities to accommodate the increase in demand. Therefore, the No Project/No Build Alternative would have reduced public services and utilities impacts compared to Alternative A and Alternative B.

Hazards and Hazardous Materials

Alternative A and Alternative B would not result in any impacts related to the use, transport, or handling of hazards and hazardous materials during project construction and operation. However, Alternative A does include remediation of the site. The No Project/No Build Alternative would result in no changes to hazardous conditions and would not include remediation. No new hazardous materials (such as fuel for construction equipment and cleaning products) would be used at the project site.

Impacts related to hazards and hazardous materials would be less than significant under Alternative A and Alternative B. While the No Project/No Build Alternative would not introduce new hazardous materials to the site during construction or operations, it would also not remediate the hazardous materials currently on site. Overall, this alternative would have similar impacts associated with hazards and hazardous materials as Alternative A and Alternative B.

Energy Consumption

Both construction and operation of Alternative A and Alternative B would result in less-than-significant impacts associated with energy consumption. The No Project/No Build Alternative would result in no changes in energy consumption on the project site. No energy consumption associated with construction, vehicle trips, or on-site operation would occur. Impacts related to energy consumption would be less than significant under Alternative A and Alternative B, but because there would be no construction or new on-site sources under the No Project/No Build Alternative, impacts would be less severe than under Alternative A and Alternative B.

17.3.2 Alternative 1b: No Project/Existing Designations

This alternative assumes development would occur under the existing General Plan and Zoning designations for the project site. As discussed in Chapter 2, Project Description, all 26.8 acres of the project site are designated as Business Park in the General Plan and zoned Commercial Business Park. This zoning code requires the following setbacks: 20 feet from fronts of buildings to major streets, 40 feet from parking areas to major streets, 10 feet from fronts of buildings to local streets, 15 feet from parking areas to local streets, 30 feet from building sides to streets, and 10 feet from the rears of buildings to residential uses. Based on the required setbacks and area necessary for parking, roads, and other infrastructure, this alternative assumes approximately 200,000 square feet of development. The existing easement for Spring Hill Drive would be used to connect Idaho Maryland Road to Dorsey Drive. The area of disturbance within the project site would essentially be the same as Alternative A and Alternative B. Therefore, impacts would be similar.

Land Use

Alternative A and Alternative B would alter the planned land uses of the project site. Implementation of mitigation measures would ensure that these changes would result in less than significant impacts related to land use. The No Project/Existing Designations Alternative would develop the project site under the existing General Plan and Zoning designations. This alternative would result in office, limited manufacturing and some retail space, and could include up to 15 residential units per acre. With appropriate location of the land uses within the project site, such as placing the warehouse space near existing light industrial in the southern portion of the project site, the development would be generally consistent and compatible with adjacent land uses. Impacts would remain less than significant. Alternative A, Alternative B, and the No Project/Existing Designations Alternative would result in development of the currently vacant site, introducing new land uses adjacent to existing residences. The entire site would support Commercial Business Park uses, resulting in commercial and office uses, and potentially some residential use, being placed adjacent to existing businesses and residences. In contrast, Alternative A and Alternative B would place

residential and commercial retail land uses adjacent to most of the existing residences and businesses that surround the project site. The No Project/Existing Designations Alternative would have similar impacts related to land use as Alternative A and Alternative B.

Population and Housing

Alternative A and Alternative B would not result in any significant impacts associated with the provision of housing nor would the project induce substantial growth elsewhere in the City. The No Project/Existing Designations Alternative would support a similar mixed-use project, but would permit fewer residential units, and warehouse retail versus commercial retail space. A total of 90 multi-family units would be constructed under Alternative A and 171 multi-family units would be constructed under Alternative B. These units would contribute to meeting the City's Regional Housing Needs as anticipated under the City's Housing Element. Under the existing zoning, up to 15 residential units per acre, or up to 400 residential units would be permitted on the 26.8 acres. However, given the Business Park designation in the General Plan and the Commercial Business Park zoning, it is expected that the majority of the site would be developed with office, some retail, and business park-type uses, with a limited amount of residential units. Under this alternative, impacts to population and housing would be similar to the impacts of Alternative A and Alternative B.

Biological Resources

Alternative A and Alternative B would result in potentially significant impacts to biological resources associated with the loss of protected trees and possible disturbance to special status plant species and nesting birds. With implementation of mitigation measures, these impacts would be reduced to less than significant levels. Under the No Project/Existing Designations Alternative, the project site would be cleared and graded, similar to Alternative A and Alternative B, and the development footprint would be the same. Thus it is anticipated that the loss protected trees and possible disturbance to special status plant species and nesting birds would be similar to Alternative A and Alternative B, requiring implementation of the same mitigation measures to reduce potential impacts to special status plant species and nesting birds to a less than significant level.

Overall, the No Project/Existing Designations Alternative would result in similar impacts to biological resources as Alternative A and Alternative B. All impacts under either Alternative A, Alternative B, or this alternative would be reduced to less-than-significant levels with implementation of mitigation measures.

Cultural Resources

Alternative A and Alternative B would result in potentially significant impacts associated with disturbance of archaeological resources. While the potential for disturbance to unknown subsurface

prehistoric or historic resources and human remains is considered low, mitigation is included that would reduce potential impacts to a less than significant level.

Development under the No Project/Existing Designations Alternative would result in a similar area of disturbance as well as potential disturbance to archaeological resources as Alternative A and Alternative B because the same grading and earthmoving activities could potentially disturb unknown subsurface resources. Thus impacts to cultural resources would be the same under the No Project/Existing Designations Alternative and Alternative A and Alternative B.

Visual Resources

Alternative A and Alternative B would result in potentially significant impacts to visual resources associated with loss of trees and changes in the visual character of the project site. Mitigation measures are identified to reduce these impacts to less than significant levels by identifying performance standards for project site landscaping to ensure that effective visual screening of the proposed development is provided.

The No Project/Existing Designations Alternative would result in the same alteration of the visual conditions at the project site as Alternative A and Alternative B by developing commercial, warehouse, and possibly a limited amount of residential land uses, replacing nearly all of the existing vegetation on site with new buildings. With implementation of the same mitigation measures as required for Alternative A and Alternative B, the No Project/Existing Designations Alternative would result in similar impacts to visual resources.

Transportation and Circulation

Alternative A would increase traffic in the project vicinity due to the introduction of commercial and residential land uses to the currently vacant project site. Implementation of mitigation measures would be necessary to ensure that most impacts to traffic and circulation in the vicinity are reduced to less than significant levels, however one impact would remain significant and unavoidable due to the length of vehicle queues at the Dorsey Drive/SR 20/49 interchange in the cumulative plus project scenario. Alternative B would generate less traffic than Alternative A, but would also increase traffic in the project vicinity and require implementation of mitigation measures requiring the project applicant to provide a fair-share contribution to installation of traffic signals at a few intersections. Traffic impacts under Alternative B would all be reduced to less than significant levels with implementation of mitigation.

The No Project/Existing Designations Alternative would introduce a similar level of development to the project site, supporting development of Corporate Business Park land uses, which would include warehouses, commercial and office uses, and limited residential uses. It is expected that the traffic generation associated with a Corporate Business Park would be less than

the traffic generation of either Alternative A or Alternative B because the retail and residential uses anticipated under those alternative have higher trip generation rates than warehouse and office uses. Thus the No Project/Existing Designations Alternative would have reduced transportation impacts compared to Alternative A and Alternative B.

Noise

Alternative A and Alternative B would result in potentially significant impacts associated with noise generated during project construction and operation. Mitigation measures are identified to ensure that noise exposure for residents of the project site and existing residents on adjacent parcels remain within the acceptable noise level range as established by the City of Grass Valley. The No Project/Existing Designations Alternative would result in development of a similar project, including similar amounts of noise generation from construction and increases in noise generated from the proposed land uses. Therefore, the No Project/Existing Designations Alternative, assuming incorporating the same types of mitigation measures, would have similar noise impacts as Alternative A and Alternative B.

Air Quality

Alternative A and Alternative B would result in less than significant air quality impacts during project construction and during project operation. Implementation of mitigation measures would reduce the air pollutant emissions to less than significant levels. Under the No Project/Existing Designations Alternative, the level of construction activity on the site would be similar to Alternative A and Alternative B and would be expected to result in similar impacts. Operation of the No Project//Existing Designations Alternative would generate less vehicle trips which would reduce the air pollution emissions associated with the project. Thus impacts to air quality would be less under the No Project//Existing Designations Alternative compared to Alternative A and Alternative B.

Climate Change

Alternative A and Alternative B would result in significant and unavoidable impacts related to GHG emissions during project operation. Implementation of mitigation measures would reduce the GHG emissions, but emissions would remain significant and unavoidable. Under the No Project/Existing Designations Alternative, construction emissions would be similar to those under Alternative A and Alternative B, while operational emissions would be reduced commensurate with the reduction in traffic volumes associated with the No Project/Existing Designations Alternative. The impact associated with GHGs emissions would be reduced under this alternative, but would be expected to remain significant and unavoidable.

Geology, Soils, Seismicity, and Paleontology

Alternative A and Alternative B would not expose future residents to risks due to earthquakes or unstable soils and impacts would be less than significant. Compliance with existing state and local regulations would ensure that substantial erosion or loss of topsoil would be less than significant. There is low potential for the site to support paleontological resources, disturbance of which would be a potentially significant impact. Mitigation is identified to reduce this impact to less than significant.

Because the No Project/Existing Designations Alternative would involve the same site remediation and area of disturbance for construction, this alternative would result in the same impacts related to geology, soils, seismicity, and paleontology as Alternative A and Alternative B.

Hydrology and Water Quality

Alternative A and Alternative B would incorporate BMPs and meet NPDES permit requirements, and thus would not result in any significant impacts to groundwater supply, increases in stormwater flows that could exceed capacity of stormwater infrastructure, or increases in sediment and erosion on local waterways during construction. All of these impacts were determined to be less than significant.

The No Project/Existing Designations Alternative would develop a project with Corporate Business Park land uses and would involve construction in the same area of disturbance as Alternative A and Alternative B. The No Project/Existing Designations Alternative would result in a similar amount of impervious surface within the project site. BMPs and other mitigation measures to address such impacts would be similar to those for Alternative A – for example, the alternative would likely also use vegetated swales and detention basins to control stormwater runoff. Therefore, the No Project/Existing Designations Alternative would have similar impacts to hydrology and water quality related to an increase in stormwater, loss of groundwater, or inadequate stormwater infrastructure it would meet the same performance standards for stormwater management as Alternative A and Alternative B.

Public Services and Utilities

Alternative A and Alternative B would have less than significant impacts related to existing public services including police, fire, solid waste disposal, emergency access, parks, libraries, schools, and dry utilities. Alternative A and Alternative B would increase demand for these services and utilities but the demand would be consistent with the levels anticipated by the applicable service providers and impacts would remain less than significant.

The No Project/Existing Designations Alternative would support a similar mixed-use development consisting of warehouse retail, business park, office, and some residential land uses. The existing

zoning allows for up to 8 residential units per acre; therefore, this alternative could generate more than 200 residential units while Alternative A includes 90 units and Alternative B includes 171 units. However, given the business park land use, it is likely that the existing designations alternative would generate a smaller population increase than Alternative A or Alternative B. The alternative would still require public services and utilities but would likely at a lower demand for services compared to Alternative A. Therefore, the No Project/Existing Designations Alternative would have similar or reduced public services and utilities impacts compared to Alternative A and Alternative B.

Hazards and Hazardous Materials

Alternative A and Alternative B would result in less than significant impacts related to the use, transport, or handling of hazards and hazardous materials during project construction and operation. Impacts related to hazards and hazardous materials would be less than significant under Alternative A and Alternative B. The No Project/Existing Designations Alternative would involve the same site remediation activities as either Alternative A or Alternative B and would result in similar less-than-significant impacts related to hazards and hazardous materials.

Energy Consumption

Both construction and operation of Alternative A and Alternative B would result in less-than-significant impacts associated with energy consumption. The No Project/Existing Designations would result in similar impacts to energy consumption on the project site. Energy efficiency (meaning the amount of energy used per square foot of building space or per dwelling unit) under the No Project/Existing Designations Alternative would be similar to Alternative A and Alternative B. Traffic generation would be reduced under the No Project/Existing Designations Alternative, which would reduce the total amount of energy consumed, however it would not change the energy efficiency of the vehicle traffic associated with the project. Therefore, impacts related to energy consumption associated with the No Project/Existing Designations Alternative would be similar to those of Alternative A and Alternative B.

17.3.3 Alternative 2: Reduced Development

This alternative would reduce the amount of development relative to the originally proposed project, Alternative A. It would reduce commercial development by about 15% and residential development by 50% in an effort to reduce impacts associated with the extent of the area of disturbance within the project site. This would result in 153,000 square feet of commercial development and 45 multi-family residential units.

The Reduced Development Alternative assumes a reduced development footprint to avoid grading and developing on the hilltop and to increase retention of existing ponderosa pines and McNabb cypress. The extension of Spring Hill Drive through the project site would occur in the same

alignment as proposed under Alternative A and Alternative B. This alternative would still require a General Plan Amendment to change the land use designation on the site from Business Park to Commercial and Residential Urban High Density and a rezone from Corporate Business Park to Commercial (C-2) and Multiple Dwelling Residential (R-3), as in Alternative A.

Land Use

Alternative A and Alternative B would alter the planned land uses of the project site. These changes would result in less than significant impacts related to land use and would not require implementation of mitigation measures.

The Reduced Development Alternative would develop a similar project, with reduced densities across the site, resulting in fewer residential units and less commercial space. The development would be generally consistent and compatible with adjacent land uses. Impacts would remain less than significant and would be similar to those of Alternative A and Alternative B.

Population and Housing

Alternative A and Alternative B would not result in any significant impacts associated with the provision of housing nor would the project induce substantial growth elsewhere in the City.

The Reduced Development Alternative would develop a similar project, with reduced densities across the site, resulting in a lower residential population for the site. Alternative A would support approximately 184 residents, Alternative B would support approximately 349 residents, and the Reduced Development Alternative would support approximately 92 residents. This level of population growth is consistent with the City of Grass Valley General Plan growth projections and impacts would remain less than significant. This alternative would have a similar but reduced ability as Alternative A and Alternative B to contribute to achievement of the City's Housing Element goals. Thus the Reduced Development Alternative would result in similar impacts related to population and housing as Alternative A and Alternative B.

Biological Resources

Alternative A and Alternative B would result in potentially significant impacts to biological resources associated with the loss of protected trees and possible disturbance to special status plant species and nesting birds. With implementation of mitigation measures, these impacts would be reduced to less than significant levels. Under the Reduced Development Alternative, only part of the project site would be developed. It is expected that approximately 18 acres of the site would be developed with commercial uses and associated parking and approximately 3 acres of the site would be developed with residential uses and associated parking. This would allow for an increase in the amount of open space and retention of natural habitat, including allowing for preservation

of a portion of the ponderosa pine forest on top of the knoll near the center of the site and a portion of the McNabb cypress woodland in the northeastern and southeastern corners of the site. Thus it is anticipated that the loss of sensitive natural communities, loss of protected trees and possible disturbance to special status plant species and nesting birds would be reduced compared to Alternative A and Alternative B.

Cultural Resources

Alternative A and Alternative B would result in potentially significant impacts associated with disturbance of archaeological resources. While the potential for disturbance to unknown subsurface prehistoric or historic resources and human remains is considered low, mitigation is included that would reduce potential impacts to a less than significant level.

Development under the Reduced Development Alternative would result in a smaller area of disturbance as well as potential disturbance to archaeological resources than Alternative A because this alternative would entail less grading and earthmoving activities that could potentially disturb unknown subsurface resources. Because some grading and earthwork still exists, there is still a potential for disturbance. Mitigation measures would ensure the proper protocols are followed in the event any resources were found under Alternative A, Alternative B, or the Reduced Density Alternative thus the potential impacts of the Reduced Density Alternative would be similar to those of Alternative A and Alternative B.

Visual Resources

Alternative A and Alternative B would result in potentially significant impacts to visual resources associated with loss of trees and changes in the visual character of the project site. Mitigation measures are identified to reduce these impacts to less than significant levels by identifying performance standards for project site landscaping to ensure that effective visual screening of the proposed development is provided.

The Reduced Development Alternative would also result in alteration of the visual conditions at the project site by a mixture of residential, commercial, and office uses. However, a portion of the ponderosa pine forest on top of the knoll near the center of the site and a portion of the McNabb cypress woodland in the northeastern and southeastern corners of the site would be retained. Under the Reduced Development Alternative, impacts to aesthetics would be reduced compared to Alternative A and Alternative B because less of the site would be developed and more trees would remain on site and visible from off-site locations.

Transportation and Circulation

Alternative A and Alternative B would increase traffic in the project vicinity due to the introduction of commercial, residential, and office (in Alternative B only) land uses to the currently vacant project site. Implementation of mitigation measures would be necessary to reduce impacts to traffic and circulation in the vicinity. Alternative A would result in one significant and unavoidable impact due to the length of vehicle queues at the Dorsey Drive/SR 20/49 interchange in the cumulative plus project scenario. Alternative B would generate less traffic than Alternative A, but would also increase traffic in the project vicinity and require implementation of mitigation measures requiring the project applicant to provide a fair-share contribution to installation of traffic signals at a few intersections. Traffic impacts under Alternative B would all be reduced to less than significant levels with implementation of mitigation.

The Reduced Development Alternative would introduce a lower level of development to the project site. While this alternative would contribute traffic to the existing transportation and circulation network in the project vicinity, the increase in traffic volumes would be reduced. Therefore, this alternative would result in reduced impacts compared to Alternative A and Alternative B.

Noise

Alternative A and Alternative B would result in potentially significant impacts associated with noise generated during project construction and operation. Mitigation measures are identified to ensure that noise exposure for residents of the project site and existing residents on adjacent parcels remain within the acceptable noise level range as established by the City of Grass Valley. The Reduced Development Alternative would result in development of a similar but smaller scale project. Due to fewer residential units and less commercial and office space, this alternative is anticipated to require less construction than Alternative A and Alternative B, resulting in reduced noise generation from construction and the proposed land uses as well as from traffic. Therefore, the Reduced Development Alternative would have similar but reduced noise impacts compared to Alternative A and Alternative B.

Air Quality

Alternative A and Alternative B would result in potentially significant air quality impacts during project construction and less than significant impacts during project operation. Implementation of mitigation measures would reduce the air pollutant emissions during construction to a less than significant impact. The Reduced Development Alternative would require less development on site and would generate less traffic than Alternative A and Alternative B. The Reduced Development Alternative is expected to result in reduced air pollutant emissions during project construction and operation compared to Alternative A and Alternative B.

Climate Change

Alternative A and Alternative B would result in significant and unavoidable impacts related to GHG emissions during project operation. Implementation of mitigation measures would reduce the GHG emissions, but emissions would remain significant and unavoidable. The Reduced Development Alternative would involve less construction intensity and operational emissions than Alternative A and Alternative B. While the total GHG emissions during construction would be reduced, it is expected that some construction phases would continue to result in significant GHG emissions. The Reduced Development Alternative would reduce those emissions by approximately 10%; however, the emissions would continue to exceed the recommended threshold of 1,100 metric tons CO_2E annually and the impact would remain significant and unavoidable.

Geology, Soils, Seismicity, and Paleontology

Alternative A and Alternative B would not expose future residents to risks due to earthquakes or unstable soils and impacts would be less than significant. Compliance with existing state and local regulations would ensure that substantial erosion or loss of topsoil would be less than significant. There is low potential for the site to support paleontological resources, disturbance of which would be a potentially significant impact. Mitigation is identified to reduce this impact to less than significant.

The Reduced Development Alternative would involve the same site remediation activities as Alternative A and Alternative B but would disturb slightly less of the project site. Similar to Alternative A and Alternative B, there would be no significant impacts associated with risks to the public due to earthquakes or unstable soils and there would be no impacts to paleontological resources. Compliance with existing requirements would mitigate for potential impacts associated with construction-related erosion. Impacts of the Reduced Development Alternative associated with geology, soils, seismicity, and paleontology would be similar to the impacts of Alternative A and Alternative B.

Hydrology and Water Quality

Alternative A and Alternative B would incorporate BMPs and meet NPDES permit requirements, and thus not result in any significant impacts to groundwater supply, increases in stormwater flows that could exceed capacity of stormwater infrastructure, or increases in sediment and erosion on local waterways during construction. All of these impacts were determined to be less than significant.

The Reduced Development Alternative would develop a mixed-use project similar to Alternative A and Alternative B but would involve construction in a slightly smaller area of disturbance. This alternative would have similar but reduced impacts to hydrology and water quality related to an increase in stormwater, loss of groundwater, adequacy of stormwater infrastructure, and flood hazards because development would occur in generally similar areas and there would be a similar

(although smaller) increase in impervious surfaces under this alternative as under Alternative A. Therefore, impacts would be similar to Alternative A and Alternative B.

Public Services and Utilities

Alternative A and Alternative B would have less than significant impacts related to existing public services including police, fire, solid waste disposal, emergency access, libraries, schools, and dry utilities. Alternative A and Alternative B would increase demand for these services and utilities but the demand would be consistent with the levels anticipated by the applicable service providers and impacts would remain less than significant. The Reduced Development Alternative would develop a similar mixed-use project, although there would be fewer residential units and less commercial and office space. This alternative would generate a smaller population increase than Alternative A and Alternative B. This alternative would still require public services and utilities but would have a slightly lower demand for services compared to Alternative A and Alternative B. Therefore, the Reduced Development Alternative would have slightly reduced public services and utilities impacts.

Hazards and Hazardous Materials

Alternative A and Alternative B would result in less than significant impacts related to the use, transport, or handling of hazards and hazardous materials during project construction and operation. Impacts related to hazards and hazardous materials would be less than significant under Alternative A and Alternative B. The same site remediation required for Alternative A and Alternative B would occur under the Reduced Development Alternative. This alternative would result in similar less-than-significant impacts related to hazards and hazardous materials as Alternative A and Alternative B.

Energy Consumption

Construction and operation of Alternative A would result in less-than-significant impacts associated with energy consumption. Because the Reduced Development Alternative would entail less development than Alternative A and Alternative B, it would result in a reduced total amount of energy consumption, but it would have relatively the same energy efficiency. Thus impacts related to energy consumption would be similar and would remain less than significant under Alternative A and Alternative B.

17.3.4 Alternative 3: Vertical Mixed Use

The alternative entails a vertical mixed use development. This allows for a reduced project footprint which accommodates greater preservation of existing resources within the project site. The development would reduce the amount of commercial development by about 25% and

increase residential development by about 20% compared to Alternative A, resulting in 135,000 square feet of commercial space and 108 multi-family residential units. It is expected that this would involve development on approximately 18 acres of the 26.8-acre project site. Most buildings would be two or three stories tall with commercial uses on the ground floor and residential units on the second and third stories, similar to the mixed office-residential building proposed under Alternative B. Some buildings would be a single story and would support only commercial uses.

By reducing the overall development footprint, the Vertical Mixed-Use Alternative would accommodate retaining a portion of the ponderosa pine forest on top of the knoll near the center of the site and a portion of the McNabb cypress woodland in the northeastern and southeastern corners of the site. The extension of Spring Hill Drive through the project site would occur in the same alignment as proposed under Alternative A and Alternative B. This alternative would still require a General Plan Amendment to change the land use designation on the site from Business Park to Commercial and a rezone from Corporate Business Park to Commercial (C-2) or Neighborhood Commercial.

The residential units would include balconies and would not exceed a maximum density of 15 residential units per acre. Upper floors may also be occupied by office uses. Per the City's Development Code, C-2 zoning allows a maximum height of 50 feet or four stories, requires no front setbacks and a rear 25-foot setback abutting existing residential uses, and there is no maximum site coverage. Businesses such as restaurants, markets, pharmacies, banks, and office are permitted. A Use Permit would be required for drive-through facilities, a single tenant floor area of over 10,000 square feet, and any commercial component that would operate outside of the hours from 8:00 a.m. to 6:00 p.m. (per 17.44.140 of the Development Code).

Land Use

Alternative A and Alternative B would alter the planned land uses of the project site. These changes would result in less than significant impacts related to land use and would not require implementation of mitigation measures.

The Vertical Mixed-Use Alternative would develop a similar project, but with a smaller footprint. Compared to Alternative A it would have more residential units and less commercial space; compared to Alternative B it would have fewer residential units and more commercial space. Similar to both Alternative A and Alternative B, the Vertical Mixed Use Alternative would be generally consistent and compatible with adjacent land uses. The land use impacts of the Vertical Mixed Use Alternative would be similar to the impacts of Alternative A and Alternative B.

Population and Housing

Alternative A and Alternative B would not result in any significant impacts associated with the provision of housing nor would the project induce substantial growth elsewhere in the City. The Vertical Mixed-Use Alternative would develop a similar project. Under Alternative A, the site would support approximately 184 residents, under Alternative B it would support 349 residents, and under the Vertical Mixed-Use Alternative the site would support approximately 220 residents. This level of population growth is consistent with the City of Grass Valley General Plan growth projections and impacts would remain less than significant. The Vertical Mixed-Use Alternative would include 108 multi-family dwelling units, which would contribute to achievement of the City's Housing Element goals slightly more than Alternative A and somewhat less than Alternative B. The Vertical Mixed-Use Alternative would result in similar impacts related to population and housing as Alternative A and Alternative B.

Biological Resources

Alternative A and Alternative B would result in potentially significant impacts to biological resources associated with the loss of protected trees and possible disturbance to special status plant species and nesting birds. With implementation of mitigation measures, these impacts would be reduced to less than significant levels. Under the Vertical Mixed-Use Alternative, it is expected that 18 acres of the project site would be developed, leaving 8.7 acres of open space. This would allow for preservation of a portion of the ponderosa pine forest on top of the knoll near the center of the site and a portion of the McNab cypress woodland in the northeastern and southeastern corners of the site. Thus it is anticipated that the loss of sensitive natural communities, loss of protected trees and possible disturbance to special status plant species and nesting birds would be reduced compared to Alternative A and Alternative B and the impacts to biological resource from the Vertical Mixed-Use Alternative would be less than those of Alternative A and Alternative B.

Cultural Resources

Alternative A and Alternative B would result in potentially significant impacts associated with disturbance of archaeological resources. While the potential for disturbance to unknown subsurface prehistoric or historic resources and human remains is considered low, mitigation is included that would reduce potential impacts to a less than significant level.

Development under the Vertical Mixed-Use Alternative would result in a smaller area of disturbance as well as potential disturbance to archaeological resources than Alternative A and Alternative B because this alternative would entail less grading and earthmoving activities that could potentially disturb unknown subsurface resources. Because site remediation, grading and earthwork would be needed, there is still a potential for disturbance. Mitigation measures would ensure the proper protocols are followed in the event any resources were found under Alternative

A, Alternative B, or the Vertical Mixed-Use Alternative thus the potential impacts of the Vertical Mixed-Use Alternative would be similar to those of Alternative A and Alternative B.

Visual Resources

Alternative A and Alternative B would result in potentially significant impacts to visual resources associated with loss of trees and changes in the visual character of the project site. Mitigation measures are identified to reduce these impacts to less than significant levels by identifying performance standards for project site landscaping to ensure that effective visual screening of the proposed development is provided.

The Vertical Mixed-Use Alternative would also result in alteration of the visual conditions at the project site by a mixture of residential, commercial, and office uses. The two- and three-story mixed use buildings would be similar heights and massing as the heights and massing of buildings under Alternative A and Alternative B. Further, as discussed in the Noise section for this alternative, it is possible that a noise attenuation barrier would be needed along the western project site boundary. This could result in an increase in visual impacts because visual screening would be more difficult to accomplish for a solid wall compared to a series of buildings. However, a portion of the ponderosa pine forest on top of the knoll near the center of the site and a portion of the McNab Cypress woodland in the northeastern and southeastern corners of the site would be retained. Overall, impacts to aesthetics under the Vertical Mixed-Use Alternative would be similar to those of Alternative A and Alternative B because less of the site would be developed and more trees would remain on site and visible from off-site locations but more of the built features may be visible from viewpoints to the west of the project site.

Transportation and Circulation

Alternative A would increase traffic in the project vicinity due to the introduction of commercial and residential land uses to the currently vacant project site. Implementation of mitigation measures would be necessary to reduce impacts to traffic and circulation in the vicinity, however one significant and unavoidable impact would remain due to the length of vehicle queues at the Dorsey Drive/SR 20/49 interchange. Alternative B would generate less traffic than Alternative A, but would also increase traffic in the project vicinity and require implementation of mitigation measures requiring the project applicant to provide a fair-share contribution to installation of traffic signals at a few intersections. All traffic impacts under Alternative B would be reduced to less-than-significant levels with implementation of mitigation.

The Vertical Mixed-Use Alternative would introduce a similar level of development to the project site. It would have more residential space and less commercial space than Alternative A, and would have less residential space and more commercial space than Alternative B. While this alternative would contribute traffic to the existing transportation and circulation network in the

project vicinity, the increase in PM peak hour traffic volumes would be reduced compared to Alternative A; commercial uses tend to generate higher PM peak hour traffic volumes than residential uses due to people shopping for goods and services during their evening commute. Similarly, the Vertical Mixed-Use Alternative would be expected to have slightly higher PM peak hour traffic volumes than Alternative B. With implementation of mitigation measures requiring the project applicant to contribute a fair share of funding towards necessary roadway improvements, it is expected that the traffic impacts of the Vertical Mixed-Use Alternative would be reduced to a less-than-significant level, thus impacts of the Vertical Mixed-Use Alternative would be similar to those of Alternative A and Alternative B.

Noise

Alternative A and Alternative B would result in potentially significant impacts associated with noise generated during project construction and operation. Mitigation measures are identified to ensure that noise exposure for residents of the project site and existing residents on adjacent parcels remain within the acceptable noise level range as established by the City of Grass Valley. The Vertical Mixed-Use Alternative would result in development of a similar development and would require similar amount of construction. With preservation of a portion of the ponderosa forest on the knoll near the center of the site and the McNab cypress woodland in the northeastern and southeastern corners of the site, construction and operational activities would generally occur further from existing residents than under Alternative A and Alternative B. Thus there would be a reduced potential for noise impacts to existing residents. However, this alternative would place more residential units closer to SR 20/49 than is proposed under Alternative A or Alternative B. Those units could be exposed to unacceptable noise levels, which could be mitigated with the construction of noise attenuation barriers. Therefore, the Vertical Mixed-Use Alternative would have similar noise impacts compared to Alternative A and Alternative B.

Air Quality

Alternative A and Alternative B would result in potentially significant air quality impacts during project construction and less than significant impacts during project operation. Implementation of mitigation measures would reduce the air pollutant emissions to a less than significant level. The Vertical Mixed-Use Alternative would require slightly less development on site than Alternative A and slightly more than Alternative B. Thus the Vertical Mixed-Use Alternative is expected to result in reduced air pollutant emissions during project operation compared to Alternative A and increase air pollutant emissions compared to Alternative B. However, impacts would be similar.

Climate Change

Alternative A and Alternative B would result in significant and unavoidable impacts related to GHG emissions during project operation. Implementation of mitigation measures would reduce the GHG

emissions, but emissions would remain significant and unavoidable. The Vertical Mixed-Use Alternative would involve less operational emissions than Alternative A but more operational emissions than Alternative B. It is expected that emissions would continue to exceed the recommended threshold of 1,100 metric tons CO_2E annually and the impact would remain significant and unavoidable.

Geology, Soils, Seismicity, and Paleontology

Alternative A and Alternative B would not expose future residents to risks due to earthquakes or unstable soils and impacts would be less than significant. Compliance with existing state and local regulations would ensure that substantial erosion or loss of topsoil would be less than significant. There is low potential for the site to support paleontological resources, disturbance of which would be a potentially significant impact. Mitigation is identified to reduce this impact to less than significant.

The Vertical Mixed-Use Alternative would involve the same site remediation activities as Alternative A and Alternative B but would disturb slightly less of the project site. Similar to Alternative A and Alternative B, there would be no significant impacts associated with risks to the public due to earthquakes or unstable soils and there would be no impacts to paleontological resources. Compliance with existing requirements would mitigate for potential impacts associated with construction-related erosion. Impacts of the Vertical Mixed-Use Alternative associated with geology, soils, seismicity, and paleontology would be similar to the impacts of Alternative A and Alternative B.

Hydrology and Water Quality

Alternative A and Alternative B would incorporate BMPs and meet NPDES permit requirements, and thus not result in any significant impacts to groundwater supply, increases in stormwater flows that could exceed capacity of stormwater infrastructure, or increases in sediment and erosion on local waterways during construction. All of these impacts were determined to be less than significant.

The Vertical Mixed-Use Alternative would develop a mixed-use project similar to Alternative A and Alternative B but with a smaller area of disturbance and would create less impervious surfaces than either Alternative A or Alternative B. Therefore, it would entail fewer impacts to hydrology and water quality related to an increase in stormwater, loss of groundwater, and adequacy of stormwater infrastructure. Therefore, impacts would be similar to but less than Alternative A and Alternative B.

Public Services and Utilities

Alternative A and Alternative B would have less than significant impacts related to existing public services including police, fire, solid waste disposal, emergency access, libraries, schools, and dry utilities. Alternative A and Alternative B would increase demand for these services and utilities but the demand would be consistent with the levels anticipated by the applicable service providers and impacts would remain less than significant.

The Vertical Mixed-Use Alternative would develop a similar mixed-use project, although it would entail slightly more residential units and less commercial retail space than Alternative A and somewhat less residential units and more commercial space than Alternative B. This alternative would therefore result in a similar overall demand for services and similar impacts to public services and utilities as compared to Alternative A and Alternative B.

Hazards and Hazardous Materials

Alternative A and Alternative B would result in less than significant impacts related to the use, transport, or handling of hazards and hazardous materials during project construction and operation. Impacts related to hazards and hazardous materials would be less than significant under Alternative A and Alternative B. The same site remediation required for Alternative A and Alternative B would occur under the Vertical Mixed-Use Alternative. This alternative would result in similar less-than-significant impacts related to hazards and hazardous materials as Alternative A and Alternative B.

Energy Consumption

Construction and operation of Alternative A and Alternative B would result in less-than-significant impacts associated with energy consumption. Because the Vertical Mixed-Use Alternative would entail a smaller construction footprint than Alternative A, it would result in similar but reduced construction-related impacts to energy consumption as Alternative A and Alternative B. This alternative would consume slightly less energy than Alternative A because it would entail slightly more residential units and slightly less commercial retail space, which would reduce the amount of vehicle trips and on-site electrical consumption at the project site. This alternative would consume approximately the same amount of energy as Alternative B because it would involve fewer residential units but more commercial space. However, energy efficiency of the buildings constructed on site would be the same as Alternative A and Alternative B, thus impacts related to energy consumption would be similar and would remain less than significant.

17.3.5 Alternative 4: Tiered Alternative

This Alternative would create a tiered project site, featuring three tiers separated by sloped grades to more closely match the natural grade of the site. It would develop 138,700 square feet of commercial retail space and 90 multi-family apartments. Smaller shops would be located on the northern and eastern portions, a larger anchor store would be developed on the southwestern side, and apartments would be developed on the southeastern portion. This alternative would preserve the hilltop from grading and development. Most of the existing easement for Spring Hill Drive would be used to connect Idaho Maryland Road to Dorsey Drive, but the connection to Dorsey Drive would be moved slightly west, as in Alternative A and Alternative B. This alternative would still require a General Plan Amendment to change the land use designation on the site from Business Park to Commercial and Residential Urban High Density and a rezone from Corporate Business Park to Commercial (C-2) and Multiple Dwelling Residential (R-3).

Land Use

Alternative A and Alternative B would alter the planned land uses of the project site. These changes would result in less than significant impacts related to land use and would not require implementation of mitigation measures.

The Tiered Alternative would develop a similar project, but with a smaller footprint and less commercial space. The development would be generally consistent and compatible with adjacent land uses. Impacts would remain less than significant and would be similar to those of Alternative A and Alternative B.

Population and Housing

Alternative A and Alternative B would not result in any significant impacts associated with the provision of housing nor would the project induce substantial growth elsewhere in the City.

The Tiered Alternative would develop a similar project, with the same residential component as Alternative A and fewer residential units than Alternative B. Alternative A and the Tiered Alternative would support approximately 184 residents, while Alternative B would support 349 residents. This level of population growth is consistent with the City of Grass Valley General Plan growth projections and impacts would remain less than significant. The Tiered Alternative would include up to 90 multi-family dwelling units, consistent with Alternative A. Thus this alternative would have a similar ability as Alternative A to contribute to achievement of the City's Housing Element goals but would have a reduced ability to contribute to achievement of the City's Housing Element goals compared to Alternative B.

Biological Resources

Alternative A and Alternative B would result in potentially significant impacts to biological resources associated with the loss of protected trees and possible disturbance to special status plant species and nesting birds. With implementation of mitigation measures, these impacts would be reduced to less than significant levels. Under the Tiered Alternative, only part of the project site would be developed. This would allow for an increase in the amount of open space and natural habitat retained, such as preservation of the hilltop and more of the Ponderosa pines, although loss of some trees would still occur. The Tiered Alternative would not allow for preservation of the McNab cypress woodland within the project site, similar to both Alternative A and Alternative B. It is anticipated that the loss of protected trees and possible disturbance to special status plant species and nesting birds would be reduced compared to Alternative A and Alternative B. Mitigation would still be implemented to reduce potential impacts to special status plant species and nesting birds to a less than significant level, as under Alternative A and Alternative B.

Overall, the Tiered Alternative would result in reduced impacts to biological resources compared to Alternative A and Alternative B. All impacts to biological resources under either Alternative A or this alternative would be reduced to less than significant with implementation of mitigation measures.

Cultural Resources

Alternative A and Alternative B would result in potentially significant impacts associated with disturbance of archaeological resources. While the potential for disturbance to unknown subsurface prehistoric or historic resources and human remains is considered low, mitigation is included that would reduce potential impacts to a less than significant level.

Development under the Tiered Alternative would result in a slightly smaller area of disturbance as well as potential disturbance to archaeological resources than Alternative A and Alternative B because this alternative would entail less grading and earthmoving activities that could potentially disturb unknown subsurface resources. Because site remediation, grading and earthwork would be needed, there is still a potential for disturbance. Mitigation measures would ensure the proper protocols are followed in the event any resources were found under Alternative A, Alternative B, or the Tiered Alternative thus the potential impacts of the Tiered Alternative would be similar to those of Alternative A and Alternative B.

Visual Resources

Alternative A and Alternative B would result in potentially significant impacts to visual resources associated with loss of trees and changes in the visual character of the project site. Mitigation measures are identified to reduce these impacts to less than significant levels by identifying performance standards for project site landscaping to ensure that effective visual screening of the proposed development is provided.

The Tiered Alternative would also result in alteration of the visual conditions at the project site by developing a mixture of residential, commercial retail, and office uses. The two- and three-story mixed use buildings would be similar heights and massing as the heights and massing of buildings under Alternative A and Alternative B. However, a portion of the ponderosa pine forest on top of the knoll near the center of the site would be retained. Additionally, the slopes in between the development tiers would offer more opportunities for landscaping and tree planting that would be visible from many of the key viewpoints and could help the site blend in more with the existing environment. Under the Tiered Alternative, impacts to aesthetics would be reduced compared to Alternative A and Alternative B because less of the site would be developed and more ponderosa pines would be retained.

Transportation and Circulation

Alternative A would increase traffic in the project vicinity due to the introduction of commercial and residential land uses to the currently vacant project site. Implementation of mitigation measures would reduce impacts to traffic and circulation in the vicinity, however a significant and unavoidable impact would remain under Alternative A due to the lengths of vehicle queues at the Dorsey Drive/SR 20/49 interchange. Alternative B would generate less traffic than Alternative A, but would also increase traffic in the project vicinity and require implementation of mitigation measures requiring the project applicant to provide a fair-share contribution to installation of traffic signals at a few intersections. All impacts under Alternative B would be reduced to less than significant levels.

The Tiered Alternative would introduce a similar level of development to the project site, with the same residential component but less commercial space than Alternative A and with less residential development and more commercial development than Alternative B. While this alternative would contribute traffic to the existing transportation and circulation network in the project vicinity, the increase in PM peak hour traffic volumes would be reduced compared to Alternative A because the amount of commercial space would be reduced. Similarly, the Tiered Alternative would be expected to have slightly higher PM peak hour traffic volumes than Alternative B. With implementation of mitigation measures requiring the project applicant to contribute a fair share of funding towards necessary roadway improvements, it is expected that the traffic impacts of the Tiered Alternative would be reduced to a less-than-significant level, thus impacts of the Tiered Alternative would be less than those of Alternative A and similar to those of Alternative B.

Noise

Alternative A would result in less-than-significant impacts associated with noise generated during project construction and operation. The Tiered Alternative would result in development of a similar project. Due to a smaller footprint and less grading and fill, this alternative is

anticipated to require a shorter construction timeframe than Alternative A, resulting in reduced noise generation from construction and the proposed land uses as well as from traffic. Additionally, slightly less commercial land uses would be expected to slightly decrease operational noise. Therefore, the Tiered Alternative would have similar but reduced noise impacts compared to Alternative A.

Alternative A and Alternative B would result in potentially significant impacts associated with noise generated during project construction and operation. Mitigation measures are identified to ensure that noise exposure for residents of the project site and existing residents on adjacent parcels remain within the acceptable noise level range as established by the City of Grass Valley. The Tiered Alternative would result in development of a similar development and would require similar amount of construction. With preservation of a portion of the ponderosa forest on the knoll near the center of the site, construction and operational activities would generally occur further from existing residents than under Alternative A and Alternative B. Thus there would be a reduced potential for noise impacts to existing residents. Therefore, the Tiered Alternative would have similar but slightly reduced noise impacts compared to Alternative A and Alternative B.

Air Quality

Alternative A and Alternative B would result in potentially significant air quality impacts during project construction and less than significant impacts during project operation. Implementation of mitigation measures would reduce the air pollutant emissions to a less than significant level. The Tiered Alternative would require slightly less development on site than Alternative A and slightly more than Alternative B, and would generate less traffic than Alternative A but more traffic than Alternative B. Thus the Tiered Alternative is expected to result in reduced air pollutant emissions during project operation compared to Alternative A and increased air pollutant emissions compared to Alternative B. However, impacts would be similar and would remain less than significant.

Climate Change

Alternative A and Alternative B would result in significant and unavoidable impacts related to GHG emissions during project operation. Implementation of mitigation measures would reduce the GHG emissions, but emissions would remain significant and unavoidable. The Tiered Alternative would involve less operational emissions than Alternative A but more operational emissions than Alternative B. Emissions would continue to exceed the recommended threshold of 1,100 metric tons CO_2E annually and the impact would remain significant and unavoidable.

Geology, Soils, Seismicity, and Paleontology

Alternative A and Alternative B would not expose future residents to risks due to earthquakes or unstable soils and impacts would be less than significant. Compliance with existing state

and local regulations would ensure that substantial erosion or loss of topsoil would be less than significant. There is low potential for the site to support paleontological resources, disturbance of which would be a potentially significant impact. Mitigation is identified to reduce this impact to less than significant.

The Tiered Alternative would involve the same site remediation activities as Alternative A and Alternative B but would disturb slightly less of the project site. Similar to Alternative A and Alternative B, there would be no significant impacts associated with risks to the public due to earthquakes or unstable soils and there would be no impacts to paleontological resources. Compliance with existing requirements would mitigate for potential impacts associated with construction-related erosion. Impacts of the Tiered Alternative associated with geology, soils, seismicity, and paleontology would be similar to the impacts of Alternative A and Alternative B.

Hydrology and Water Quality

Alternative A and Alternative B would incorporate BMPs and meet NPDES permit requirements, and thus not result in any significant impacts to groundwater supply, increases in stormwater flows that could exceed capacity of stormwater infrastructure, or increases in sediment and erosion on local waterways during construction. All of these impacts were determined to be less than significant.

The Tiered Alternative would develop a mixed-use project similar to Alternative A and Alternative B but with a smaller area of disturbance. Therefore, it would entail fewer impacts to hydrology and water quality related to an increase in stormwater, loss of groundwater, and adequacy of stormwater infrastructure because development would occur on a smaller footprint and would decrease impervious surfaces as compared to Alternative A and Alternative B. Therefore, impacts would be similar to but slightly reduced compared to Alternative A and Alternative B.

Public Services and Utilities

Alternative A and Alternative B would have less than significant impacts related to existing public services including police, fire, solid waste disposal, emergency access, libraries, schools, and dry utilities. Alternative A and Alternative B would increase demand for these services and utilities but the demand would be consistent with the levels anticipated by the applicable service providers and impacts would remain less than significant.

The Tiered Alternative would develop a similar mixed-use project, although it would entail less commercial retail space than Alternative A and somewhat less residential units and more commercial space than Alternative B. This alternative would therefore result in a similar overall demand for services and similar impacts to public services and utilities as compared to Alternative A and Alternative B.

Hazards and Hazardous Materials

Alternative A and Alternative B would result in less than significant impacts related to the use, transport, or handling of hazards and hazardous materials during project construction and operation. Impacts related to hazards and hazardous materials would be less than significant under Alternative A and Alternative B. The same site remediation required for Alternative A and Alternative B would occur under the Tiered Alternative. This alternative would result in similar less-than-significant impacts related to hazards and hazardous materials as Alternative A and Alternative B.

Energy Consumption

Construction and operation of Alternative A and Alternative B would result in less-than-significant impacts associated with energy consumption. Because the Tiered Alternative would entail a smaller construction footprint than Alternative A and Alternative B, it would result in similar but reduced construction-related impacts to energy consumption as Alternative A and Alternative B. This alternative would consume slightly less energy than Alternative A because it would entail the same number of residential units and slightly less commercial retail space, which would reduce the amount of vehicle trips and on-site electrical consumption at the project site. This alternative would consume approximately the same amount of energy as Alternative B because it would involve fewer residential units but more commercial space. However, energy efficiency of the buildings constructed on site would be the same as Alternative A and Alternative B, thus impacts related to energy consumption would be similar and would remain less than significant.

17.4 SUMMARY MATRIX

A matrix displaying the major characteristics and significant environmental effects of each alternative is provided in Table 17-1 to summarize the comparison of impacts for each alternative.

Table 17-1
Project Alternatives Impacts Summary

Environmental Issue	Alternative A	Alternative B	No Project/ No Build	No Project/Existing Designations	Reduced Development	Vertical Mixed Use	Tiered
Land Use	LTS	LTS	▼	—	—	—	—
Population and Housing	LTS	LTS	▲ (remains LTS)	—	—	—	— relative to Alt A ▼ relative to Alt B
Biological Resources	LTS	LTS	▼	—	▼	▼	▼
Cultural Resources	LTS	LTS	▼	—	—	—	—
Visual Resources	LTS	LTS	▼	—	▼	—	▼
Transportation and Circulation	LTS	LTS	▼	▼	▼	—	▼ relative to Alt A — relative to Alt B
Noise	LTS	LTS	▼	—	▼	—	▼
Air Quality	LTS	LTS	▼	▼	▼	▼	▼ relative to Alt A ▲ relative to Alt B
Climate Change	SU	SU	▼	▼ (remains SU)	▼ (remains SU)	▼ (remains SU)	▼ relative to Alt A ▲ relative to Alt B (remains SU)
Geology, Soils, Seismicity, and Paleontology	LTS	LTS	▼	—	—	—	—
Hydrology and Water Quality	LTS	LTS	▼	—	—	▼	▼
Public Services and Utilities	LTS	LTS	▼	—	▼	—	—
Hazards and Hazardous Materials	LTS	LTS	—	—	—	—	—
Energy Consumption	LTS	LTS	▼	—	—	—	—

▲ Alternative is likely to result in greater impacts to issue when compared to proposed project.
— Alternative is likely to result in similar impacts to issue when compared to proposed project.
▼ Alternative is likely to result in reduced impacts to issue when compared to proposed project.
LTS = Less than significant impact.
SU = Significant and unavoidable impact.

17.5 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

As shown in Table 17-1, the Reduced Development Alternative would provide for reductions in the severity of impacts associated with biological resources, visual resources, transportation, noise, air quality, and public services. However all of these impacts would remain less than significant under Alternative B while Alternative A would result in a single significant and unavoidable impact to transportation. Additionally, the Reduced Development Alternative would reduce the severity of impacts related to GHG emissions and climate change, but the impact would remain significant and unavoidable in all alternatives. Because the Reduced Development Alternative would reduce the severity of several impacts, this is the Environmentally Superior Alternative.

CHAPTER 18
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