DRAFT

ENVIRONMENTAL IMPACT REPORT

for the Hunter Subdivision Project

SCH no. 2018032014

Prepared for

City of St. Helena
Planning & Community Improvement Department
1572 Railroad Avenue
St. Helena, California 94574

Contact: Maya DeRosa,
Planning & Building Director
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Prepared by
DUDEK
1102 R Street
Sacramento, California 95811

SEPTEMBER 2021

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
AAQS	ambient air quality standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADU	accessory dwelling unit
AFY	acre-feet per year
amsl	above mean seal level
AP Act	Alquist–Priolo Earthquake Fault Zoning Act
APE	area of potential effects
ASTM	American Society of Testing and Materials
BAAQMD	Bay Area Air Quality Management District
BASMAA	Bay Area Stormwater Management Agencies Association
bgs	below ground surface
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CBC	California Building Code
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CH_4	methane
CHHSL	California Human Health Screening Level
CHRIS	California Historical Resources Information System
City	City of St. Helena
cm	centimeter
cmbs	centimeters below the surface
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent

Acronym/Abbreviation	Definition
County	County of Napa
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Rank
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FESA	federal Endangered Species Act
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Authority
GHG	greenhouse gas
GPR	ground-penetrating radar
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
GWP	global warming potential
HAP	hazardous air pollutant
HCFC	hydrochlorofluorocarbon
HDR	High-Density Residential
HFC	hydrofluorocarbon
HVAC	heating, ventilation, and air conditioning
ISTEA	Intermodal Surface Transportation Efficiency Act
kWh	kilowatt-hour
LE	Land Evaluation
LESA	Land Evaluation and Site Assessment
LOMR	Letter of Map Revision
m	meter
MBTA	Migratory Bird Treaty Act
MCE	Marin Clean Energy
MDR	Medium-Density Residential
MGD	million gallons per day
MMT	million metric tons

Acronym/Abbreviation	Definition
MS4	Municipal Separate Storm Sewer System
MT	metric ton
MWELO	Model Water Efficient Landscape Ordinance
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCFCWCD	Napa County Flood Control and Water Conservation District
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NOP	Notice of Preparation
NOx	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
O_3	ozone
OCP	organochlorine pesticide
PFC	perfluorocarbon
PG&E	Pacific Gas & Electric Company
PGA	peak ground acceleration
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
PPV	peak particle velocity
PRC	California Public Resources Code
Proposed Project	Hunter Subdivision Project
PSHA	probabilistic seismic hazard assessment
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practitioner
RCRA	Resource Conservation and Recovery Act
RFS	Renewable Fuel Standard
RMS	root mean square
ROG	reactive organic gas
RPS	Renewable Portfolio Standard
RWQCB	Regional Water Quality Control Board
SA	Site Assessment
SB	Senate Bill
SCS	Sustainable Communities Strategy
SDC	Seismic Design Category
SF_6	sulfur hexafluoride
SFBAAB	San Francisco Bay Area Air Basin
SFHA	Special Flood Hazard Area
SGMA	Sustainable Groundwater Management Act

Acronym/Abbreviation	Definition
SHFD	St. Helena Fire Department
SHPD	St. Helena Police Department
SHPO	State Historic Preservation Office
SHUSD	St. Helena Unified School District
SO_2	sulfur dioxide
SOx	sulfur oxides
SSMP	Sewer System Management Plan
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCR	tribal cultural resource
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USC	United States Code
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UVD	Upper Valley Disposal & Recycling
VdB	vibration decibel
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WDR	Waste Discharge Requirement
WQO	Water Quality Order
WRA	Wetland Research Associates
WTP	water treatment plant
WWTP	wastewater treatment plant
ZEV	zero emissions vehicle

EXECUTIVE SUMMARY

This chapter provides a summary of the Draft Environmental Impact Report (EIR) for the proposed Hunter Subdivision Project (Proposed Project). Included in this chapter are areas of known controversy and issues to be resolved, a summary of Proposed Project alternatives, a summary of all Proposed Project impacts and associated mitigation measures, and a statement of the ultimate level of significance after mitigation is applied.

ES.1 DOCUMENT PURPOSE

This EIR was prepared by the City of St. Helena (City), as lead agency, to inform decision makers and the public of the potential significant environmental effects associated with the Proposed Project. This EIR has been prepared in accordance with the California Environmental Quality Act (CEQA) of 1970 (California Public Resources Code, Section 21000 et seq.) and the Guidelines for Implementation of the California Environmental Quality Act (CEQA Guidelines; 14 CCR 15000 et seq.) published by the Public Resources Agency of the State of California.

This Draft EIR is a "project" EIR, pursuant to CEQA Guidelines Section 15161. A project EIR examines the environmental impacts of a specific project. Feasible mitigation measures are recommended, when applicable, that could reduce significant environmental impacts to a level of insignificance or avoid significant environmental impacts.

ES.2 PROJECT LOCATION

The 16.9-acre Project site (Assessor's Parcel Number is 009-030-057) is located in the northeast portion of the City, at the eastern terminus of Adams Street, three blocks east of downtown and State Route 29, and west of the Napa River (see Figure 2-1 in Chapter 2, Project Description). The Project site is generally rectangular with a "panhandle" extension that connects the site to Adams Street west of the panhandle (see Figure 2-2 in Chapter 2, Project Description).

ES.3 PROJECT DESCRIPTION

Project Background

The majority of the Project site was acquired by Dennis Hunter in 1997. Planning efforts were first initiated for development of the Project site in 2005 and an application was submitted to the City in September 2010 that included a request for a Tentative Map to subdivide the property for residential development. A completeness letter for the proposed subdivision was issued by the City on March 28, 2011. Since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. Nonetheless, this

EIR also evaluates consistency with the City's current "General Plan Update 2040"[1] for informational and consistency purposes.

The Proposed Project would consist of subdividing the 16.9-acre Project site to include 51 lots to accommodate single-family residences, a 3.4-acre parcel that would accommodate 25 attached residential units, a 0.06-acre parcel "A" that would not be developed, and a 0.04-acre parcel "B" for an existing agricultural well site.

The 25 attached units would be income restricted, with 5 units affordable to very low-income families, and 20 to moderate income families. The 51 lots would be developed with single-family market-rate housing units (one dwelling per lot). The Proposed Project applicant has proposed accessory dwelling units on 11 of the single-family lots, designated for above-moderate income groups. The City's Zoning Ordinance (Municipal Code Section 17.116.030) and state law provides for the construction of an accessory dwelling unit on any lot which is zoned for residential use and has an existing single-family residence. The 87 residential units (including single-family, multi-family and accessory dwelling units) would have an average density of 5.1 dwelling units per acre.

Project Objectives

Proposed Project objectives allow for the analysis of reasonable alternatives to the Proposed Project. Reasonable alternatives must be analyzed in accordance with Section 15126.6 of the CEQA Guidelines.

The Proposed Project objectives are as follows:

- Subdivide the site consistent with the City's General Plan and Zoning for the site to accommodate residential development.
- Provide opportunities to develop a variety of housing types, including multi-family, single-family, and accessory dwelling units, affordable to a range of incomes including, very low, low and moderate-income households.
- Provide opportunities to contribute to the provision of workforce and affordable housing consistent with the City's adopted Housing Element and the Regional Housing Needs Assessment (RHNA) approved by the Association of Bay Area Governments (ABAG).
- Minimize traffic-related environmental impacts, such as noise, air quality and greenhouse gases by lowering commute patterns for St. Helena workers by providing more local housing opportunities.

[1] For consistency, this EIR refers to the "General Plan Update 2040" as the "2019 General Plan," reflecting the year it was adopted (as with the "1973 General Plan" and the "1993 General Plan").

- Support alternative transportation by providing a pedestrian and bicycle linkage through St. Helena, eventually connecting the regional Vine Trail from Calistoga to the Vallejo Ferry.
- Exceed the City's green building ordinance (Municipal Code Chapter 15.53) and incorporate sustainable design features including water conservation measures, drought resistant landscaping with low flow watering systems, south and west side tree placement to reduce reliance on air conditioning units, and pre-wiring for photovoltaic systems.
- Implement the General Plan Circulation Element by completing the planned extension of Starr Avenue and the partial planned extension of Adams Street from where Adams Street terminates to connect to the Project site.
- Minimize City water use by continuing the use of an existing on-site water well for irrigation of Proposed Project landscaped areas.

ES.4 AREAS OF CONTROVERSY/ISSUES TO BE RESOLVED

Section 15123(b) (2) of the CEQA Guidelines requires that areas of controversy known to the lead agency must be stated in the executive summary prepared as part of the EIR. Section 15123(b)(3) of the Guidelines requires that an EIR identify issues to be resolved; this includes the choice among alternatives and whether or how to mitigate significant impacts. Issues of interest to the public and public agencies were identified during the 30-day public comment period for the Notice of Preparation that was circulated from March 6, 2018 through April 9, 2018.

Concerns raised from public agencies and the public include impacts to the property from potential flooding, traffic and circulation impacts, increased water demand, and impacts to cultural resources. All of these concerns are addressed in this EIR.

The Notice of Preparation and comment letters received during the Notice of Preparation review period are included in Appendix A of this EIR.

ES.5 EFFECTS FOUND TO BE LESS THAN SIGNIFICANT

Due to certain aspects of the Proposed Project, characteristics, or existing regulatory requirements, the Proposed Project is not anticipated to have significant impacts regarding wildfire. The following provides an overview of why the effects associated with this issue area was found this be less than significant and therefore not further analyzed in further in Chapter 3 of this Draft EIR.

Wildfire

The Proposed Project is not located in a Very High Fire Hazard Severity Zone (VHFHSZ) as designated by the California Department of Forestry and Fire Protection (CAL FIRE). The

Project site is located in a non-VHFHSZ within a Local Responsibility Area, with the closest VHFHSZ in a State Responsibility Area approximately 1 mile to the northeast (CAL FIRE 2008). Between the Project site and the VHFHSZ is the Napa River.

Starting in August 2020 there were a number of wildfires including the LNU Lightning Complex Fire and the Glass Fire that burned large areas of Napa County including a small portion of the Project site. Based on the current CAL FIRE maps the Project site is not located within a State Responsibility Area and is not designated as a VHFHSZ. Emergency access and the potential for the Proposed Project to expose people or structures to loss, injury or death involving wildland fires is addressed in Section 3.8, Hazards and Hazardous Materials. Adequate emergency access is addressed in Section 3.8 and Section 3.14, Transportation. The Project site is flat so fire hazards due to proximity to hilly terrain or landslides due to post-fire conditions would not be a concern. In addition, the Proposed Project does not require installation of infrastructure that could exacerbate fire risk. Because the Project site is not located within a VHFHSZ and future development is not anticipated to have significant impacts due to wildfire this topic is not further analyzed in this document.

ES.6 SUMMARY OF ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

Table ES-1, Summary of Environmental Impacts and Mitigation Measures, provides a summary of the impact analysis and a summary of environmental impacts resulting from implementation of the Proposed Project pursuant to CEQA Guidelines Section 15123(b)(1). For a more detailed discussion of Proposed Project impacts, please see Chapter 3 of this EIR. Table ES-1 also lists the level of significance of an impact prior to mitigation and lists all applicable mitigation measures identified for significant impacts, as well as providing the level of significance after mitigation.

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.1 Aesthetics/Visual Resources			
3.1-1: Would the project have a substantial adverse effect on a scenic vista? This would be a less-than-significant impact.	LTS	None required.	LTS
3.1-2: Would the project conflict with applicable regulations governing scenic quality or substantially degrade the existing visual character or quality of public views of the site and its surroundings? This would be a less-than-significant impact.	LTS	None required.	LTS
3.1-3: Would the project potentially create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? This would be a potentially significant impact.	PS	**AES-1:** To minimize spillover light while ensuring adequate nighttime security, the Project applicant shall prepare lighting design guidelines for the Project to be reviewed and approved by the City as part of the Design Review process. The lighting design guidelines shall include a lighting plan noting fixtures and lumens, and standards such as, lighting is to be shielded and downward focused to reduce glare and spillover light, up cast decorative lighting shall be limited to minimize effects on wildlife and to retain the rural ambience of the area, and the use of mirrored glass shall not be permitted. The lighting guidelines shall conform with Lighting Zone 2 of Title 24, Part 6, of the California Code of Regulations. The guidelines and lighting plan shall be approved as part of the Design Review application.	LTS
3.1-4: Would the proposed project contribute to cumulative changes in the existing visual character or conflict with applicable regulations governing scenic quality? The project's contribution would not be considerable.	LTS	None required.	LTS
3.1-5: Would the proposed project contribute to a cumulative increase in light and glare? The project's contribution would not be considerable with mitigation.	PS	See Mitigation Measure AES-1. Mitigation Measure AES-1 mitigates this impact and no additional mitigation is required.	LTS
3.2 Agriculture and Forestry Resources			
3.2-1: Would the project convert Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? This is a less-than-significant impact.	LTS	None required.	LTS
3.2-2: Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use? This is a less-than-significant impact.	LTS	None required.	LTS
3.2-3: Would the proposed project contribute to cumulative impacts associated with the loss or conversion of existing agricultural resources? The project would result in a less than considerable contribution.	LTS	None required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.3 Air Quality			
3.3-1: Would implementation of the proposed project conflict with or obstruct implementation of the applicable air quality plan? This is a less-than-significant impact.	LTS	None required.	LTS
3.3-2: Would implementation of the proposed project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? This is a less-than-significant impact.	LTS	None required.	LTS
3.3-3: Would implementation of the proposed project expose sensitive receptors to substantial pollutant concentrations? This is a less-than-significant impact.	LTS	None required.	LTS
3.3-4: Would the proposed project contribute to cumulative air quality emissions within the existing area? The contribution would not be considerable.	LTS	None required.	LTS
3.4 Biological Resources			
3.4-1: Would the proposed project have a substantial adverse effect, either directly or through habitat modifications, on 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? This would be a significant impact.	PS	**BIO-1:** A qualified biologist shall conduct a habitat assessment for bats in trees adjacent to the Project site within 2 weeks prior to any Project construction (site clearing, grading). The habitat assessment shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the Project site and 50 feet around these areas. Potential roosting features found during the survey shall be mapped and described in a survey letter report. If roosting bats (individuals or colonies) are detected within the Project site, California Department of Fish and Wildlife shall be notified as soon as possible prior to any construction activity to confirm the bats can be avoided during construction. If a bat roosting or maternity colony cannot be completely avoided, a qualified biologist shall prepare a bat mitigation and monitoring plan for California Department of Fish and Wildlife review and approval, and that plan shall be implemented prior to commencement of construction that could impact the roosting bats or maternity colony. **BIO-2:** If construction activities are scheduled to occur during the breeding season for birds (February 1 through August 31), the Project applicant or their contractor shall implement the following measures to avoid potential adverse effects to nesting raptors and other nesting birds: • Preconstruction surveys by a biologist of all potential nesting habitats within 500-feet of construction activities, where accessible, shall be conducted by a qualified biologist. Surveys shall occur no more than 14 days prior to the initiation of site disturbance. If construction is stopped for 14 days or more during the breeding season, a new preconstruction nesting bird survey must be conducted before work can be restarted to ensure no new nesting has occurred in the interim. • If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required, following submittal of a survey report letter to the City of St. Helena Planning Department. • If active nests are found during preconstruction surveys, a no-disturbance buffer shall be created around active nests during the breeding season or until it is determined by the biologist that all the young have fledged. The buffers shall be established by the biologist in conjunction with the California Department of Fish and Wildlife. Typical buffers may include 500 feet for raptors and 50 to 250 feet for other bird species based on the location of the nest, the nesting species present, and types of construction activities that may cause potential nest abandonment. The perimeter of the buffer zone shall be fenced or marked with staked flagging. See Mitigation Measure AES-1. Mitigation Measure AES-1, which addresses spillover light that can affect some species mitigates this impact and no additional mitigation is required.	LTS
3.4-2: Would the proposed project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means? This would be a significant impact.	PS	**BIO-3:** Wetland permits (e.g., 404 Nationwide Permit, 401 Water Quality Certification, and 1602 Streambed Alteration Agreement, respectively) shall be obtained prior to any grading work. Prior to issuance of a grading permit, the Project applicant shall demonstrate authorization from the Army Corp of Engineers and any other regulatory agency to alter the wetland.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.4-3: Would the proposed project 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? This would be a potentially significant impact.	PS	See Mitigation Measures AES-1, BIO-1 and BIO-2. Mitigation Measures AES-1, BIO-1 and BIO-2 mitigate this impact and no additional mitigation is required. BIO-1 (requires preconstruction habitat assessment and avoidance of roosting bats), BIO-2 (requires preconstruction surveys and avoidance of nesting birds), and AES-1 addresses spillover light that can affect some species.	LTS
3.4-4: Would the proposed project contribute to cumulative impacts with respect to biological resources? The project's contribution would not be considerable.	LTS	None required.	LTS
3.5 Cultural and Tribal Cultural Resources			
3.5-1: Would the project cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5? This would be a significant impact.	PS	**CUL-1**: The City shall require that an archaeological monitor is present during all ground-disturbing activities with the potential to impact previously identified cultural resources or to encounter unanticipated cultural deposits including tribal cultural resources. The determination for a Native American monitor to be present shall be made by the City, in consultation with the appropriate Native American tribe prior to the initiation of ground disturbing activities. In addition, prior to the initiation of ground-disturbing work, construction crews shall be made aware of the potential to encounter cultural resources and the requirement for cultural monitors to be present during these activities. Areas observed to have potential to contain yet-identified subsurface cultural material or deposits are located throughout the Project site, but primarily would be in the western portion of the site where the existing vineyard is located. It is anticipated resources would not be present at depths of more than 10 feet below the surface. Archaeological and Native American monitoring may be adjusted at the recommendation of the qualified archaeological principal investigator, meeting the Secretary of the Interior Professional Qualifications for Archaeology, and in consultation with the City, based on inspection of exposed subsurface soils and their observed potential to contain intact cultural deposits or material. The archaeological and tribal monitors shall be provided a copy of technical reports prepared for the project and pertinent appendices to inform their monitoring efforts. The archaeological and tribal monitors shall have the authority to temporarily halt work to inspect areas as needed for potential cultural material or deposits. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities, all construction work occurring within 100 feet of the find shall immediately stop until the qualified archaeological principal investigator, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find and determine whether or not additional study is warranted, in consultation with the Tribe. Should it be determined by the Tribe and the archeologist, temporary flagging may be installed around this resource in order to avoid any disturbances from construction equipment. As approved by the City in consultation with the Tribe, this buffer may be adjusted by the Tribe and the archaeological principal investigator to a distance that maintains a protective perimeter around the unanticipated resource, while still allowing for construction to continue in the surrounding area.	LTS
3.5-2: Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5? This would be a potentially significant impact.	PS	See Mitigation Measure CUL-1. Mitigation Measure CUL-1 mitigates this impact and no additional mitigation is required.	LTS
3.5-3: Would the project disturb human remains, including those interred outside of formal cemeteries? This would be a less-than-significant impact.	PS	**CUL-2:** In the event any human remains are unearthed during site disturbing activities, Section 7050.5(b) of the California Health and Safety Code and Section 15064.5(e) of the CEQA Guidelines specifies protocols to follow in the event human remains are discovered. The Code mandates stopping work within 100 feet of the find and contacting the County Coroner to determine the origin of the remains. If the remains are determined to be Native American the Coroner shall contact the Native American Heritage Commission within 24 hours to request that the Commission determine the person or persons it believes to be descended from the deceased Native American. The most likely descendant shall be provided with the opportunity to make recommendations regarding the means of treating or disposing of the remains with appropriate dignity. Project-related ground disturbance in the vicinity of the find shall not resume until all statutory requirements have been met and evidence of completion has been submitted to the City, in consultation with the Tribe.	LTS
3.5-4: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined	PS	See Mitigation Measure CUL-1. Mitigation Measure CUL-1 mitigates this impact and no additional mitigation is required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
by the lead agency to be significant? This impact is considered potentially significant.			
3.5-5: Would the proposed project contribute to cumulative impacts to cultural resources, including historical and archeological resources as defined in CEQA Guidelines Section 15064.5 and human remains? This impact is considered potentially significant.	PS	See Mitigation Measure CUL-1. Mitigation Measure CUL-1 mitigates this impact and no additional mitigation is required.	LTS
3.5-6: Would the proposed project contribute to cumulative impacts to tribal cultural resources, currently listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined by the lead agency to be significant? This impact is considered potentially significant.	PS	See Mitigation Measure CUL-1. Mitigation Measure CUL-1 mitigates this impact and no additional mitigation is required.	LTS
3.6 Geology and Soils			
3.6-1: Would implementation of the proposed project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and/or liquefaction? This would be a potentially significant impact.	PS	**GEO-1**: Prior to the issuance of any site-specific grading or building permits, the Project applicant shall have a design-level geotechnical report prepared and submitted to the City of St. Helena Building Department for review and approval in accordance with adopted City standards. The structural designs shall adhere to the currently adopted version of the California Building Code. The report shall identify specific site preparation methods, grading practices, foundation designs, and other recommendations appropriate for minimizing damage from weak soils, expansive soils, differential settlement, and seismic hazards, including liquefaction. Specifically, the following requirements for the geotechnical and soils report shall be met: • Analysis presented in the geotechnical report shall conduct a detailed evaluation of liquefaction in accordance with California Department of Conservation Special Publication 117A: *Guidelines for Evaluating and Mitigating Seismic Hazards in California*. • Additional subsurface soil borings shall be completed as necessary to represent the full range of site conditions, including the southern portion of the parcel mapped as alluvial fan. • Analysis presented in the geotechnical report shall include recommendations for building foundations and improvements, including sidewalks, parking lots, and subsurface utilities, that take into consideration the potential effects of settlement, collapse, and expansive or corrosive soils. This includes the recommendation to over excavate to an average depth of 4.5 feet (and up to 10 feet in the location of the former pond) due to anticipated settlement. • All design criteria and specifications set forth in the design-level geotechnical report shall be implemented as a condition of project approval. This report shall be completed as a condition of approval of the final tentative map.	LTS
3.6-2: Would implementation of the proposed project occur on weak, compressible, and/or expansive soils that could result in adverse impacts on habitable structures? This would be a less-than-significant impact.	PS	See Mitigation Measure GEO-1. Mitigation Measure GEO-1 mitigates this impact and no additional mitigation is required.	LTS
3.6-3: Would implementation of the proposed project directly or indirectly destroy a unique paleontological resource or site? This would be a potentially significant impact.	PS	**GEO-2:** In the event that known or suspected paleontological resources (e.g., fossils) are unearthed during grading or trenching, the area of discovery shall be roped off by the construction contractor to include a 50-foot radius buffer and remain off-limits until cleared by a qualified paleontologist. The Project applicant shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines, who shall be tasked with assessing the significance of the fossil find, including documenting the nature, location, and taxa of the find. The qualified paleontologist shall use his/her professional judgement as to the significance of the find, and whether the find should be preserved in a museum repository. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. Documentation of the fossil find, including appropriate salvage and recovery of fossil specimens and of transfer of to an appropriate repository (e.g., University of California Museum of Paleontology) shall be submitted to the City of St. Helena as evidence of compliance with this mitigation measure.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.6-4: Would the proposed project contribute to cumulative impacts related to geologic or seismic hazards? This would be a less than considerable contribution.	LTS	None required.	LTS
3.7 Greenhouse Gas Emissions			
3.7-1: Would implementation of the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? This would be a less-than-significant impact.	LTS	None required.	LTS
3.7-2: Would implementation of the proposed project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? This would be a less-than-significant impact.	LTS	None required.	LTS
3.7-3: Would the proposed project contribute to cumulative GHG emissions within the region? The project's contribution would not be considerable.	LTS	None required.	LTS
3.8 Hazards and Hazardous Materials			
3.8-1: Would implementation of the proposed project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? This would be a less-than-significant impact.	LTS	None required	LTS
3.8-2: Would implementation of the proposed project 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? This would be a potentially significant impact.	PS	**HAZ-1:** As a condition of approval for construction and grading permits for the Project site, the Project applicant shall the ensure following subsurface soils testing and follow-up analysis shall be performed prior to obtaining a grading permit: • A soils testing work plan shall be developed in accordance with DTSC's Interim Guidance for Sampling Agricultural Properties (DTSC 2008) by an appropriately licensed individual (i.e., professional geologist, environmental engineer, or similar qualification) for the portions of the Project site historically used for agriculture. Special consideration shall be given to targeting site soils that are representative of historic agricultural use, and to avoid sampling recent fill material placed during levee construction. Prior to carrying out soils testing, the work plan shall be submitted to the Napa County Division of Environmental Health (as the Certified Unified Program Agency for all cities and areas of Napa County) and the City of St. Helena for review and approval. • The number of soil samples, sampling methods, compounds tested, background samples (if applicable), and laboratory analyses shall be completed in accordance with DTSC's Interim Guidance. Should analytical results exceed naturally occurring concentrations or applicable CHHSLs, the health risks of such a condition shall be evaluated in human health risk assessment as described in DTSC standards and guidance (e.g., preliminary endangerment assessment guidance manual). • The risk assessment shall describe measures that must be implemented to ensure potential health risks to construction workers, site residents, and the general public as a result of hazardous materials are reduced to a cumulative risk of less than one in one million for carcinogens and a cumulative hazard index of 1 for non-carcinogens, or as required by the Napa County Division of Environmental Health acting as the Certified Unified Program Agency and/or DTSC oversight. In the event human health risk assessment shows elevated chemical concentrations pose a risk to human health or the environment, the risks shall be eliminated or substantially reduced by removal (e.g., excavation of soils and off-site disposal) or remediation of contaminated soils, and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include use of a construction risk management plan, use of hardscape to cap problem areas, importation of clean soil in landscaped	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
		area to eliminate exposure pathways, and/or deed restrictions. If IC/EC are implemented, an Operations and Maintenance Program shall be prepared and implemented to ensure that the measures adopted are maintained throughout the life of the Project. The soil testing report, and if applicable, the human health risk assessment and Operations and Maintenance Program, shall be subject to review and approval by the City of St. Helena Department of Public Works, the Napa County Division of Environmental Health and/or other regulatory oversight agencies.	
3.8-3: Would implementation of the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? This would be a less-than-significant impact.	LTS	None required.	LTS
3.8-4: Would implementation of the proposed project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? This would be a less-than-significant impact.	LTS	None required.	LTS
3.8-5: Would implementation of the proposed project contribute to a cumulative increase in the potential exposure of people to sites where soil contamination could be present from past or current uses, or to hazards associated with the use and transport of hazardous materials? The project's contribution would be less than considerable.	LTS	None required.	LTS
3.9 Hydrology and Water Quality			
3.9-1: Would implementation of the proposed project violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality? This would be a less-than-significant impact.	LTS	None required.	LTS
3.9-2: Would implementation of the proposed project deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? This would be a less-than-significant impact.	LTS	None required.	LTS
3.9-3: Would implementation of the proposed project substantially alter the existing drainage pattern of the site or area through the addition of impervious surfaces resulting in erosion or siltation on- or off-site; increasing the rate or amount of surface runoff resulting in flooding on- or off-site; contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or	LTS	None required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
provide polluted runoff; or impede or redirect flood flows? This would be a less-than-significant impact.			
3.9-4: Would implementation of the proposed project release pollutants during flooding? This would be a less-than-significant impact.	LTS	None required.	LTS
3.9-5: Would implementation of the proposed project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? This would be a less-than-significant impact.	LTS	None required.	LTS
3.10 Land Use			
3.10-1: Would implementation of the proposed project conflict with the City's 1993 General Plan policies or other regulations adopted for the purpose of avoiding or mitigating an environmental effect? This would be a less-than-significant impact.	LTS	None required.	LTS
3.11 Noise and Vibration			
3.11-1: Would short-term construction noise levels cause a substantial temporary increase in ambient noise levels? This would be a potentially significant impact.	PS	**NOI-1:** The Project applicant or its contractors shall implement the following for onsite noise control and sound abatement means that, in aggregate, would yield sufficient construction noise reduction during the site preparation, grading/excavation, and building construction phases of the Project to ensure compliance with the FTA-based guidance standard of 90 dBA hourly Leq at or beyond the property lines of the nearest residences, as noted. *Administrative Controls* – At all times during site preparation and construction: • Comply with Chapter 8.24 of the Municipal Code with respect to allowable construction periods, • Minimize idling time of onsite equipment, and • Either locate onsite stationary construction equipment (such as generators or air compressors) as far from adjacent residential property boundaries as is feasible, or place this equipment inside an approved noise-attenuating casing (e.g., sound-attenuated air intakes and heat vents, exhaust mufflers, etc.), or place this equipment indoors. *Engineering Controls* – All mobile and stationary construction equipment employing an internal combustion engine shall be equipped with suitable exhaust and intake silencers which are in good working order; and *Install Sound Abatement* – During site preparation and construction which involves the operation of more than two pieces of heavy equipment (dozer, backhoe, front-end loader, crane, tractor, etc.) for at least one hour and when operating within 25 feet of the exterior of a residence (either offsite or onsite), do the following: • Erect a temporary barrier (i.e., plywood sheet) or install sound blankets (or comparable temporary solid barriers) on the Project's construction fencing, or • Locate sound path intervening containers or trailers onsite to block direct line-of-sight between residences and the operating heavy equipment.	LTS
3.11-2: Would existing residential areas be exposed to vibration peak-particle velocities greater than 0.2-inch per second or vibration levels greater than 80 VdB due to project construction? This would be a less-than-significant impact.	LTS	None required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.11-3: Would on-site operation noise from the proposed residences result in noise exposure levels that would impact adjacent residences? The impact would be less than significant.	LTS	None required.	LTS
3.11-4: Would the proposed project vehicle trips result in off-site roadway noise level increases that could impact noise sensitive land uses located along such roadways? The impact would be less than significant.	LTS	None required.	LTS
3.11-5: Would the proposed project, in addition to cumulative development in the City, increase traffic noise that exceeds the City's noise standards? The project's contribution would not be considerable.	LTS	None required.	LTS
3.12 Public Services and Recreation			
3.12-1: Would the proposed project increase demand for public services requiring the need to construct new facilities, or expand existing facilities, the construction of which could cause significant environmental impacts? This would be a less-than-significant impact.	LTS	None required.	LTS
3.12-2: Would the proposed project increase the use of existing neighborhood parks or other recreational services such that a substantial physical deterioration of the facility would occur, or require the construction or expansion of facilities that could have a physical adverse effect on the environment? This would be a less-than-significant impact.	LTS	None required.	LTS
3.12-3: Would the proposed project contribute to a cumulative increase in demand for public services, schools, and recreation facilities? The project's contribution would not be considerable.	LTS	None required.	LTS
3.13 Utilities			
3.13-1: Would the proposed project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities? This is a less-than-significant impact.	LTS	None required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.13-2: Would the proposed project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years? This is a less-than-significant impact.	LTS	None required.	LTS
3.13-3: Would the proposed project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? This is a less-than-significant impact.	LTS	None required.	LTS
3.13-4: Would the proposed project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? This is a less-than-significant impact.	LTS	None required.	LTS
3.13-5: Would the proposed project comply with federal, state, and local statutes and regulations related to solid waste? This is a less-than-significant impact.	LTS	None required.	LTS
3.13-6: Would the proposed project contribute to an increase in demand for water supply, wastewater treatment, stormwater or solid waste? The project's contribution would not be considerable.	LTS	None required.	LTS
3.14 Transportation and Traffic			
3.14-1: Would the proposed project conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? This would be a less-than-significant impact.	LTS	None required.	LTS
3.14-2: Would the proposed project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? This is a significant impact.	SU	None available.	SU
3.14-3: Would the proposed project increase hazards due to a geometric design feature or incompatible use? This is a less-than-significant impact.	LTS	None required.	LTS

Table ES-1
Summary of Environmental Impacts and Mitigation Measures

Environmental Impact	Impact Before Mitigation	Mitigation Measure(s)	Level of Significance After Mitigation
3.14-4: Would the proposed project result in inadequate emergency access. This is a less-than-significant impact.	LTS	None required.	LTS
3.14-5: Under Cumulative conditions, would the proposed project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? This is considered a significant impact.	SU	None available.	SU
3.15 Energy			
3.15-1: Would implementation of the proposed project result in wasteful, inefficient or unnecessary consumption of energy resources during construction or operation? This would be a less-than-significant impact.	LTS	None required.	LTS
3.15-2: Would implementation of the proposed project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? This would be a less-than-significant impact.	LTS	None required.	LTS
3.15-3: Would the proposed project contribute to an increase in wasteful, inefficient or unnecessary consumption of energy resources during construction or operation? The project's contribution would not be considerable.	LTS	None required.	LTS

PS= Potentially Significant SU = Significant and Unavoidable LTS = Less than Significant NI= No Impact

ES.7 SUMMARY OF PROJECT ALTERNATIVES

Section 15126.6 of the CEQA Guidelines identifies the parameters within which consideration and discussion of alternatives to a project should occur. As stated in this section of the CEQA Guidelines, alternatives must focus on those that are reasonably feasible and that attain most of the basic objectives of the project. Each alternative should be capable of avoiding or substantially lessening any significant effects of that project. The rationale for selecting the alternatives to be evaluated and a discussion of the No Project Alternative are also required, per Section 15126.6.

Alternatives Evaluated

This EIR includes an evaluation of the following alternatives:

- Alternative 1 – No Project/No Development
- Alternative 2 – No Project/General Plan
- Alternative 3 – Park/Open Space Preserve
- Alternative 4 – Increased Density/Affordable Housing

Alternative 1 – No Project/No Development

The No Project Alternative assumes that the Proposed Project would not be developed and the current undeveloped Project site would remain and not be altered.

Given the development assumptions of the 1975 General Plan, the 1993 General Plan and the 2019 General Plan, all of which assumed residential development on the project site, it is unlikely that this site would remain undeveloped. The Project site is designated as Medium Density Residential (MDR) in both the 1993 General Plan and the 2019 General Plan. According to the 1993 General Plan, the Medium Density Residential (MDR) designation provides for single-family detached and attached homes, secondary residential units, public and semi-public uses, and similar and compatible uses. Although the No Project Alternative would not meet the objectives identified for the Proposed Project and those development assumptions in the General Plans, CEQA requires an alternative that forgoes the project be analyzed.

Alternative 2 – No Project/General Plan

Under this alternative, it is assumed the Project would be developed consistent with the underlying MDR land use designation and MR zoning which allows development of the Project site with residential uses up to a maximum density of 12 dwelling units/acre (du/ac) under the

1993 General Plan MDR designation which was revised to 16 du/ac under the 2019 General Plan consistent with the MR zoning, which permits a maximum density of 16 du/ac.

For the purposes of this alternative a density of 9 du/ac was assumed for a total of 152 single-family residential units. Based on the number of units this alternative would result in a population of 372 residents, an increase of 159 residents as compared to the Project.

It is assumed Starr Avenue and Adams Street would both be extended to connect to the Project site and the street and lot layout would be very similar to the Project with the exception of the 3.4-acre portion of the site currently designated for multifamily units (Lot 52). This portion of the Project site would be configured to accommodate single-family residences.

Alternative 3 – Park/Open Space Preserve

This alternative includes a 1-acre park that would preserve a majority of the on-site wetlands. Although three lots would need to be removed to accommodate the 1-acre park, this alternative would include approximately the same number of units as the Proposed Project, including the 25 affordable housing units. It is assumed up to 11 Accessory Dwelling units could still be constructed on the larger lots.

Alternative 4 – Increased Density/Affordable Housing

The Increased Density/Affordable Housing Alternative includes the approximately 1-acre park to preserve a majority of the on-site seasonal wetlands with the remaining approximately 16-acres designated for up to 180 affordable housing units, assuming a density of 11.3 dwelling units per acre (du/ac) under the existing Medium Density Residential (MDR) land use designation (current zoning allows for a maximum density of 16.0 du/ac). The units would be attached housing (duplex or triplex) and would be 100% affordable. It is assumed buildings would be no taller than 30-feet, consistent with the underlying MR zoning.

Environmentally Superior Alternative

Table ES-2, Comparison of Impacts of the Alternatives, provides a summary of the alternatives impact analysis considered in the EIR and identifies the areas of potential environmental effects per CEQA, and ranks each alternative as better, the same, or worse than the Proposed Project with respect to each issue area.

Table ES-2
Comparison of Impacts of Project Alternatives

Environmental Issue Area	Proposed Project	Alternative 1 No Project/ No Development	Alternative 2 No Project/ General Plan	Alternative 3 Park/Open Space Preserve	Alternative 4 Increased Density/ Affordable Housing
Aesthetics/Visual Resources	**LTS/MM**	▼	—	—	—
Agriculture and Forestry Resources	**LTS**	▼	—	—	—
Air Quality	**LTS**	▼	—	Δ	Δ
Biological Resources	**LTS/MM**	▼	▼	▼	▼
Cultural Resources	**LTS/MM**	▼	—	—	—
Geology and Soils	**LTS/MM**	▼	—	—	—
Greenhouse Gas Emissions	**LTS**	▼	—	Δ	Δ
Hazards and Hazardous Materials	**LTS**	▼	—	—	—
Hydrology and Water Quality	**LTS**	▼	—	—	—
Land Use	**LTS**	▼	—	—	—
Noise and Vibration	**LTS/MM**	▼	—	Δ	Δ
Public Services and Recreation	**LS**	▼	Δ	—	Δ
Utilities	**LTS**	▼	—	Δ	Δ
Traffic and Circulation	**SU**	▼	—	▼	▼
Energy	**LTS**	▼	—	Δ	Δ

Δ Alternative is likely to result an increase in severity of the impact when compared to Proposed Project.
— Alternative is likely to result in similar impacts when compared to Proposed Project.
▼ Alternative is likely to result in reduced impacts when compared to Proposed Project.
LTS/MM = Less than significant impact with mitigation, LTS = Less than significant impact, SU=Significant and Unavoidable

As indicated in Table ES-2, Alternative 1, the No Project/No Development Alternative would result in the fewest environmental impacts, and subsequently would be considered the environmentally superior alternative. However, Section 15126.6(e)(2) of the CEQA Guidelines states that if the environmentally superior alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.

Of the alternatives evaluated above, Alternative 2, the Park Preserve alternative is the environmentally superior alternative.

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CHAPTER 1
INTRODUCTION AND SCOPE OF THE EIR

1.0 PURPOSE AND INTENDED USE OF THIS EIR

The City of St. Helena (City) has prepared this Draft Environmental Impact Report (EIR) to inform the general public, the local community, responsible agencies, trustee agencies, and other interested public agencies, and the City's decision-making bodies (City Council) regarding the potential significant environmental effects resulting from implementation of the proposed Hunter Subdivision Project (Proposed Project), as well as possible measures to mitigate those potential significant effects including alternatives to the Proposed Project. This Draft EIR was prepared in compliance with the California Environmental Quality Act (CEQA) (California Public Resources Code, Section 21000 et seq.), the CEQA Guidelines (14 CCR 15000 et seq.), and the City's procedures for implementing CEQA. This Draft EIR is a "project" EIR, pursuant to CEQA Guidelines Section 15161. A project EIR examines the environmental impacts of a specific project.

As described in CEQA Guidelines Section 15121(a), an EIR is an informational document that assesses potential environmental impacts of a proposed project, as well as identifies mitigation measures and alternatives to a proposed project that could reduce or avoid adverse environmental impacts. As the CEQA lead agency for this Proposed Project, the City is required to consider the information in the EIR along with any other available information in deciding whether to approve the Proposed 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 and also those responsible agencies to consider when exercising any permitting authority or approval power directly related to implementation of this Proposed Project. It is not the intent of an EIR to recommend either approval or denial of a project.

1.1 USE OF PREVIOUSLY PREPARED ENVIRONMENTAL DOCUMENTATION

A Proposed Project application to develop the site was submitted to the City in 2010, and the City retained an environmental consultant in 2011 to prepare an EIR for the Proposed Project. The environmental review process was completed, and in September 2013, the City's Planning Commission reviewed comments received on the Draft EIR, but no action was taken by the Commission and the item was continued. Revisions were subsequently made to the Proposed Project that required the Draft EIR to be updated.

Updates to the Draft EIR were completed in 2017, but the City opted to not release the Draft EIR for public review due to problems with that document that required additional work. Ultimately, the City released a Request for Proposals for the preparation of this (2021) EIR.

The 2012 and 2017 Draft EIRs were reviewed in preparation of this EIR.

In May 2019, the City adopted the "General Plan Update 2040."[1] However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. Nonetheless, this EIR will also evaluate consistency with the City's adopted 2019 General Plan for informational and consistency purposes.

CEQA Guidelines Section 15150 allows for incorporation by reference of "all or portions of another document which is a matter of public record or is generally available to the public." Incorporation by reference is used principally as a means of reducing the size of EIRs. This Draft EIR relies in part on data, environmental evaluations, and mitigation measures from the prior Draft EIRs, and other components of environmental documents and plans prepared by the City for areas within the Proposed Project vicinity. These documents are listed here and used as source documents for this Draft EIR. All documents are available for public review during normal business hours (Monday through Friday, 8:30 a.m. to 5:00 p.m.) at the City of St. Helena Planning Division, 1480 Main Street, St. Helena, California 94574, and on the City's website at http://www.ci.st-helena.ca.us/planning/page/ceqa-document-center.

- Hunter Subdivision Project Revised EIR, October 2017
- City of St. Helena 1993 General Plan, adopted September 28, 1993
- City of St. Helena General Plan Update 2040, adopted June 2019
- St. Helena Municipal Code, updated through October 2020

1.2 LEAD, RESPONSIBLE, AND TRUSTEE AGENCIES

Lead Agency

In accordance with CEQA Guidelines Sections 15050 and 15367, the City of St. Helena has been designated the "lead agency," which is defined as the "public agency which has the principal responsibility for carrying out or disapproving a project." The lead agency is also responsible for determining the scope of the environmental analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to making a decision to approve a

[1] For consistency, the "General Plan Update 2040" document is referred to in this EIR as the "2019 General Plan".

project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the City.

Responsible Agencies

Responsible agencies are state and local public agencies, other than the lead agency, that have some authority to carry out or approve a project or that are required to approve a portion of the project or approve a permit for which a lead agency is preparing or has prepared an EIR or Initial Study/Negative Declaration (CEQA Guidelines Section 15813). The following agencies would potentially act as responsible agencies for the purposes of this Proposed Project:

- **San Francisco Regional Water Quality Board**. Ensures compliance with the City's National Pollutant Discharge Elimination System Permit for any stormwater discharge associated with construction activity.
- **Bay Area Air Quality Management District.** Oversees air quality and has the authority to require mitigation fees.

Trustee Agencies

Trustee agencies are designated public agencies with legal jurisdiction over natural resources that are held in trust for the people of California and that would be affected by a project, whether or not the agencies have authority to approve or implement the project (CEQA Guidelines Section15386). The following agency was identified as a trustee agency with potential jurisdiction over the Proposed Project:

- California Department of Fish and Wildlife

1.3 EIR PROCESS

Notice of Preparation

In accordance with CEQA Guidelines Section 15082, a Notice of Preparation (NOP) was circulated for public and agency review from March 6, 2018 through April 9, 2018 (included as Appendix A). The purpose of the NOP is to provide notification that an EIR for the Proposed Project was being prepared and to solicit guidance on the scope and content of the document. A summary of the comments received on the NOP is included in the Executive Summary, as well as in the introduction of each technical section.

Pursuant to CEQA Guidelines Section 15082, the lead agency held a public scoping meeting on March 12, 2018. Responsible agencies and members of the public were invited to attend and provide input on the scope of the EIR. Comments from agencies and the public in response to

the NOP are provided in Appendix A. General concerns and issues raised in response to the NOP are summarized in the Executive Summary and addressed in this Draft EIR.

Draft EIR and Public Review

This Draft EIR is being circulated for public review and comment for a period of 45 days. During this period, the general public, organizations, and public agencies can submit comments to the lead agency on the Draft EIR's accuracy and completeness. Release of this Draft EIR marks the beginning of a 45-day public review period pursuant to CEQA Guidelines Section 15105. The 45-day public review period for the Draft EIR will be from September 23, 2021 through November 8, 2021. The public can review the Draft EIR at the following address during normal business hours (Monday through Friday, 8:30 a.m. to 5:00 p.m.) or on the City's website at www.cityofsthelena.org.

City of St. Helena
Planning Division
1572 Railroad Avenue
St. Helena, California 94574

The City encourages all comments on the Draft EIR be submitted in writing. All comments or questions regarding the Draft EIR should be addressed to:

Maya DeRosa, AICP, Planning and Building Director
City of St. Helena Planning Division
1572 Railroad Avenue
St. Helena, California 94574
(707) 967-2783
mderosa@cityofsthelena.org

Final EIR and EIR Certification

Upon completion of the Draft EIR public review period, a Final EIR will be prepared that will include written comments on the Draft EIR received during the public review period and the City's responses to those comments. The Final EIR will also include the Mitigation Monitoring Program prepared in accordance with Section 21081.6 of the California Public Resources Code. The Final EIR will address any revisions to the Draft EIR made in response to agency or public comments. The Draft EIR and Final EIR together will comprise the EIR for the Proposed Project. Before the City can review the Proposed Project for approval, it must first certify that the EIR has been completed in compliance with CEQA, that the City Council has reviewed and considered the information in the EIR, and that the EIR reflects the independent judgment of the City. The City Council would also be required to adopt Findings of Fact and a Statement of

Overriding Considerations (if any significant and unavoidable impacts are identified). If no significant and unavoidable impacts (assuming the City Council finds all proposed mitigation measures to be feasible), are identified the City Council would not be required to adopt a Statement of Overriding Considerations if it approves the Proposed Project (see also Public Resources Code Section 21081).

EIR Adequacy

The level of detail contained throughout 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.

1.4 SCOPE OF THE DRAFT EIR

This Draft EIR has been prepared in compliance with CEQA (California Public Resources Code Section 21000 et seq.) and the procedures for implementation of CEQA set forth in the CEQA Guidelines (14 CCR 15000 et seq.).

According to CEQA Guidelines Section 15161, an EIR should focus primarily on the changes in the environment that would result from implementation of a proposed project. This EIR evaluates the potential environmental impacts that may occur from construction and operation of the Proposed Project, including direct, indirect, cumulative, and growth-inducing impacts. Based on a review of the Proposed Project and comments received during the NOP public review period, the City determined that an EIR should be prepared that addresses the following technical issue areas:

- Aesthetics
- Agricultural Resources
- Air Quality
- Biological Resources

- Cultural and Tribal Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise and Vibration
- Public Services/Recreation
- Public Utilities
- Transportation and Circulation
- Energy

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 CEQA and the CEQA Guidelines. In addition, the EIR recommends potentially feasible mitigation measures, where possible, and Proposed Project alternatives that would reduce or eliminate significant adverse environmental effects.

The alternatives chapter of the EIR (Chapter 5, Project Alternatives) was prepared in accordance with Section 15126.6 of the CEQA Guidelines. CEQA requires that the lead agency adopt mitigation measures or alternatives, where feasible, to substantially lessen or avoid significant environmental impacts that would otherwise occur. Proposed Project alternatives are not required, if no significant environmental impacts would occur.

The EIR evaluates the following alternatives to the Proposed Project:

Alternative 1: No Project/No Build Alternative. This alternative assumes no development would occur, and the site would remain in its current undeveloped condition.

Alternative 2: No Project/General Plan Alternative. This alternative assumes development would occur consistent with the General Plan land use designation and zoning.

Alternative 3: Park Preserve Alternative. This alternative includes a 1-acre park that would preserve a majority of the on-site wetlands and would include the same number of units as the Proposed Project, including the affordable housing units and accessory dwelling units.

Alternative 4: Increased Density/Affordable Housing Alternative. This alternative includes a 1-acre park along with up to 180 affordable housing units.

1.5 ORGANIZATION OF THE DRAFT EIR

Chapter 2, Executive Summary—Summarizes the elements of the Proposed Project and the environmental impacts that could result from implementation of the Proposed Project and provides a table that lists impacts, describes proposed mitigation measures, and indicates the level of significance of impacts before and after mitigation.

Chapter 1, Introduction and Scope of the Draft EIR—Provides an introduction and overview of the EIR process and describes the intended use of the EIR and the review process.

Chapter 2, Project Description—Provides a detailed description of the Proposed Project, including its location, background information, Project objectives, and technical characteristics.

Chapter 3, Introduction to the Analysis—Describes the baseline environmental setting and provides an assessment of potential Proposed Project impacts for each technical issue area presented. Each section is divided into four sub-sections: Introduction, Environmental Setting, Regulatory Background, and Impacts and Mitigation Measures (Proposed Project–specific and cumulative).

Chapter 4, CEQA Considerations—Provides information required by CEQA regarding impacts that would result from the Proposed Project, including a summary of cumulative impacts, secondary impacts including potential impacts resulting from growth inducement, and significant irreversible changes to the environment.

Chapter 5, Project Alternatives—Describes and compares the Proposed Project alternatives to the Proposed Project.

Chapter 6, EIR Preparers—Lists report authors who provided technical assistance in the preparation and review of the EIR.

Appendices—Includes various documents and data that support the analysis presented in the Draft EIR.

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CHAPTER 2
PROJECT DESCRIPTION

2.0 INTRODUCTION

Ben and Kelly Vanzutphen (Project applicants) have requested approval of a Tentative Subdivision Map. This proposed subdivision, which is the only discretionary action being considered by the City of St. Helena (City) at this time, would form the basis for the proposed Hunter Subdivision Project (Proposed Project), which is the "project" examined in this Environmental Impact Report (EIR). Development of the Proposed Project would require the approval of the Tentative Subdivision Map and several subsequent discretionary approvals, as outlined under Section 2.6 later in this chapter.

The Proposed Project's reasonably foreseeable and potentially significant adverse environmental effects are evaluated in this EIR.

Consistent with California Environmental Quality Act (CEQA) Guidelines Section 15124, this chapter includes: the location and boundaries of the Proposed Project, as shown on a project location map and on a regional map; a statement of the objectives sought by the Proposed Project; a general description of the Proposed Project's environmental characteristics, supporting public facilities; and a statement briefly describing the intended uses of the EIR, including a list of public agencies that are expected to use the EIR in their decision making, and a list of permits and approvals required to implement the Proposed Project.

Information has been provided by the Proposed Project applicant and City planning staff. The following project description serves as the basis for the environmental analysis contained in this EIR. The City will serve as the lead agency with final authority to certify the EIR and approve the Proposed Project (both the Tentative Subdivision Map and subsequent approvals).

2.1 PROJECT SITE

Location and Surrounding Land Uses

The 16.9-acre Project site (Assessor's Parcel Number is 009-030-057) is located in the northeast portion of the City, at the eastern terminus of Adams Street, three blocks east of downtown and State Route 29 (SR 29), and west of the Napa River, as shown in Figure 2-1, Regional Location.

The Project site is generally rectangular with a "panhandle" extension that connects the site to Adams Street west of the panhandle, as shown in Figure on Figure 2-2, Project Location. Adjacent land uses include single-family and multi-family residential development to the south, including the Vineyard Valley Mobile Home Park and the Hunt's Grove Apartments. Office uses

are located immediately adjacent to the site's most western edge at the terminus of Adams Street. Undeveloped land currently under cultivation is located to the north and northwest. A single-family residence along with a barn and accessory dwelling unit is currently (May 2021) under construction to the west/north of the Project site. A gravel maintenance road used by the public as an informal trail borders the site along the north/northwest boundary along with a separate public trail located on the north/northwest side of the maintenance road (referred to as the "maintenance road/public trail"), and a City storm water detention basin borders the site to the south/southeast. A drainage ditch is located along the northern edge of the property. Figure 2-3 depicts existing and adjacent land uses.

The open space located north and east of the site is part of the St. Helena Comprehensive Flood Protection Project (Flood Protection Project). The Napa River flows from northwest to southeast approximately 500 feet north/northeast of the Proposed Project boundary.

Existing Uses and On-Site Characteristics

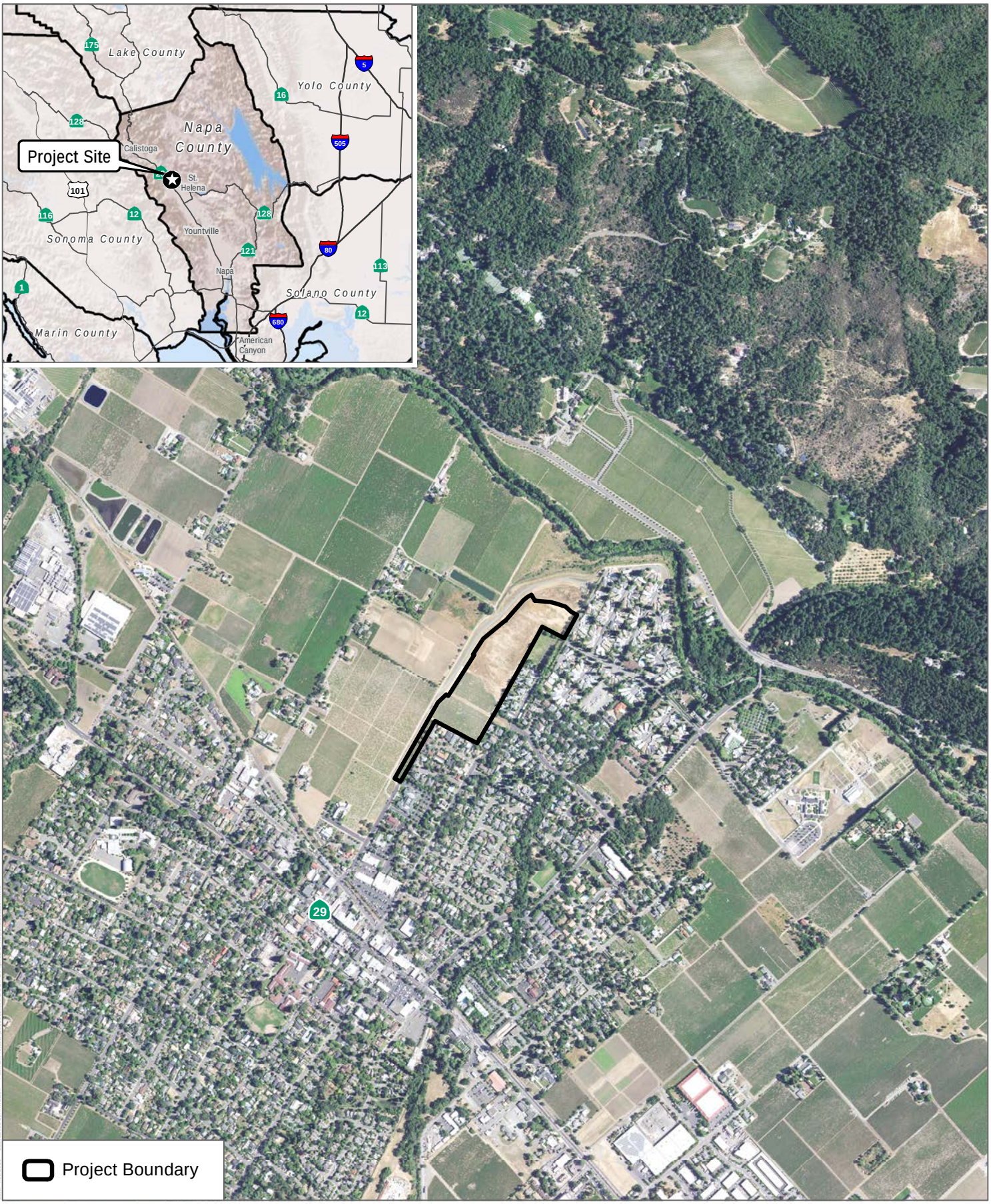
Approximately 40% (6 acres) in the southwestern portion of the Project site is under cultivation with a vineyard. Approximately one acre of vineyard is located in the western '"panhandle" portion of the Project site. The remainder of the site is undeveloped. An existing agricultural well is located near the southeastern end of the Project site, adjacent to proposed lot 19 of the Tentative Subdivision Map, shown as Parcel B on the proposed Tentative Map (see Figure 2-4).

Based on the Proposed Project's grading plan, the elevation across the Project site as developed would range from approximately 230 feet above mean sea level (amsl) on its southern edge to approximately 212 feet amsl on its northern edge. The portion of the site planned for the extension of Adams Street ranges from 243 feet amsl to 230 feet amsl.

An existing 10-foot wide public water line easement containing an active 12-inch water line bisects the north/northeast portion of the site. This easement is proposed to be abandoned as part of the proposed Tentative Subdivision Map and the water line relocated.

The existing gravel maintenance road/public trail that starts at the end of Adams Street and borders the Project site along the north/northwest is a popular walking trail for City residents.

Several small Valley Oak trees are present along the eastern boundary of the site along Del Rio Court that would not be removed as part of the Proposed Project. In addition, there is a drainage ditch located in this area and also along a portion of the eastern Proposed Project boundary. The Proposed Project would not impact these existing ditches.



SOURCE: Napa County 2015, USDA 2016

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FIGURE 2-1

Regional Location

Hunter Subdivision Project

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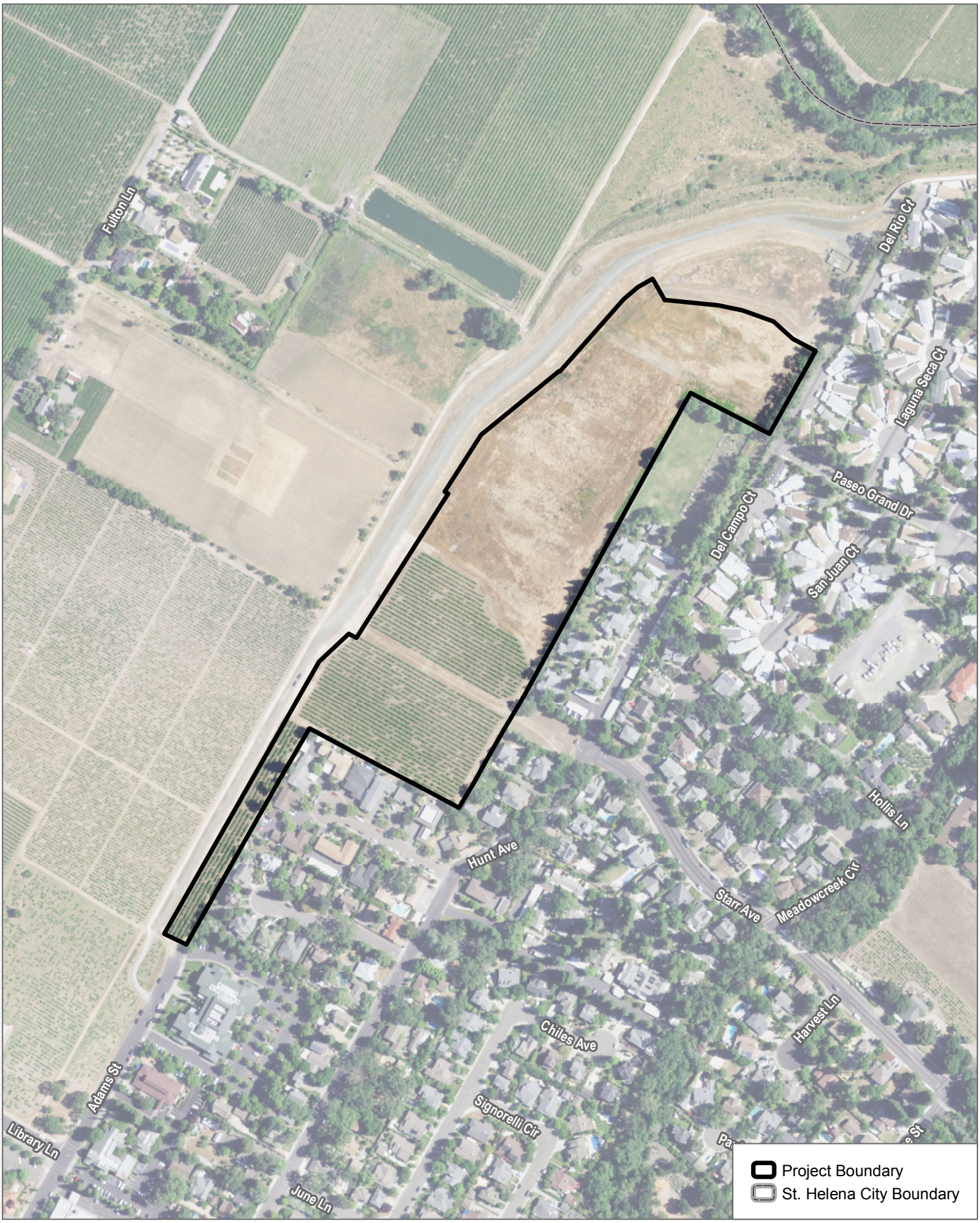

SOURCE: USDA 2016, USGS 2018, Napa County 2015

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0 165 330 Feet

FIGURE 2-2

Project Location

Hunter Subdivision Project

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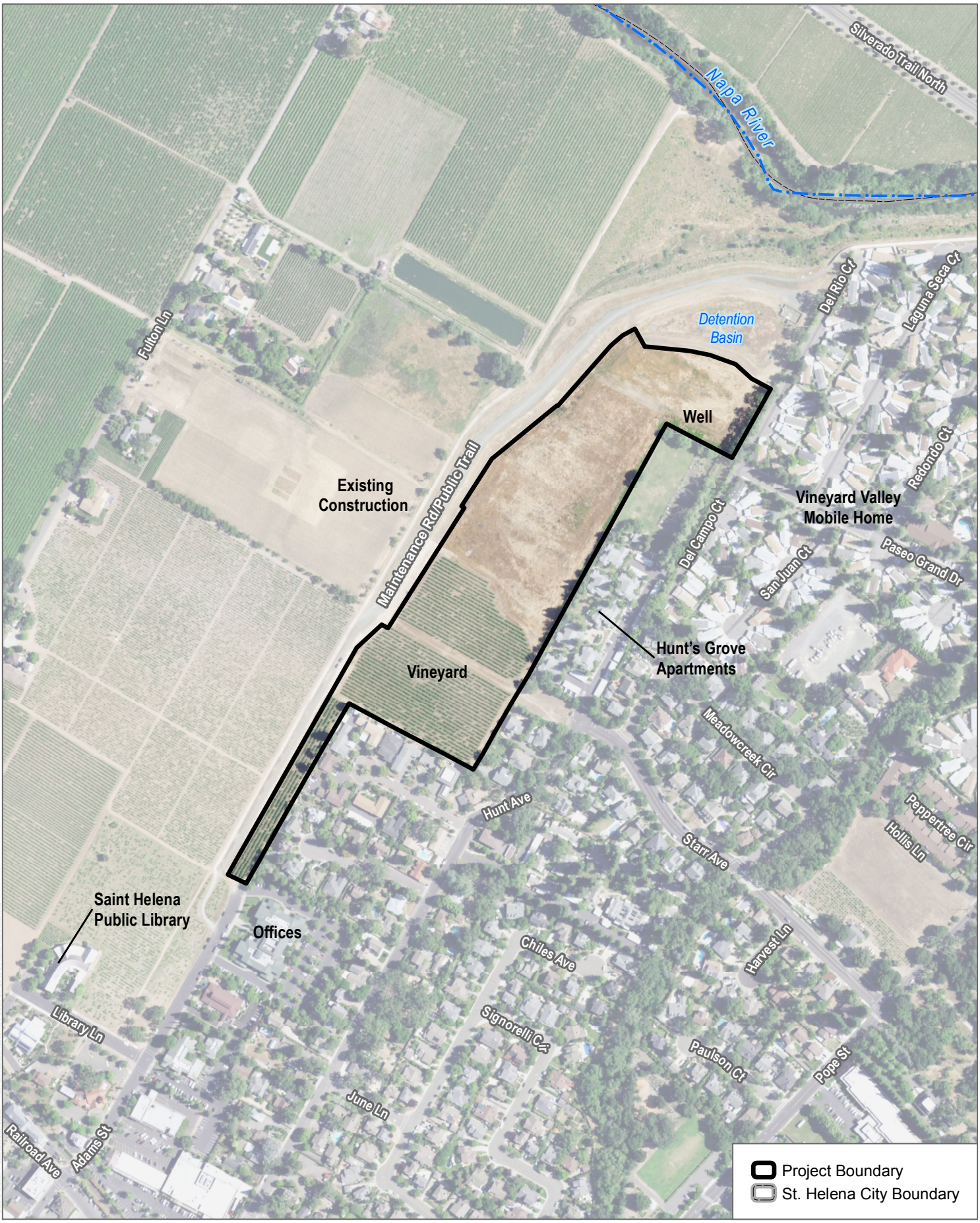

SOURCE: USDA 2016, USGS 2018, Napa County 2015

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0 200 400 Feet

FIGURE 2-3

Existing On-Site and Adjacent Land Uses

Hunter Subdivision Project

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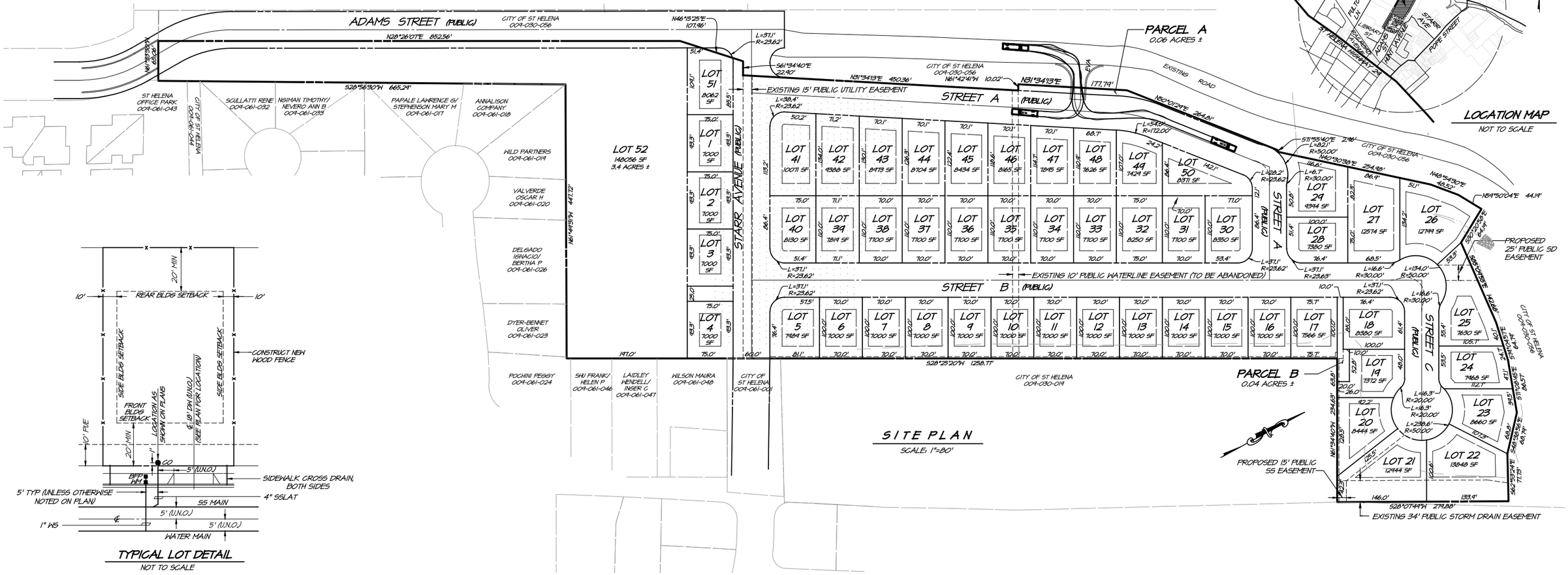

SOURCE: RSA 2019

FIGURE 2-4

Proposed Tentative Map

Hunter Subdivision Project

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There are no significant natural features on the site, and the City has not officially designated any significant viewsheds that would be affected by development of the site.

Project Background

The majority of the Project site was acquired by Dennis Hunter in 1997. Planning efforts were first initiated for developing the property in 2005. In 2008, the City and Mr. Hunter agreed to a land trade and a lot line adjustment to facilitate the City's Flood Protection Project (see below), resulting in the current configuration of the Project site in 2009. Mr. Hunter allowed the placement of excess fill material from the Flood Protection Project on the site.

The applicant's planning for the Project site was reinitiated later in September 2010, and an application was filed with the City for a Tentative Subdivision Map to subdivide the property for residential development. The application was accepted as complete by the City on March 28, 2011.

In 2011, the City completed construction of the Flood Protection Project which consisted of river channel improvements, a levee, and floodwall construction along the Napa River adjacent to the Project site. The Flood Protection Project was designed and constructed to meet or exceed all design criteria for Federal, State and local flood control projects. In December 2011, the City submitted an application to the Federal Emergency Management Agency (FEMA) to request a Letter of Map Revision (LOMR) that would revise the National Flood Insurance Program (NFIP) map and Flood Insurance Study report for the area subject to the Flood Protection Project. FEMA completed its review of the LOMR and officially revised the FIRM that covers the Project site and effectively removed the Project site from the 100-year flood hazard area. The effective date of the revised FIRM is November 5, 2012. The Project site is now designated Zone X, which FEMA identifies as an area with a moderate to low risk of flooding due to a levee failure and is considered protected from a 100-year flood event (FEMA 2018).

In 2012, the City prepared an EIR to evaluate the Proposed Project[1] and in 2013 the Proposed Project came before the City's Planning Commission for review. The Planning Commission did not take action on the Proposed Project and the item was continued. Additional information was submitted by the Proposed Project applicant, which resulted in the need to revise and update the Draft EIR.

[1] As noted earlier, the Proposed Project requires the approval of the proposed tentative subdivision map and several subsequent discretionary actions. These subsequent actions are discussed later in this chapter.

City of St. Helena 1993 General Plan and 2019 General Plan Land Use Designations and Zoning

The Project site was designated for residential development in the 1975 City of St. Helena General Plan , as Medium Density Residential (MDR) in the City of St. Helena 1993 General Plan, and is designated MDR in the City's recently adopted "General Plan Update 2040" (the 2019 General Plan). Because the tentative map application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project, since this version of the plan was in effect in 2011. This EIR also evaluates consistency with the City's current General Plan (adopted 2019) for informational and consistency purposes.

The 1993 General Plan described the MDR land use category as follows:

> **Medium Density Residential (MDR).** The MDR designation provides for single-family detached and attached homes, secondary residential units, public and semi-public uses, and similar and compatible uses. Residential densities shall be in the range of 5.1 to 12.0 dwelling units per gross acre. The MDR designation is the predominant residential designation, occurring throughout large areas of the City. The wide distribution of this designation is intended to maintain a development pattern in newly developing areas that is consistent with historic development patterns.

The current (adopted 2019) General Plan describes the MDR land use category as follows:

> **Medium Density Residential (MDR).** The MDR land use designation includes single-family attached and detached homes, and compatible uses. This designation permits residential densities between 5.1 and 16.0 dwelling units per acre. Retained from the 1993 General Plan, the MDR designation is the City's predominant residential designation and it is intended to maintain a development pattern in St. Helena's higher density areas that is consistent with historic development patterns.

Both versions of the General Plan contain the same basic description of the MDR land use category, except for the maximum density. Under the 1993 General Plan, this land use designation permits densities of 5.1 to 12.0 dwelling units per acre (du/acre) which would allow a maximum of 202 dwelling units assuming a density of 12.0 du/acre. The 2019 General Plan maintains the same MDR land use designation but allows a maximum density of 16 du/acre, which would allow a maximum of 270 dwelling units.

In order to comply with the General Plan, development on the site must include at least 87 dwelling units. The applicant intends to meet this requirement with a combination of 51 single family homes (to be built on the 51 single family lots created by the proposed subdivision), attached multi-family units on lot 52 of the subdivision, and accessory dwelling units (ADUs).

The zoning designation for the Project site is also Medium Density Residential (MR). The MR district implements the MDR General Plan designation. The MR district is described in the current Zoning Code as follows:

> The MR district is established for consistency with the medium density residential general plan designation. The district provides for single-family detached homes, accessory dwelling units, limited agricultural uses and compatible uses. Residential densities shall not be less than 5.1 dwelling units per acre nor more than sixteen (16) dwelling units per acre.

Uses in the MR zoning district include single-family detached homes, ADUs, limited agricultural uses and compatible uses. The MR district also allows attached duplex and triplex units, condominiums, and townhouses, and similar uses with a conditional use permit. Included within the MR zoning is a density bonus that may be given for housing projects that are affordable for persons of very low, low, or moderate income (Chapter 17.40, Section 17.40.60 (F)). The applicant has not requested consideration of a density bonus as part of the Proposed Project application.

The City's General Plan Housing Element Update 2015-2023 was revised and last updated in May 2015. The City's 2015-2023 Housing Element identifies the site as vacant and underutilized (City of St. Helena 2015b, p.133, Table 43).

2.2 PROJECT OBJECTIVES

CEQA requires an EIR to include a statement of objectives for a project, including the underlying purpose of the project. These objectives help the lead agency determine the alternatives to evaluate in the EIR (CEQA Guidelines, Section 15124(a)). The following is a list of objectives for the Proposed Project:

- Subdivide the site consistent with the City's General Plan and Zoning for the site to accommodate residential development.
- Provide opportunities to develop a variety of housing types, including multi-family, single-family, and accessory dwelling units, affordable to a range of incomes including, very low, low and moderate-income households.
- Provide opportunities to contribute to the provision of workforce and affordable housing consistent with the City's adopted Housing Element and the Regional Housing Needs Assessment (RHNA) approved by the Association of Bay Area Governments (ABAG).
- Minimize traffic-related environmental impacts, such as noise, air quality and greenhouse gases by lowering commute patterns for St. Helena workers by providing more local housing opportunities.

- Support alternative transportation by providing a pedestrian and bicycle linkage through St. Helena, eventually connecting the regional Vine Trail from Calistoga to the Vallejo Ferry.
- Exceed the City's green building ordinance (Municipal Code Chapter 15.53) and incorporate sustainable design features including water conservation measures, drought resistant landscaping with low flow watering systems, south and west side tree placement to reduce reliance on air conditioning units, and pre-wiring for photovoltaic systems.
- Implement the General Plan Circulation Element by completing the planned extension of Starr Avenue and the partial planned extension of Adams Street from where Adams Street terminates to connect to the Project site.
- Minimize City water use by continuing the use of an existing on-site water well for irrigation of Proposed Project landscaped areas.

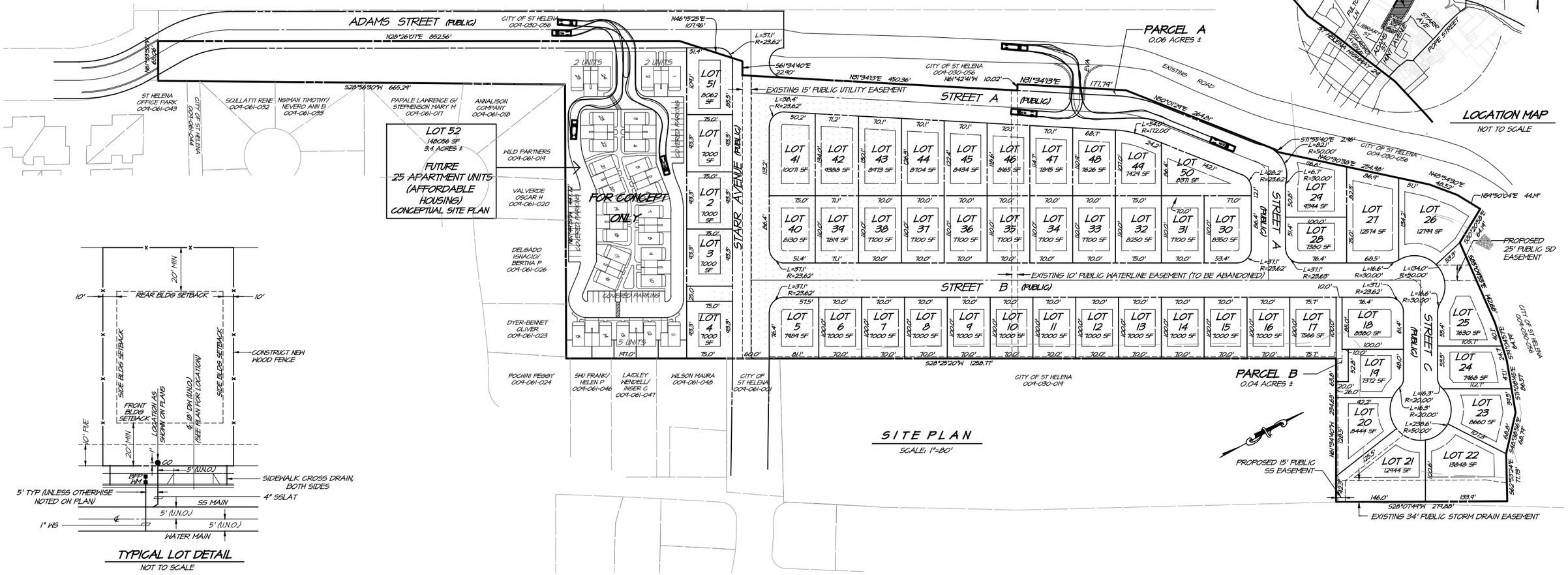
2.3 PROPOSED PROJECT

The Proposed Project applicant has applied for a Tentative Subdivision Map to subdivide the site into 51 lots (sized for single-family residences), a 3.4-acre parcel, and two lettered lots: a 0.06-acre parcel (Parcel "A") and a 0.04-acre parcel (Parcel "B"), as shown in Figure 2-4, Proposed Tentative Map.

Beyond the Tentative Subdivision Map application before the City at this time, the Proposed Project applicant has stated their intent to ultimately develop the 51 lots with 51 single-family, market-rate residences. Additionally, homes on 11 of the 51 lots would be developed with an ADU as part of their initial construction. Affordability of the attached units would be addressed in an Affordable Housing Agreement which would require approval by the City Council subsequent to approval of the Tentative Subdivision Map.

The applicant intends to ultimately develop the 3.4-acre parcel with 25 attached multifamily residential units. The affordability of these multi-family units will be the subject of the future Affordable Housing Agreement. A conceptual layout of how the multifamily units could be designed is shown in Figure 2-4A. However, this layout has not been formally submitted and is not under consideration for approval at this time.

The applicant has not expressed any intent to develop the 0.06-acre Parcel A.



SOURCE: RSA 2019

FIGURE 2-4a

Proposed Tentative Map with Conceptual Multi-Family Layout

Hunter Subdivision Project

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The 0.04-acre Parcel B is being created to accommodate an existing agricultural well, which would be retained and used to irrigate onsite landscaped areas. No other development would take place on Parcel B.

The Proposed Project applicant's ultimate intended development of the site would require several subsequent discretionary approvals—beyond the current application for a Tentative Subdivision Map—that are not before the City at this time. Nevertheless, to ensure full analysis of what is reasonably foreseeable, this EIR analyzes the applicant's ultimate intended development of the site as the Proposed Project.

Table 2-1 provides a breakdown of the total development proposed by the applicant.

Table 2-1
Proposed Project Land Use

Proposed Land Use	Zoning	Acres	Residential Units	Average Density (du/ac)
Single Family Residences	MR	13.4	51	
Accessory Dwelling Units[1]			11	
Attached Units[2]	MR	3.4	25	
Undeveloped	MR	.06	--	
Agricultural Well Site	MR	.04	--	
	Project Total	**16.9**[3]	**87**	**5.1**

Source: Hunter Subdivision Tentative Map 2021.
Notes:
1 Accessory units would be constructed by the applicant/developer concurrently on 11 of the single-family lots.
2. Attached units include duplex or triplex units would be included within Lot 52.
3 Numbers above add to 17 due to rounding. Site area is 16.9 acres.

The 87 residential units (51 single family homes, 25 attached units, 11 ADUs) would provide for an average density of 5.1 du/ac. Because the General Plan establishes a minimum density for the MDR land use category, this is the minimum number of units which can be constructed on the Project site. (The 2019 General Plan allows up to 16 units per acre, for a maximum potential buildout of 270 units.)

As shown on the proposed Tentative Subdivision Map, the single-family lots would range in size between approximately 7,000 and 12,000 square feet, with most of the lots in the 7,000 to 8,000 square foot range. A number of irregular shaped lots would be located along the eastern edge of the Project site and along the cul-de-sac (see Figure 2-4).

Each lot would have a minimum size of 7,000 square and a minimum width of 70 feet, per the standards of the MR zoning district. The development standards of the MR zoning district require a minimum 20-foot front and rear setback, and a 10-foot setback on the sides (or a 20-

foot setback in a street side yard). The MR zoning establishes a maximum height for principal dwellings of 30 feet (allowing for a 2-story home). Any accessory structure, such as an ADU, would be limited to a maximum height of 15 feet.

The 3.4-acre parcel (Lot 52), is proposed to be developed with 25 attached multifamily housing units including 30,000 to 45,000 total square feet of building area. The applicant's conceptual design for Lot 52 shows two-story, two-bedroom units each with a single-car garage and an on-site parking space plus covered guest parking spaces. A conceptual layout of the Lot 52 site along with conceptual renderings of the structures are shown in Figures 2-5 and 2-6. A specific design for these units has not been filed with the City and would be the subject of a future Design Review application.

Access to Lot 52 would be provided from Adams Street and a driveway connection to Starr Avenue, which would be extended to intersect Adams Street north of the Project site.

As discussed in Section 2.4, below, construction of detached and attached residential units would require design review approval by the Planning Commission, while development of the attached residential units would also require approval of a conditional use permit.

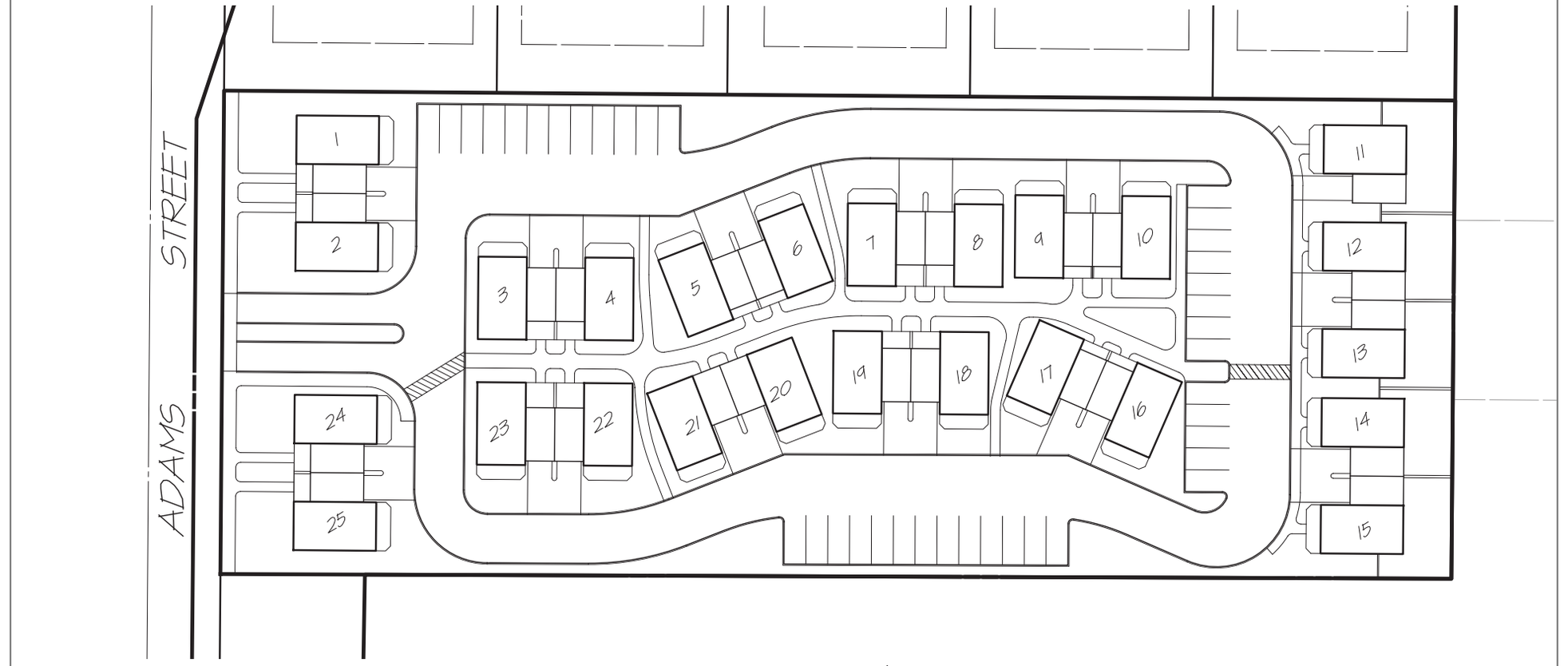
Affordable Units

The Proposed Project applicant has proposed to enter into an Affordable Housing Agreement with the City for the 25 multi-family units. The agreement will stipulate how these units would be managed (such as by the Proposed Project applicant or a non-profit organization) to ensure the required affordability requirements are met and maintained over the term of the agreement.

The Affordable Housing Agreement is still being discussed by the City and the Proposed Project applicant and is not proposed or required for review and approval with the Tentative Subdivision Map. A final Affordable Housing agreement approved by the City Council would be required prior to recordation of a final subdivision map.

Accessory Dwelling Units

The City's Zoning Ordinance (Municipal Code Section 17.116.030) and state law provides for the construction of an ADU on any lot which is zoned for residential use and has an existing single-family residence. Such units may be rented (for a period of not less than 30 days) but may not be sold separately from the main residence. As discussed earlier in this section, the Proposed Project applicant proposes to construct 11 ADUs on 11 of the 51 single family lots created by the proposed Tentative Subdivision Map.



SOURCE: RSA 2017

FIGURE 2-5

Conceptual Layout of Lot 52

Hunter Subdivision Project

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SOURCE: Ben Vanzutphen 2018

FIGURE 2-6

Conceptual Rendering of Multi-Family Housing

Hunter Subdivision Project

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Construction of an ADU would require only ministerial approval on any lot which contains a single-family residence (as is the case in all residentially zoned lots in the City which contain one single-family residence).

The Proposed Project is proposing 11 ADUs which equates to approximately 22% of the total number of single-family residences. By comparison, applications for ADUs in St Helena between 2013 and 2020 totaled approximately 37, equal to about 1.7% of all single-family residences in the city.

Population

The City uses a persons per household factor of 2.45 people per unit for medium/higher density residential land uses (City of St. Helena 2013). Using this factor, the 87 units in the applicant's development proposal (including ADUs) would conservatively generate 213 residents.[2]

Site Access and On-site Circulation

Development of the Project site would require the extension of Adams Street and Starr Avenue onto the Project site to provide two points of ingress and egress, as shown in Figure 2-4.

Adams Street would be extended from the terminus of the existing roadway approximately 550 feet to the northeast, ending at the Project site and connecting to the Project's internal roadway network. The southwestern portion of the existing gravel maintenance road at the end of Adam's Street would be modified by the Proposed Project to enable access to the Project site. The remainder of the maintenance road would remain a gravel road (see Figure 2-4). The existing trail parallel to the maintenance road would remain and would not be altered by the Proposed Project. Sidewalks would be installed on both sides of the Adams Street extension along with a 6-foot wide planting strip.

Starr Avenue would be extended approximately 165 feet northward from Hunt Avenue, crossing a City-owned parcel before entering the Project site and connecting to the Project's internal roadway network before ultimately intersecting with the extension of Adams Street. Sidewalks would be installed on both sides of the Adams Street extension along with a 6-foot wide planting strip.

The extension of Starr Avenue would divide the site into two portions. The western portion would include five single-family lots and the 3.4-acre multi-family lot. The eastern portion would include the other 46 single-family lots, the 0.06-acre remainder parcel "A" and the 0.04-acre parcel "B" for the agricultural well.

[2] Note: ADUs typically are occupied by 1 or 2 people; therefore, it is anticipated fewer than 213 people would occupy the Proposed Project upon completion.

The portion of the site south of the proposed Adams Street extension consists of approximately one acre of existing vineyards, which would be preserved as part of the Proposed Project.

The Adams Street extension is currently a City-owned right-of-way. The Proposed Project applicant would dedicate the additional right-of-way necessary for the extensions of Adams Street and Starr Avenue and would be responsible for construction of the two public road extensions. All new streets would be designed and constructed consistent with existing City street standards.

As shown on Figure 2-4, three new local streets (Streets A, B, and C) are proposed within the Project site. Single-family lots would be located on the south side of Street A, and on both sides of Streets B, C and the Starr Avenue extension.

As shown on the proposed Tentative Subdivision Map (Figure 2-4), the proposed width of the Adams Street and Starr Avenue extensions is 60 feet, consistent with the City's minor residential street standard. Streets A, B, and C would be 56 feet wide and would allow parking on both sides. All streets would include curb, gutter, and 4-foot-wide sidewalks and 6-foot wide planting strips on both sides of the street.

The Proposed Project would provide sidewalks for pedestrians. Bicyclists would use the on-site streets. The Proposed Project would also support subsequent extensions to provide non-vehicular access. Streets A, B, and C would be constructed by the Proposed Project applicant and dedicated to the City.

Emergency vehicle access would be provided via the extension of Adams Street, Starr Avenue, and an emergency vehicle access (EVA) to the existing gravel maintenance road that borders the north/northwest boundary of the Project site. The EVA would prohibit through traffic by installing bollards or other devices to prevent vehicle access. In the event of an emergency the City's Fire and/or Police department would access a knox box to unlock the bollards or other device to allow vehicle access.

On-street parking would be permitted along all Proposed Project streets including the extension of Starr Avenue and Adams Street.

No Class 1 (off-street bike path) or Class II (on-street striped) bikes lanes would be included as part of the Proposed Project.

Landscaping and Lighting

The applicant's proposed landscape plan includes approximately 185 trees, including 24-inch box scarlet maple (*Acer Rubrum*), Chinese pistache (*Pistacia Chinensis*) and tulip tree (*Liriodendron*

Tulipifera), as shown on Figure 2-7. Approximately 74 scarlet maple trees would be planted along the Adams Street extension to the intersection with Starr Avenue and along the Starr Avenue extension. Approximately 57 Chinese pistache trees would be planted along Street A. Approximately 54 tulip trees would be planted along Street B and the Street C cul-de-sac.

Trees would be planted mostly in rows of two to five with 10 feet of separation from streetlights. On the western edge of Starr Avenue the Scarlet Maples are proposed in a solid row of nine trees between Street A and Street B. Sidewalk planting strips would have hydro seed native grasses and drought tolerant plantings between the trees that are adapted to the City's climate.

The existing vineyards on the Project site would be removed with the exception of an approximately one-acre portion of the vineyard that would remain located in the westernmost "panhandle" portion of the site.

All public landscaping and irrigation would be required to meet the California Code of Regulations Title 23. Chapter 2.7 Model Water Efficient Landscape Ordinance requirements.

The Proposed Project includes 28.5-foot-tall standard streetlights along all residential streets.

A Homeowners Association (HOA) would oversee maintenance of public landscaping, including the approximately one-acre vineyard located in the southwestern "panhandle" portion of the site, and streetlights. The streetlights would be designed to conform with Lighting Zone 2 of Title 24, Part 6, of the California Code of Regulations.

Walls/Fences

Per the proposed Tentative Subdivision Map, the rear yard of Lots 1 through 51 would include a 6-foot high wood fence for privacy. A retaining wall that varying in height from 2 to 4 feet is proposed along the rear property line of Lots 5 through 22. The wall would be constructed of concrete masonry block.

Infrastructure Improvements and Public Services

Water, sewer, and storm drain services would be provided by the City. The Proposed Project would include new water, sewer, and storm drain infrastructure on site to serve the residential development designed in compliance with City specifications. The Project site is currently not served by City utilities. There is an existing groundwater well in the eastern area of the site (on proposed Lot 19). The Proposed Project's on-site water, sewer, and storm drain lines are proposed to be located within the street/driveway rights-of-way within the Project site.

Water Supply

With the abandonment of the 10-foot public water main easement and the existing 12-inch water main within this easement, a 12-inch public water main would be realigned and constructed by the City, proposed to be within the Starr Avenue right-of-way, as shown on Tentative Map page TM5. The existing 12-inch water line traverses the site generally north/south to the east of Starr Avenue within a 10-foot easement; this line would be relocated as part of development of the site.

The Project is proposing a looped 8-inch water main within Streets A and B that would connect to the existing water main at two locations. A new 8-inch water main is also proposed within the extension of Adams Street to connect to the existing water main at the southwest end of the Project site. As noted above, an existing 12-inch water line would also be relocated within the site to provide continued service to customers.

Fire hydrants and other appurtenances would be located and installed pursuant to City standards.

An existing agricultural well is located near the eastern end of the Project site that is proposed to be maintained in place (in proposed Lot 19) and used to provide non-potable irrigation of all on-site landscaping areas, including private front and rear yards. The well is proposed by the Project applicant to be owned and maintained by a homeowners' association or similar method; public ownership or operation is not proposed. A lot is shown on the proposed tentative map for the well site and access to the local street for maintenance, power, and water lines.

Water lines would be extended within the Project site from the agricultural well to serve the landscaped areas in the public right-of-way, at the individual homes and the future multi-family site, and the retained vineyard.

The Proposed Project would be designed not to exceed 0.4 acre-feet/year/dwelling unit of water based on the installation of increasingly efficient and lower-water-using fixtures and appliances and irrigation systems. For further detail on the Proposed Project's water demands, see Section 3.12, Public Services/Recreation and Section 3.13, Utilities. For information specific to the agricultural well and use of this well to provide the Project's landscape irrigation requirements, please see Section 3.9, Hydrology and Water Quality.

FIGURE 2-7

Landscape Plan

Hunter Subdivision Project

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Sewer System

Wastewater flows from the western end of the Project site are proposed to drain into an existing public manhole at the corner of Starr and Hunt Avenue via new 8-inch sewer pipes, as shown on Tentative Map page TM5. The area east of Starr Avenue, lower in elevation, is proposed to drain east through the Project site via new 8-inch sewer pipes, through Lot 21 within a public easement and into an existing public manhole on the adjacent parcel in the Vineyard Valley Mobile Home Park. The Proposed Project would install 8-inch sewer lines within all roadways to service the residences.

All sewer mains are sized to accommodate Proposed Project flows, per City standards, and designed at slopes to provide required self-cleaning velocities. Sewer laterals would be installed per City specifications.

Storm Drainage and Stormwater Quality

The Proposed Project would connect to existing storm drain infrastructure. New storm drain lines would be installed in Streets A, B, C and Adams Street. As shown on Tentative Map page TM 5, the southwesterly portion of the Project site is proposed to drain via gutter flow and proposed storm drain pipes and discharge into the existing Starr Avenue storm drain at several different locations. The rest of the Proposed Project is proposed to drain to the northeast via gutter flow and storm drain pipes and discharge into the existing detention basin. The City requires that all storm drain pipes be sized to accommodate a 10-year storm within the pipe and 100-year storm within the street section.

Police and Fire Services

The Project site would be served by the St. Helena Police Department located at 1480 Main Street in St. Helena. The Police Department provides law enforcement services within the city limits and maintains 24-hour security patrol throughout the community. Fire protection services are provided by the St. Helena Fire Department located on the same site as the police department, which is less than a ¼-mile from the Project site. The fire department provides fire protection services within the city limits, including fire suppression, fire prevention, education, emergency medical and rescue services, and response to incidents involving hazardous materials.

Schools

The Proposed Project site is located within the St. Helena Unified School District, which operates four schools, including a primary school, elementary school, middle school, and a high school. The Proposed Project would be required to pay school impact fees to the School District at the time of building permit issuance.

Solid Waste Disposal

Upper Valley Disposal provides solid waste services to residents and businesses in the City. Solid waste is disposed of at the Clover Flat Landfill, a Class III landfill site, located off Silverado Trail north of the City.

Natural Gas, Electricity, Cable, and Telephone

The Proposed Project also includes natural gas, electrical, cable television, and telephone to serve proposed development. Natural gas is provided by PG&E and electric services would be provided by PG&E or MCE Clean Energy Community Choice Electricity program. Telephone service would be provided by AT&T and cable and internet services would be provided by a variety of providers including Xfinity, AT&T, and Valley Internet.

Offsite Improvements

Off-site improvements required for the Proposed Project include extending Starr Avenue approximately 165-feet to connect to the Project site and extending Adams Street approximately 550-feet to provide access to the site.

An emergency access for fire equipment would also be built to connect Street A with the existing maintenance road. All of these improvements would take place on land owned by the City.

Construction Details, Phasing, and Timeline

The applicant has not prepared a proposed phasing plan. According to the applicant, buildout of the Proposed Project would occur based on market conditions and the timeliness of obtaining building permits. The City may require the site be graded and construction of the backbone infrastructure be completed for the entire site as the first phase; however, the details of the Project's phasing plan have not yet been finalized.

If the Tentative Subdivision Map is approved and the applicant seeks and obtains all other required approvals, it is assumed the first phase of construction would require site clearing, grading, and trenching for utilities followed by construction of the roadways and residences.

For the purposes of the analysis it is assumed construction of homes would occur over a 6+ year period with the exception of the multi-family units, which the applicant proposes to build within a year of approval of Design Review, Use Permit to construct the units, and approval of the Final Subdivision Map.

Grading

Grading of the site would create a gradual downward slope from west to east towards the existing City storm water detention basin. To level the site and to ensure a stable base for new development, the existing fill/soils on the site would be removed, recompacted and returned to the site along with additional fill. The finish grade of most of the area east of Starr Avenue would be increased over the existing grade by the placement of approximately 1.5 to 2.5 feet of fill material; west of Starr Avenue the finish grade would be approximately 1 foot lower than the existing grade. The maximum depth of cut would be approximately 1.5 feet and the maximum depth of fill would be 5.0 feet. A former pond, located in the southeastern portion of the Project site, would require excavation of up to 10 feet due to anticipated settlement.

The estimated net grading quantity, as provided by the Proposed Project applicant, is approximately 24,321 cubic yards of fill to replace the 10,202 cubic yards of cut (RSA 2020).[3] This quantity does not include the spoils from the joint trench, roadways, curb and gutter, or foundations. It is the applicant's intent to balance the soils on site and not require the export or import of soils. Importing of some material, such as base rock, sand, and peat gravel that is used in the joint trenches, building foundations, and roadways would be required.

A summary of estimated earthwork quantities, provided by the applicant, is shown below.

Table 2-2
Earthwork Summary

Location/Item	Cut (CY)	Fill (CY)
Site Total	10,202	24,321
Pad Spoils[1]	5,200	
Trench Spoils[2]	4,500	
Vertical Spoils[3]	3,825	
Expansion[4]	510	
Subtotal	*24,237*	*24,321*
Import[5]	84	
Total	**24,321**	**24,321**

Notes:
1 Pad spoils assumed to be 100 cubic yards (CY) per lot due to post tension slab construction.
2 Trench spoils include water, sewer, storm drain, bioretention, irrigation water from well and joint trench.
3 Vertical spoils assumed at 75 yards per house and includes utility trenching in lot, landscape and final grading excavations to remove dirt from finished pad for drainage purposes.
4 Expansion assumed at 5% of the site total cut amount.

3 Earthwork quantities estimated by the applicant are based solely on a subtraction of finished grades from existing grades. They do not account for implementation of geotechnical recommendations, which based on a preliminary geotechnical study, is likely to consist of over-excavation and re-compaction of site soils to an average depth of 4.5 feet as part of site preparation for structural foundations, utility lines and streets. See Section 3.6 (Geology and Soils) for details.

[5] Net import or export less than 1% of the total volume amount (24,321 CY in this case) can be considered a balanced site.
Source: RSA Engineers, 2021.

Post-Construction Best Management Practices

The following post-construction best management practices (BMPs) would be implemented as part of the Proposed Project:

- Inlet labels "Drain to River"
- Private Street sweeping
- Downspouts to landscape swales
- Vegetated swales
- Homeowner education on storm water pollution prevention
- Hydrodynamic oil, water, and solid separation

Construction staging and parking for construction workers would be provided on site.

2.4 DISCRETIONARY ACTIONS AND USE OF THIS EIR

As part of the approval process, the City of St. Helena City Council will need to certify this EIR as meeting the requirements of CEQA and reflecting the independent judgement of the lead agency.

The City would then consider approval of the Tentative Subdivision Map. In order to approve the Tentative Subdivision Map, the City must find that the proposal is consistent with the 1993 General Plan and zoning.

In order for the Proposed Project applicant to commence grading and development of the site and homes, the City would require additional subsequent discretionary approvals including the following:

- Affordable Housing Agreement
- Design Review
- Use Permit required to construct attached multifamily units in MDR District

The City Council will also review the Final Map to ensure that all conditions have been satisfied.

The following permits and approvals[4] would be required to implement the Proposed Project, but are considered ministerial actions:

- Encroachment Permit for the road extensions
- Grading and Building Permits
- Water and Sewer Connections
- Other Administrative permits such as temporary and permanent encroachments, traffic management/construction parking, etc., and approvals would be required from other City departments

Responsible and Trustee Agencies

The EIR prepared for the Proposed Project would be used by responsible agencies and trustee agencies that may have some discretionary review or authority over approval of certain Proposed Project elements. Responsible agencies are public agencies, other than the lead agency, that have some approval authority over a project (i.e., issue a permit). Trustee agencies are state agencies having jurisdiction by law over natural resources held in trust for the people of the State of California, as identified in the CEQA Guidelines. The Proposed Project applicant would be responsible for obtaining all necessary permits, as required by law. The following responsible agency has been identified:

- San Francisco Regional Water Quality Control Board

The following agency has been identified as a trustee agency:

- California Department of Fish and Wildlife – Effects on special-status species

2.5 REFERENCES

FEMA (Federal Emergency Management Agency). 2018. National Flood Hazard Layer FIRMette. Accessed September 4, 2018.

City of St. Helena. 1993. City of St. Helena General Plan September 28, 1993.

[4] Note: Due to recent legislation under SB 330 (new Gov't Code sec. 66300), cities are prevented from "establishing or implementing any provision that . . . [a]cts as a cap on the number of housing units that can be approved or constructed either annually or for some other period. Thus, the City's Residential Growth Management System that limits residential development is no longer enforceable so would not apply to this Proposed Project.

City of St. Helena. 2018. St. Helena General Plan Update 2040, Draft Environmental Impact Report. SCH# 2010042001. October 23, 2018.

City of St. Helena. 2019. City of St. Helena 2040 General Plan Update. Adopted June 2019.

RSA. 2020. Approximate Raw Earthwork Quantities Based on Tentative Map. February 6, 2020.

CHAPTER 3.0
INTRODUCTION TO THE ANALYSIS

3.0.1 SCOPE AND FORMAT OF THE EIR

This chapter of the Draft Environmental Impact Report (EIR) discusses the environmental and regulatory setting, impacts, and mitigation measures from the proposed Hunter Subdivision Project (Proposed Project) for each of the following technical issue areas (Sections 3.1 through 3.15):

3.1 Aesthetics
3.2 Agricultural Resources
3.3 Air Quality
3.4 Biological Resources
3.5 Cultural, Paleontological and Tribal Cultural Resources
3.6 Geology and Soils
3.7 Greenhouse Gas Emissions
3.8 Hazards and Hazardous Materials
3.9 Hydrology, Drainage, and Water Quality
3.10 Land Use
3.11 Noise and Vibration
3.12 Public Services and Recreation
3.13 Public Utilities
3.14 Transportation and Circulation
3.15 Energy

It is important to note impacts of the environment on a project or plan (as opposed to impacts of a project or plan on the environment) are beyond the scope of required California Environmental Quality Act (CEQA) review. “[T]he purpose of an EIR is to identify the significant effects of a project on the environment, not the significant effects of the environment on the project” (*Ballona Wetlands Land Trust v. City of Los Angeles* (2011) 201 Cal.App.4th 455, 473 and *California Building Industry Association v. Bay area Air Quality Management District* (2015) Cal.App 4th).

The Residential Growth Management System Ordinance (Chapter 17.152) of the City of St. Helena (City) regulates the residential growth within the City to approximately 2% per year. It limits the number of building permits to nine per year for market rate housing and caps the number of dwelling units to approximately 2,800, not including regulated affordable units, guest cottages, or accessory dwelling units. Since the City adopted its Residential Growth Management System in 1979 and last updated in 2002, the state passed Senate Bill 330 (see Government Code Section 66300). Section 66300 includes language that prevents cities from “establishing or implementing any provision that . . . [a]cts as a cap on the number of housing

units that can be approved or constructed either annually or for some other period" (Section 66300(b)(1)(D)(ii) [emphasis added]).

Under current state law the City can no longer implement a restriction on the number of residential units that can be constructed. There is an exception for growth control measures of this type approved by the voters prior to Jan. 1, 2005, if the affected city is in a "predominantly agricultural county," which is defined as a county that has more than 550,000 acres of agricultural land, and at least half the county area is agricultural land. Napa County does not meet the definition of an agricultural county; therefore, this exception is not applicable to the City.

Technical Studies

A number of technical studies were prepared as part of this Draft EIR and are included in the technical appendices. Studies prepared include the results of a Land Evaluation and Site Assessment to assess agricultural land (Appendix B), Biological Resource Assessment and Wetland Delineation (Appendix D), Cultural Resources Report (Appendix E), Geotechnical Reports (Appendix F), a Phase I Environmental Site Assessment (Appendix G), Hydrology Report (Appendix H), Preliminary Water Calculations (Appendix J), and a Traffic Impact Assessment (Appendix K).

Environmental Setting

According to Section 15125 subdivision (a) of the CEQA Guidelines, an EIR must include a description of the existing physical environmental condition in the vicinity of the project as they exist at the time when the Notice of Preparation (NOP) is published. This "environmental setting" will normally constitute the "baseline condition" against which project-related impacts are compared. Therefore, the baseline conditions for this EIR, unless noted otherwise, are based on conditions that existed in March 2018, when the NOP was published. The CEQA Guidelines recognize that the data for establishing an environmental baseline cannot be rigid. Because physical environmental conditions may vary over a range of time, the use of environmental baselines that differ from the date of the NOP is reasonable and appropriate in certain circumstances when doing so results in a more accurate or conservative environmental analysis.

For analytical purposes, impacts associated with implementation of the Proposed Project are compared against two different baselines: first, Proposed Project–specific effects are assessed against existing conditions at the time the NOP was first published; and second, cumulative effects are assessed against future, or "cumulative," conditions, generally defined as buildout of the City of St. Helena's 1993 General Plan because this General Plan was in effect when the Proposed Project application was deemed complete in September 2011. The City adopted the 2040 General Plan Update in May 2019. However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993

General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. Nonetheless, this EIR will also evaluate consistency with the General Plan Update 2040 for informational purposes and the cumulative analysis will note any changes, if relevant between buildout assumptions under the 1993 General Plan as compared to the 2040 General Plan.

Existing conditions and the cumulative baseline can differ by issue area. In some instances the cumulative analysis information from the City's General Plan Update 2040 Draft EIR released in in October 2018 is referenced because this was the most current information regarding future cumulative development at the time of writing the technical section. Each technical section defines the existing conditions and cumulative baseline for the impacts being analyzed.

Project Analysis Assumptions

The Proposed Project is requesting approval of Tentative Subdivision map that includes 51 single-family lots, a lot designated for 25 attached multi-family units, and 11 accessory dwelling units. The City's Zoning Ordinance (Municipal Code Section 17.116.030) and state law provides for the construction of an accessory dwelling unit on any lot which is zoned for residential use and has an existing single-family residence. Such units may be rented (for a period of not less than 30 days) but may not be sold separately from the main residence. The Proposed Project applicant has proposed construction of 11 accessory dwelling units as part of the Proposed Project.

The Proposed Project application does not include a formal phasing plan. Therefore, for the purposes of this EIR buildout of the Project would occur based on market conditions and the timeliness of obtaining building permits. Therefore, it is assumed that the Project could take anywhere from 6 years or longer for full buildout, based on market and growth management factors. Most environmental impacts assessed in this EIR are analyzed in terms of the post-Project condition and are not substantially affected by the construction schedule. Air Quality and Greenhouse Gas Emissions for construction are affected by the length of construction. Therefore, emissions associated with a six-year buildout are conservatively assumed and provided in the air quality and greenhouse gases analysis (Sections 3.3 and 3.7).

In determining the level of significance of environmental impacts associated with the Proposed Project, the analysis in this Draft EIR assumes that the Proposed Project would comply with relevant federal and state laws and regulations, City General Plan policies, ordinances, and other adopted City documents, unless otherwise noted. Therefore, such mandatory policies, ordinances, and standards are not identified as mitigation measures, but rather are discussed as part of the "Regulatory Setting" governing the Proposed Project and compliance with these requirements often mitigate potential impacts.

Section Format

Each technical section in Chapter 3 begins with an **introduction** that explains the issues to be evaluated, provides a general summary of comments received in response to the NOP, and identifies the primary sources reviewed to prepare the analysis. The introduction is followed by a description of the Proposed Project's **environmental setting** and **regulatory setting** as it pertains to a particular issue.

The environmental setting establishes the baseline for that particular issue area and includes information relevant to the analysis of potential impacts. The regulatory setting provides a summary of applicable federal, state, and local regulations, plans, policies, and laws that are relevant to each issue area. The regulatory setting description in each section is followed by a discussion of the **methods of analysis** and the **thresholds of significance** used to evaluate Proposed Project–specific impacts. The **project-specific impacts** discussion is followed by an analysis of the **cumulative impacts** of the Proposed Project. This section addresses what the Proposed Project's incremental contribution to any existing cumulatively significant impacts would be and identifies mitigation measures, if required. The impact statement is prefaced by a number for ease of identification. An explanation of each impact and an analysis of its significance follow each impact statement. All **mitigation measures** are identified immediately following each impact discussion. The degree to which the identified mitigation measure(s) would reduce the impact is also described. Compliance with applicable laws, policies, and City regulations is assumed and will be identified in the impact analysis. In many cases, compliance with applicable laws, policies, or regulations would reduce the significance of a potential impact; and thus, would not be identified as a separate mitigation measure.

An example of an impact statement is shown below.

3.1-1: Would the Proposed Project have a substantial adverse effect on a scenic vista? This impact would be less than significant. (The significance finding prior to mitigation is included in each impact statement).

A discussion of potential impacts of the Proposed Project is presented in paragraph form. The Proposed Project–specific impacts associated with construction and operation of the Proposed Project are evaluated and compared to the threshold of significance for the particular impact. The analysis discusses the applicable local, state, and federal laws and regulations along with applicable general plan goals and policies that would reduce impacts, and assumes that the Proposed Project would comply with applicable laws, ordinances, goals, policies and regulations, and that the Proposed Project applicant would obtain all necessary permits and comply with all required conditions of those permits. In many instances, the actions that are necessary to reduce a Proposed Project impact are already required by existing laws or

requirements. The impact analysis concludes with a determination of the impact's significance in **bold type** (e.g., **significant impact, significant and unavoidable impact, potentially significant impact, less-than-significant impact, or no impact)**.

Mitigation Measures

A discussion of the applicable mitigation measures identified to reduce the significance of an impact immediately follows the impact analysis.

This section includes a statement indicating whether the mitigation measure would reduce the impact to a **less-than-significant level** or if the impact remains **significant and unavoidable** due to the absence of any available mitigation that could reduce the impact below the applicable threshold. A discussion of how the mitigation would reduce the impact is included before the mitigation measure.

Mitigation measures, if applicable, are numbered and presented in the following format.

> **AES-1** Statement of what, if any, mitigation measures are required.

Note that CEQA Guidelines, Section 15370, defines mitigation as follows:

- Avoiding the impact altogether by not taking a certain action or parts of an action
- Minimizing impacts by limiting the degree of magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

In addition, provided there is a "reasonable plan for mitigation" and contributions are "sufficiently tied to the actual mitigation" of the project's impacts, a commitment to contribute a fair share to such a program discharges an agency's mitigation duty under CEQA (*Save Our Peninsula Com. v. Monterey County Bd. of Supervisors* 2001) 87 Cal.App.4th 99, 141); see also CEQA Guidelines, Section 15130(a)(3) [recognizing that a project's contribution to a cumulative impact may be less than cumulatively considerable where "the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact"]; see also *Anderson First Coalition v. City of Anderson* (2005) 130 Cal.App.4th 1173).

Cumulative Impacts

An analysis of cumulative impacts follows the evaluation of Proposed Project impacts under existing conditions in each section in Chapter 3. As defined in CEQA Guidelines, Section 15355, cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the Proposed Project, together with other past, present, and reasonably foreseeable projects causing related impacts.

An introductory statement that defines the cumulative analysis methodology and the cumulative context being analyzed for the respective sections (e.g., buildout of the City's General Plan, development within the Bay Area Air Basin) is included under the "Cumulative Analysis" discussion. In some instances, a Proposed Project–specific impact may be considered less than significant but would be considered potentially cumulatively significant in combination with other development within the surrounding area. Or, in some instances, a potentially significant impact could result on a project level but would not result in a cumulatively considerable impact. The cumulative impacts analysis is presented in the same format as the impacts section, shown above.

3.0.2 TERMINOLOGY USED IN THIS EIR

This Draft EIR uses the following terminology to describe environmental effects of the Proposed Project:

- **Thresholds of Significance:** A set of criteria used by the lead agency to determine at what level or "threshold" an impact would be considered significant. Standards of significance used in this Draft EIR include those set forth in CEQA Guidelines Section 15065 (Mandatory Findings of Significance) and those derived from questions set forth in the most recent update to Appendix G to the CEQA Guidelines; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the City of St. Helena 1993 General Plan. In fashioning criteria based on these sources, City staff has also relied on its own professional judgment and experience in some instances. In determining the level of significance, the analysis assumes that the Proposed Project would comply with relevant federal, state, and local regulations and ordinances.
- **Less-than-Significant Impact:** A project impact is considered less than significant when it does not reach the standard of significance, indicating that there would be no substantial change in the environment. No mitigation is required for less-than-significant impacts.
- **Potentially Significant Impact:** A potentially significant impact is an environmental effect that could cause a substantial adverse change in the environment; however,

additional information is needed regarding the extent of the impact to make the determination of significance. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.

- **Significant and Unavoidable Impact:** A significant and unavoidable impact is an environmental impact that cannot be mitigated to a less-than-significant level. There are no feasible mitigation measures available to reduce the significance of the impact; therefore, the impact is considered significant and unavoidable.
- **Cumulative Impact:** According to CEQA, “cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts” (CEQA Guidelines, Section 15355). CEQA requires that cumulative impacts be discussed when the “project’s incremental effect is cumulatively considerable” (CEQA Guidelines, Section 15130[a]).

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3.1 AESTHETICS / VISUAL RESOURCES

3.1.1 Introduction

This section describes the aesthetics and visual resources present in the Project area and discusses applicable federal, state, and local regulations pertaining to protection of visual resources. This section evaluates the potential effects on visual resources associated with development of the proposed Hunter Subdivision Project (Proposed Project).

Comments received in response to the Notice of Preparation (NOP) included concerns regarding the proposed design of the residential units, impacts to surrounding viewsheds and scenic vistas, impacts to landscape buffers, and light spillover impacts to the night sky. All of the concerns raised are addressed in this section. A copy of the NOP and comments received is provided in Appendix A. The Proposed Project applicant is only requesting approval of a Tentative Subdivision Map at this time; therefore, no building design details have been provided and an analysis of project design features is not included. As noted in Chapter 2, Project Description, if the Proposed Project is approved the City would require additional subsequent discretionary approvals, including Design Review.

Information contained in this section is based on site plans, a field survey, and City planning documents (including the 1993 General Plan and the 2019 General Plan). Other sources consulted are listed in Section 3.1.6, References.

3.1.2 Environmental Setting

This section describes the existing setting in the Project area and identifies the resources that could be affected by implementation of the Proposed Project.

Regional Setting

The City of St. Helena (City) is situated within the Napa Valley floor, bounded by the Mayacamas Mountain Range on the western and northern sides and the Howell Mountains on the eastern side. The region is located within the Napa Valley American Viticultural Area and is famous for the widespread vineyards that characterize the valley. The Napa River bisects the valley and flows through the eastern portion of the City. The City's terrain ranges from flat agricultural areas to gently rolling foothills. The primary regional access route to the City is State Route (SR) 29, a north-south corridor that passes through the Napa Valley. The City has a rural aesthetic characterized by open space, agricultural lands, wineries, wooded hillsides, and stream corridors. The City has views of many hills and mountainsides, including Mount St. Helena, a peak of the Mayacamas Mountain Range located in Robert Louis Stevenson State Park.

Development within the City is relatively compact, with the majority of commercial development and wineries situated along the SR 29 corridor, and residential development surrounding the Central Business District along SR 29 between Sulphur Springs Creek and Pine Street. Residential development within the City is primarily located west of Main Street and north of Sulphur Springs Creek. Flat agricultural lands surround the central developed area of the City, while limited rural residential development occupies wooded hillsides to the east and west of the City.

Project Site

The 16.9-acre Project site is characterized by row vineyards in the western portion and undeveloped land consisting of annual grasses in the eastern portion of the site (see Figure 2-2 in Chapter 2, Project Description). Approximately 40% of the Project site currently supports a small vineyard. Based on the Proposed Project's grading plan, the elevation of the site ranges from approximately 230 feet above mean sea level (amsl) on its southern edge to approximately 212 amsl on its northern edge. Adams Street terminates at the western boundary of the site, three blocks east of downtown and SR 29. Office uses, including an off-white two-story building with large reflective windows, are located immediately adjacent to the site's most western edge at the terminus of Adams Street.

Vineyards are located to the north and northeast of the Project site, with a small number of large 1- and 2-story single-family residences located north of the Project site. The George and Elsie Wood Public Library, a one-story tan-colored building with a small patch of vineyards, is located approximately 0.1 of a mile northwest of the Project site. A gravel maintenance road/public trail lined with a simple wood-post and barbed wire fence abuts the northern boundary of the Project site. One and two-story single-family and multi-family residential development is located to the south of the site. Residences to the south of the Project site include a mix of neutral-colored buildings in a variety of styles with mature trees and shrubs. Single-family residences front Grove Court and Monte Vista Avenue to the east and some include backyards while others do not. The Vineyard Valley Mobile Home Park and multi-family housing in the Hunts Grove Apartments complex are located south and east of the Project site. Multi-family residences are primarily located along Hunt Avenue and either front the street or face the Project site. These residences are separated from the Project site by either a low stone wall or a taller wood and wire fence. Residences along Del Campo Court and Del Rio Court are neutral-colored single-family residences that face the Project site.

The Napa River is located approximately 0.1 miles north and northeast of the Project site.

The Project site was designated as high-density housing in the 1975 St. Helena General Plan as Medium Density Residential (MDR) in the City's 1993 General Plan (City of St. Helena 1993), and as MDR in the 2019 General Plan. Land designated as MDR typically is for residential

purposes, and provides for single-family detached and attached homes, secondary residential units, public and semi-public uses, and similar and compatible uses. The zoning designation for the Project site is also Medium Density Residential (MR) (City of St. Helena 2018).

Viewpoints

A viewshed is an analytical tool used to aid in the identification of views that could be affected by a project. The viewshed is defined as the surrounding geographic area from which a project is likely to be seen. Locations of key viewpoints that depict the viewshed visible in the Proposed Project vicinity are depicted in Figure 3.1-1 and photos from these representative viewpoints are shown in Figures 3.1-2 through 3.1-5.

Views from the Project Site

Long-range views from the Project site include views of surrounding wooded hillsides with tall trees. Surrounding hillsides including the Howell and Mayacamas mountains are visible from the Project site looking west and northwest due to the flat topography and lack of tall intervening structures. Short to mid-range views to the north of the Project site consist of the gravel maintenance road/public trail that borders the site, with vineyards visible beyond. Buildings associated with vineyards to the north of the site are also visible. Views to the south/east include views of single-family residences along Grove Court and Monte Vista Avenue, along with grassland vegetation and native plants and shrubs associated with undeveloped areas to the east of the gravel maintenance road/public trail. Adams Street is visible to the west of the Project site, along with a two-story off-white office building and the George and Elsie Wood Public Library, which are located on Adams Street. Short-range views of single-family and multi-family residences with a mix of mature trees are visible looking south/east from the Project site.

Views of the Project Site

The Project site is visible from residences to the south, as well as from the intersection of Hunt Avenue and Starr Avenue, where there is a clearing in the dense vegetation that borders the site to the south and southwest (Figure 3.1-2). From this intersection, the on-site vineyard and annual grasses on the site are visible in the foreground, with the Howell Mountains visible in the background.

The Project site is visible from the eastern terminus of Adams Street, which is adjacent to the western portion of the site (Figure 3.1-3). Views from this location are of the on-site vineyard, as well as vineyards on surrounding properties. Surrounding wooded hillsides can be clearly seen in the background from this location. Large, mature trees are also visible at the southern boundary of the site. From the gravel maintenance road/public trail to the north and northwest of the Project site there are uninterrupted views of the vineyard and grass areas on the Project site

in the foreground with views of multi-story residential units and tall evergreen trees in the background (Figure 3.1-4). Surrounding mountain ranges are largely blocked from view from the gravel maintenance road/public trail looking south towards the Project site. Views of the Howell Mountains can be seen looking to the east from the trail (Figure 3.1-3), and the Mayacamas Mountains can be seen looking towards the west from the trail (Figure 3.1-5). Residences along Del Rio Court to the southeast of the Project site experience views of grass and vegetation on the site in the foreground, and views of the Howell Mountains in the background (Figure 3.1-5). Adjacent residences are considered to have high sensitivity – both their expectations of visual quality and their time of exposure is typically greater than motorists traveling on adjacent roadways that comprise the other viewer groups.

The Project site is not visible from major transportation corridors such as SR 29/Main Street or the Silverado Trail, which is located approximately 0.2 miles east of the Project site. The Project site is also not visible from public parks in the vicinity of the site.

Scenic Resources

The California Department of Transportation designates SR 29 as an eligible state scenic highway (Caltrans 2018). The Project site is located approximately 0.2 miles east of SR 29. However, it is not visible from the highway due to intervening trees, buildings and structures. While there are many scenic resources and vistas within the City, there are no specific scenic resources or vistas designated for protection in the City's 1993 General Plan or the 2019 General Plan. No other scenic viewsheds or scenic highways are identified in the Project vicinity. No rock outcroppings or other significant natural or historical features exist on the site.

Light and Glare

Nighttime lighting is necessary to provide and maintain a safe and secure environment. Light that falls beyond the intended area of illumination is referred to as "light trespass." Types of light trespass include spillover light and glare. Spillover light, which is light that illuminates surfaces beyond the intended area, is typically caused by artificial lighting sources, such as from building security lighting, signs, parking lot lights, roadway lights, and stadium lights on playing fields. Spillover light can adversely affect light-sensitive uses (i.e., adjacent residences), by creating unwanted illumination. Because light dissipates as it moves farther from its source, the intensity of the lighting source is often increased to compensate for dissipating light, which can increase the amount of light that illuminates adjacent uses. The type of light fixture determines the extent to which light will spill over onto adjacent properties and/or be visible from far away. Modern, energy-efficient fixtures that face downward, such as cutoff-type fixtures and shielded light fixtures, are less obtrusive than light fixtures that have been used in the past.

SOURCE: Bing Maps 2019

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0 120 240 Feet

FIGURE 3.1-1

Photo Locations

Hunter Subdivision Project

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View 1: Views from Gravel Maintenance Road/Public Trail Looking North

View 2: View from intersection of Hunt Avenue and Starr Avenue looking north

FIGURE 3.1-2

Existing Views

Hunter Subdivision Project

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View 3: View from the eastern terminus of Adams Street looking toward project site

View 4: View from the existing gravel maintenance road/public trail looking east

FIGURE 3.1-3

Existing Views

Hunter Subdivision Project

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View 5: View from the existing gravel maintenance road/public trail looking south

View 6: Views of on-site vineyards from gravel maintenance road/public trail

FIGURE 3.1-4

Existing Views

Hunter Subdivision Project

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View 7: View from the existing gravel maintenance road/public trail looking west

View 8: View from Del Rio Court looking west

FIGURE 3.1-5

Existing Views

Hunter Subdivision Project

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The second type of light trespass is glare, which results when a light source in the field of vision is brighter than the eye can comfortably accept. Glare can result from sunlight or from artificial light reflecting off building exteriors, such as glass windows, metal roofs or other highly reflective surface materials. Squinting or turning away from a light source is an indication of glare. Cutoff-type light fixtures minimize glare because they emit relatively low-intensity light at these angles. Glare resulting from sunlight reflecting off building exteriors can be reduced with design features that use low-reflective glass and exterior materials and colors that absorb, rather than reflect, light.

As the Project site is undeveloped, it does not contain existing light or glare sources. Existing light sources in the vicinity of the site include internal and external lighting from residences to the south, west and east of the Project site, vehicle headlights along adjacent roadways and buildings to the north of the site. Streetlights also line Adams Street to the west and Starr Avenue to the south at regular intervals up until the Proposed Project boundary.

3.1.3 Regulatory Setting

Federal Regulations

There are no federal regulations pertaining to visual resources that would apply to the Proposed Project.

State Regulations

The following state regulations would apply to the Proposed Project.

California Scenic Highway Program

California's Scenic Highway Program was created by the Legislature in 1963 to preserve and protect scenic highway corridors from change which would diminish the aesthetic value of lands adjacent to highways. The state laws governing the Scenic Highway Program are found in the Streets and Highways Code, Section 260 et seq. The State Scenic Highway System includes a list of highways that are either eligible for designation as scenic highways or have been so designated. County roads can also become part of the Scenic Highway System. To receive official designation, the county must follow the same process required for official designation of State Scenic Highways.

SR 29 throughout Napa County is eligible for designation as a state scenic highway. Although SR 29 is located approximately 0.2 miles from the Project site, the site is not visible from the highway due to intervening buildings and structures. There are no other designated or eligible highways within the Project vicinity (Caltrans 2018).

Local Regulations

The following local land use policies would apply to the Proposed Project.

City of St. Helena 1993 General Plan

The Land Use and Growth Management Element, Community Design Element and Open Space Element of the St. Helena 1993 General Plan provides guiding and implementing policies regarding visual resources. The City's General Plan states, "The "planned unit development" approach provides developers with greater design flexibility while ensuring the City adequate design review. The intent is to create developments that complement existing community character. The City will favor planned unit developments that provide generous amounts of open space, covered parking, the separation of pedestrian and vehicle traffic, and on larger tracts, a variety of housing types: single-family detached, duplex, and multi-family dwellings, in one and two-story structures" (City of St. Helena 1993).

Land Use and Growth

Policy 2.6.15: Encourage new residential development in all density ranges that is consistent with scale and character of the older residential districts of the City, particularly the neighborhoods west of Main Street.

Policy 2.6.17: Minimize situations where new residential development will block public view of surrounding vineyards.

Policy 2.6.19: Permit higher density housing in single family neighborhoods as long as the development character of the single family area is maintained (i.e., lot widths, orientation to street, building heights, etc.).

Policy 2.6.20: Encourage the subdivision and development of larger parcels (3 acres or more) as "planned unit developments" to ensure a more comprehensive and creative approach to planning the development as a single unit.

Community Design

Policy 4.3.4: Strengthen community identity by appropriate building design, size, and site landscaping.

Policy 4.3.5: Require future residential development to conform to the pattern and density of older, neighboring areas of town in order to complement existing town character and ensure that densities are high enough to protect against unnecessary incursion into vineyard agricultural areas.

Policy 4.3.23: Set residential densities throughout St. Helena at levels that will ensure that minimum encroachment on productive vineyard land or open space will occur during the life of the plan.

Policy 4.3.24: Encourage higher density residential development near the commercial core to provide convenient pedestrian access to shopping and services. Ensure that higher density projects are similar in design and scale to adjacent single family neighborhoods.

Policy 4.3.25: Within the primary urban area of St. Helena, encourage variety in housing types and density consistent with those found in the older neighborhoods of town. Encourage varying lot widths and configuration, but limit the allowable building envelope by parcel size to avoid overbuilt conditions.

Policy 4.3.26: Encourage residential building siting and design that is similar to that found in the older neighborhoods in town. In these areas consistent setbacks, porches and generously landscaped front yards add to community enjoyment by all. Restrict location of driveways and garages to minimize their visual impact on the street.

Policy 4.3.27: Encourage large specimen street trees and generous landscaping to shade homes and the street and to link various neighborhoods.

Policy 4.3.28: Limit residential development that backs up to vineyards and thereby blocks views of those vineyards by passersby.

Policy 4.4.2: When reviewing development proposals in areas not already served by a system of streets, City staff shall ensure that proposed development is sited in such a manner that it will not obstruct the logical extension of existing streets and infrastructure, or the expansion of the City's grid-like pattern of streets into newly developing areas. As with existing street patterns, new extensions of the city grid need not be rigid in their dimensions and layout, but should be evaluated on their contribution to the formation of a logical, interconnected system of streets that facilitates the safe and efficient flow of pedestrian, bicycle, and vehicular traffic, and establishes an attractive neighborhood environment. Staff can consider variations to the logical extension of existing streets if the project proponent can demonstrate that safety, aesthetics, topography, or other factors make such an extension ineffective or undesirable, or that such an extension would cause the landowner undue hardship. Street widths should be the minimum adequate for two-way traffic and parking. Narrower street widths as found in the older parts of St. Helena contribute to a more intimate small town scale and discourage speeding.

Policy 4.4.3: Driveways and garages should be as unobtrusive as possible, with garages preferably located at the rear of the lot.

Policy 4.4.4: Where streets are at the edge of the community, adjacent to vineyards, development should only occur on one side, leaving open views to the agricultural lands and hillsides.

Policy 4.5.1: The sense of a strong connection to the surrounding agricultural open space and hillsides must be preserved in the future. Views of vineyard, hillsides, creeks and major landscape features should be maintained.

Policy 4.5.2: Open space should be brought into the community wherever possible as a reminder of the natural setting of the community. Landscaping of residential areas should be generously oriented toward the enjoyment of the passerby. Street tree planting programs shall be pursued throughout the city to provide shade, a special character, and pedestrian comfort. Vineyard plantings within residential and commercial areas is encouraged.

Policy 4.6.1: Retain key undeveloped open space areas where views to the vineyard and hills can be maintained. Require that these areas be planted in vines or other low vegetation.

Policy 4.6.2: Discourage the use of cul-de-sacs. Where cul-de-sacs are necessary, do not allow houses to block views out to the vineyards. View corridors out from the ends of streets should be preserved.

Policy 4.6.3: Use streets to form the edge of the developed community. Maintain the edge fronting the vineyards as permanently undeveloped so that views of vineyards and beyond can be enjoyed by the general populace. Orient lots facing across the street to orient toward this view.

Policy 4.7.3: The new eastern entry via the Adams extension should be planned to maximize open space and vineyard views. Where possible, vineyards should be maintained up to the road edge. Residential development should front on the road with sufficient lot depth to allow a generous setback for sound and privacy. Large specimen street trees should be planted in residential areas to mitigate the scale of the street and encourage pedestrian and bicycle movement.

Policy 4.7.4: Existing east and west entries should be maintained in their current appearance, protecting views of vineyards and the surrounding hillsides wherever possible.

Open Space and Conservation

Policy 6.4.11: Integrate existing significant trees into future development.

Policy 6.4.12: Require replacement trees where existing significant trees cannot be saved.

Policy 6.4.13: Require street trees as a condition of new development.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Land Use and Growth Management Element, Community Design Element, and Open Space Element of the 2019 General Plan provide guiding and implementing policies regarding visual resources. Compared to the 1993 General Plan, the 2019 General Plan is similar in encouraging residential development that is consistent with the design and character of the City's existing older neighborhoods (City of St. Helena 2019).

Land Use and Growth Management

Policy LU2.2: Encourage new residential development that is consistent in design, size, color, and floor area ratio (FAR) with the older residences in the neighborhood.

Policy LU2.4: Encourage the subdivision and/or development of larger parcels as Planned Unit Developments to ensure a more comprehensive and creative approach to planning the development as a single unit. This does not prohibit use of Planned Unit Developments on parcels less than three acres.

Policy LU2.5: Encourage the development of higher density housing in areas near the center of the city and close to recreation and services, such as transit, retail, and public facilities.

Policy LU2.6: Allow residential density at the higher end of the permitted range for single family development within Medium and High Density Residential Land Use designations as long as the development character of the single family area is maintained, including lot widths, orientation to street, building heights, onsite parking, traffic, and noise, among other considerations.

Policy LU2.7: Ensure safe, walkable, and bikeable residential neighborhoods and vibrant, livable streets.

Community Design

Policy CD1.1: Ensure high-quality design and construction through a robust design review process.

Policy CD1.8: Require, to the extent feasible, that all new development include underground utilities to minimize their negative visual impact. In addition, funding sources to underground electrical lines shall be sought so the undergrounding of existing overheard lines can occur over time.

Policy CD3.1: Limit building envelope sizes and require adequate side and rear setbacks to preserve the character of existing residential areas and to avoid overbuilt lots. Require future development to conform to the pattern and density of the neighboring areas. In order to complement existing town character and protect against incursion into vineyard agricultural areas.

Policy CD3.2: Ensure that new residential designs contribute positively to existing neighborhoods by complementing character and incorporating design features, such as front porches, façade articulation and stepbacks.

Policy CD3.3: Encourage the use of landscaping and tree plantings as buffers between sidewalks and residential uses. Discourage the removal of existing trees and adopt more comprehensive tree preservation standards.

Policy CD5.1: Preserve the visual and physical connection to agriculture by protecting views from streets, parks, and open spaces to vineyards, agriculture, and hillsides. Where new streets are extended adjacent to agriculture, encourage hillside, and vineyard views by maintaining agricultural activities at the road edge. Existing east and west entries should be maintained in their current appearance, protecting and improving views of vineyards and the surrounding hillsides wherever possible.

Policy CD5.C: New development shall not result in significant light, glare, and noise that could affect residents, visitors, and wildlife. Lighting shall be shielded to reduce glare and shall be cast downwards. Outdoor lighting shall occur primarily for the purpose of security and safety. Upcast lighting shall be discouraged to minimize impacts on wildlife and to retain the agricultural ambience of St. Helena. All lighting shall conform to the Lighting Zone 2 requirements of Title 24 of the California Building Code.

Open Space and Conservation

Policy OS4.1: Protect and enhance tree resources in developed and undeveloped areas. Efforts should include: adequate maintenance of street trees, requiring replacement trees where existing significant trees cannot be saved, and requiring street trees as a condition of new development.

St. Helena Zoning Ordinance

Chapter 17.164, Design Review, of the City's Zoning Ordinance addresses requirements for design review of a project. Design review is required for any new development or the modification of the exterior of structures within the City. Design review is conducted to promote qualities in the environment which bring value to the community, to foster attractiveness and functional utility within the community, to preserve the character and quality of the community's heritage, to protect public investments in the area, and to encourage a mix of uses within permissible use zones. If the Proposed Project is approved, future construction of residential structures within the Project area would require design review.

St. Helena Subdivision Ordinance

Chapter 16.32, Design Standards and Improvements, Section 130 of the City's Municipal Code protects areas such as ridges, hilltops, and other scenic areas from development that impacts scenic resources. The ordinance mandates that development must ensure adequate mitigation for protection and/or preservation of scenic resources within these areas and encourages using the form of the land and vegetation to ensure separation of building areas from scenic areas. Mitigation may require the use of plantings that are consistent and compatible with those in the area. The ordinance states that screening required for shielding of development areas should consist of natural materials of the area, including natural vegetation or land form modification to conform to the natural terrain.

The City's Municipal Code does not contain lighting requirements pertinent to the Proposed Project and does not contain any policies that address the protection of dark skies from lighting and glare impacts.

3.1.4 Impacts

Methods of Analysis

The value attached to changes in visual character is largely subjective. This EIR does not assign a judgment of "good" or "bad" to a proposed change; rather, it identifies any "substantial adverse effect," as defined below, as a significant environmental impact.

The determination of when changes to the visual environment become a substantial adverse effect is based on the following primary factors: (a) the existing scenic quality of an area; (b) the level of viewer exposure and concern regarding visual change; and (c) the level of actual visual change caused by the project as seen by a given viewer group. The overall visual sensitivity is first established based on existing visual quality, viewer exposure, and viewer concern. These factors are then considered together with the level of expected visual change or contrast and significance. Visual change is an overall measure of the alteration or change in basic visual attributes such as form, line, color, and texture as a result of the project. Thus, a substantial adverse effect can occur when a project results in high levels of visual change or obstruction of scenic views by sensitive receptors.

The California Environmental Quality Act (CEQA) does not require that privacy be addressed in an EIR because it is not an environmental issue. In addition, views of a project by a limited number of individuals do not constitute public views and are typically not evaluated under CEQA (See *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477). This case confirmed that if agency policy does not protect private views, then impacts to such private views are not significant impacts under CEQA. The most recent update to the CEQA Guidelines also clarifies that public views "are those that are experienced from a publicly accessible vantage point." (CEQA Guidelines Appendix G).

A description of the Project site and the surrounding area is derived from a site visit and photographs. The City's 1993 General Plan and 2019 General Plan were both reviewed to determine what visual elements have been deemed valuable by the community. The impact analysis focuses on the manner in which development of the Project site could alter the visual elements or features that exist in or near the Project area.

Visual simulations of what the site could look like from various viewpoints were prepared for the Proposed Project, which are referenced to prepare the impact analysis. Because the Proposed Project applicant is only requesting approval of a Tentative Subdivision Map, no building designs or architectural features are available. Therefore, the visual simulations are provided only to help the reader visualize how the Project site could change once developed. The visual simulations only depict building massing and proposed landscaping, consistent with the MR zoning and the landscape plan provided by the Proposed Project applicant. To represent future development a random mix of one and two-story buildings is included. Building heights range from approximately 18-feet for a one-story residence up to 28-feet for a two-story unit. The multi-family units were assumed to be up to 30-feet tall, the maximum building height allowed under the MR zoning. The grade of the Project site, with the exception of the multi-family housing (Lot 52), is based on the Proposed Project's grading plan. Since no grading plan was provided for the multi-family housing, all buildings and roads were placed on existing grade level. Trees are shown at an estimated 10 years growth with heights varying from 16 to 25 feet.

All tree species are shown during the summer months with full green leaves. The Proposed Project's proposed landscape plan shows a tree on the east side of Adams Street, directly in front of where the photo was taken (see Figure 2-6 in Chapter 2, Project Description). In Simulation 1, this tree was removed as it blocked views of the proposed development.

Adverse visual effects can include the loss of natural features or areas, the removal of urban features with aesthetic value, or the introduction of contrasting urban features into natural areas or urban settings. Natural features may include but are not limited to open space; native or ornamental vegetation/landscaping; topographic or geologic features; and natural water sources. The loss of natural aesthetic features or the introduction of contrasting urban features may have a local impact, or, if part of a larger landscape, may contribute to a cumulative decline in overall visual character. The vineyard present in the southwestern portion of the Project site would be considered a natural feature.

Urban features that may contribute to a valued aesthetic character or image may include: structures of architectural or historic significance or visual prominence; public plazas, art or gardens; heritage oaks or other trees or plants protected by the City; consistent design elements (such as setbacks, massing, height, and signage) along a street or district; pedestrian amenities; landscaped medians or park areas; etc. There are no urban features present on the Project site.

This analysis assumes that development of the Proposed Project would comply with the City's 1993 General Plan goals and policies and other relevant requirements; therefore, such policies and requirements are not specifically identified as mitigation.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

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

Regarding the visual character and quality of the site, this site exhibits characteristics of both urban and non-urban character. The Project site is within the City's adopted Urban Limit Line, is designated for urban (medium density residential) development and is adjacent to existing residential development. The site is also adjacent to an agricultural area and the Napa River, and therefore exhibits non-urban characteristics. The City's Municipal Code includes Chapter 16.32, Design Standards and Improvements, which provides guidance for scenic resources (Section 16.32.130), aesthetics, and design, including zoning standards for height, bulk, and setbacks which are relevant to the Project and have been reviewed.

The visual impacts of the Proposed Project are evaluated within this framework, while giving consideration to the non-urban aspects of the Proposed Project location.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this document.

Scenic Resources within a State Scenic Highway

As discussed previously, although the Project site is located approximately 0.2 miles from SR 29, an eligible state scenic highway, it is not visible from the highway due to intervening trees, buildings and structures. The Project site does not contain any scenic resources such as rock outcroppings, or other significant natural or historical features that are visible from a state scenic highway and the Proposed Project would not limit views of such features from SR 29. Therefore, potential impacts to scenic resources (second significance threshold listed above) are not discussed further.

Impacts and Mitigation Measures

3.1-1: Would the Proposed Project have a substantial adverse effect on a scenic vista? This impact would be less than significant.

The City's 1993 General Plan as well as the City's recently adopted 2019 General Plan do not designate any specific scenic resources or vistas within the City for protection. The term vista generally implies an expansive view, usually from an elevated point or open area. A scenic vista is generally defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. This can include public views of agricultural open space, vineyards, creeks, and major landscape features. Scenic vistas can also provide views of significant structures and buildings.

The Proposed Project is proposing a Tentative Subdivision Map that includes lots for single-family homes as well as a 3.4-acre parcel designated for multi-family housing. Future development of the site would introduce new housing in an area that is currently undeveloped grassland with the exception of a small vineyard. Public views of the Project site are limited and generally available from the gravel maintenance road/public trail that borders the site along the north and northwest in addition to nearby public and private roads including Adams Street to the south, Starr Avenue to the southeast, and Del Rio Court to the northeast of the site. Public views from these areas include views of green grass during the early spring before the grass areas turn brown through the remainder of the year. Included are views of a mature vineyard with elevated trellises located in the south/southwest portion of the site. The Project site does not represent a scenic vista because it does not contain unique resources that would be considered a highly valued landscape enjoyed by the public, nor is the site visible from an elevated area that affords public views of a highly valued landscape. In addition, given the size and location of the Project site it does provide expansive views that constitute a vista. Views of the mountains and hillsides to the north and northwest of the site would be considered a scenic vista.

The 1993 General Plan does not contain any goals or polices specific to protecting or preserving scenic vistas, but Policy 4.5.1 of the 1993 General Plan is intended to preserve a sense of a strong connection to the surrounding agricultural open space and hillsides by maintaining views of vineyards, hillsides, creeks and major landscape features. This is essentially re-stated in Policy CD5.1 in the 2019 General Plan, which intends to "Preserve the visual and physical connection to agriculture by protecting views from streets, parks, and open spaces to vineyards, agriculture, and hillsides." The Proposed Project has been designed to protect views of the surrounding hillsides and open spaces areas through the orientation of Starr Avenue and Adams Street.

Development of the Project site would be required to comply with the City's land use, and development guidelines set forth in the City's Municipal Code. Specifically, Chapter 16.32, Design Standards and Improvements which requires scenic areas, defined as areas that contain ridges or hilltops, to include adequate mitigation for protection and/or preservation of the scenic resources, defined as intermittent, seasonal, or permanent waterways; tidal marshes or freshwater marshes; significant wildlife habitat; or significant archeological, paleontological or historic sites; undergrounding of utilities unless exempted; and grading plans that maximize retention of natural landforms such as rolling hills and areas of extensive vegetation. In addition, the Proposed Project applicant is required to comply with Chapter 17.164, Design Review, of the City's Zoning Ordinance which sets forth specific design standards for residential development. Although development of the Project site would remove a majority of the existing vineyard and open space on-site and may decrease unobstructed views of the hillsides to the north and west visible from public viewpoints, the Project site itself is not considered a scenic

vista, does not contain a highly valued landscape, nor is it located within a scenic vista identified in either the 1993 General Plan or the 2019 General Plan. Therefore, the Proposed Project would not have a substantial adverse impact on a City-designated scenic vista and the impact would be **less than significant.**

Mitigation Measures

None required.

3.1-2: Would the Proposed Project conflict with zoning and other regulations that govern scenic quality or substantially degrade the existing visual character or quality of public views of the site and its surroundings, or conflict? This impact would be less than significant.

The Proposed Project includes a Tentative Subdivision Map, which, if approved, would allow for development of the Project site with single-family residential units as well as accessory dwelling units, attached multifamily residential units, roads, and landscaping. The Project site is presently undeveloped with the exception of an existing vineyard located in the southwestern portion of the site, as described in Section 3.1-2. Development of the Project site would change the undeveloped character of the site from vineyard and annual grasslands to a developed urbanized environment. Based on the Proposed Project's grading plan the proposed elevation of the site would be approximately 4 feet higher than the existing elevation of surrounding properties, primarily along the southeast boundary. Vineyards in the southwestern "panhandle" portion of the Project site would be retained, but the remainder of the existing vineyard would be removed to accommodate development.

Because the current Proposed Project entitlement is a Tentative Subdivision Map, once housing plans are submitted the Proposed Project applicant is required to comply with the City's Design Review Ordinance (Chapter 17.164 of the City's Zoning Ordinance) and undergo design review to ensure the proposed development is visually consistent and compatible with the applicable General Plan and with adjacent buildings as well as the existing environment.

It is assumed future development would comply with the building height and mass requirements of the site's MR zoning which allows buildings up to 30 feet tall, accessory buildings up to 15 feet tall, and widths not exceeding 60% of the width of the lot as measured at the front elevation (see Section 17.40.060 of the Zoning Code). The Proposed Project is consistent with the type and density of existing residential development in the Project vicinity, and is consistent with 1993 General Plan Policy 2.6.15, which encourage new residential development consistent with the scale and character of the older residential neighborhoods in the City. Under the 1993 General Plan MDR land use designation a density of between 5.1 to 12.0 dwelling units per acre (du/acre) is permitted. The Proposed Project is proposing an average density of 5.1 du/ac. In

addition, the Proposed Project is also consistent with Policy LU2.2 included in 2019 General Plan, which is similar to the previous policy in encouraging new residential development that is consistent in design and floor area ratio with older residences in the neighborhood, as well as Policy CD3.1 which limits building envelopes and requires side and rear setback to preserve the character of existing residential areas. Proposed streets also include landscape strips or medians for street trees. Appropriate landscaping is required under the City's Design Review Ordinance (Chapter 17.164) and Subdivision Ordinance (Chapter 16.32 Section 130).

The Proposed Project is within the City's Urban Limit Line and would be consistent with the type and character of residential development adjacent to the site. The design of the subdivision maintains the existing street pattern and maintains existing street views of the surrounding area, consistent with 1993 General Plan Policies 4.4.2, 4.4.4, 4.5.1 and 4.6.3, and 2019 General Plan Policy CD5.1. New and extended streets within the Project site would be consistent with existing roadway patterns, per 1993 General Plan Policy 4.4.2. Importantly, Street "B" would terminate in an easement that would maintain views of the riparian corridor and hills to the northeast (see Figure 2-4, in Chapter 2, Project Description). On-site electrical, natural gas and telecommunications connections would all be installed subsurface and no overhead facilities would be provided, consistent with 2019 General Plan Policy CD1.8 which encourages undergrounding of such services to reduce visual clutter. The Proposed Project would not conflict with the underlying MR zoning designation and is generally consistent with goals and policies that address visual resources in the City's 1993 General Plan and 2019 General Plan and the impact would be **less than significant.**

Due to the location of the Project site adjacent to the 1993 General Plan Urban Limit Line and near rural undeveloped land to the north/northwest and the Napa River to the northeast, an analysis of the how development of the site could degrade the existing visual character and affect the quality of public views of the Project site and its surroundings is included. Due to the flat topography of the City and dense development to the west and south of the Project site along with trees and other landscaping, views of the site are limited and primarily available from private property (i.e., backyards), at the terminus of Starr Avenue and Adams Street, and along Del Rio Court (a private street) within the immediate vicinity of the site. The gravel maintenance road/public trail that borders the north/northwest boundary of the site used by the public as a walking trail also provides public views of the site. Long-range views of surrounding wooded hillsides are visible from public areas surrounding the site due to its flat topography and lack of tall intervening structures. The Proposed Project would modify long-range views of existing vineyards located to the west and on the Project site as well as views of rolling hillsides which would be partially blocked by development of new residences. However, although long-range views of hillsides and views of the on-site vineyard and open space are available in the vicinity of the Project site, these views are not unique in that views of these features are available throughout the City.

To illustrate how development of the site could look and how it could affect public views and the existing visual character, visual simulations have been prepared. The visual simulations do not provide building designs or architectural features because the Proposed Project applicant is only requesting approval of a Tentative Subdivision Map at this time, thus the visual simulations only include building massing and proposed landscaping to demonstrate how the Project site could be altered with development.

A description of these viewpoints is included in the discussion below and the location of viewpoints is provided on Figure 3.1-6. These viewpoints include public views of the Project site from Starr Avenue, the extension of Adams Street, the gravel maintenance road, and from Del Rio Court (a private street). As described previously, vineyards in the southwestern "panhandle" portion of the Project site would not be removed. However, these viewpoints shown in Figure 3.1-7 through 3.1-10 include those areas where the vineyards would be removed and visual changes to the Project site would be greatest.

As shown in Figure 3.1-7, the view looking northeast from the proposed extension of Adams Street currently includes views of the existing maintenance road, a portion of the existing vineyard, open space with green grasses, evergreen trees in the background to the northeast bordering homes, and hillsides in the background to the north. The Proposed Project would change views at this viewpoint through removal of the vineyards and development of roads, residences, and new landscaping. The existing maintenance road at the forefront of this view would be replaced with a small section of paved road (Adams Street). Proposed Project streets also include landscape strips or medians for street trees which would reduce the effects of visual change and provide consistency with the surrounding neighborhoods. Hillsides in the background would still be available to the north, but trees bordering residences closer to the northeast would be blocked from view by the new residential units. While these views from the existing eastern terminus of Adams Street would change, as shown in the visual simulation provided in Figure 3.1-7, the road would form an edge between the proposed residential development and agricultural uses to the north and northwest and would preserve public views to the north and west from the existing trail, consistent with 1993 General Plan Policy 4.4.4 to leave open views of agricultural lands and hillsides, Policy 4.6.3 to maintain the edge fronting vineyards as undeveloped to preserve views, and Policy 4.7.3 to maximize open space and vineyard views near Adams Street.

SOURCE: Bing Maps 2020

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0 120 240 Feet

FIGURE 3.1-6

Visual Simulation Locations

Hunter Subdivision Project

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Existing Conditions - Looking northeast from the proposed extension of Adams Street

Visual Simulation - Looking northeast from the proposed extension of Adams Street

FIGURE 3.1-7

Simulation 1

Hunter Subdivision Project

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As shown in Figure 3.1-8, public views from the proposed extension of Starr Avenue looking north and northwest across the Project site would change from the existing undeveloped character to a developed environment. Existing views include limited views of the hillsides to the north and evergreen trees bordering residential uses farther to the east as well as green grassland that characterizes the Project site. A portion of the vineyard is also visible, with plantings arranged in a parallel fashion running northwest to southeast. The visual simulation in Figure 3.1-8 illustrates how public views could be affected by the Proposed Project due to the introduction of new buildings into the area. The extension of Starr Avenue would maintain the existing northwest view of open space and the hills in the background, although new houses would partially restrict this view from the existing road terminus, as shown in the figure. The existing vineyards would be replaced with residential homes and a paved road would replace the on-site grassland. The change to the Project site would be similar to the views presented in Figure 3.1-7 from the extension of Adams Street.

Figure 3.1-9 shows the existing and proposed views from the area looking south/southeast from the maintenance road. Existing long-range views include evergreen trees and hillsides in the distance. On the Project site itself, there is a view of a stretch of undeveloped green grassland in the foreground with vineyards visible in the distance. The Proposed Project would change public views of this area by introducing residential homes and a paved road (Street “C”) surrounded by street trees. As shown in the visual simulation in Figure 3.1-9, new housing development in the foreground would be generally consistent with the height of existing trees in the background, ensuring that views of the hillsides to the south from this area are maintained. The Tentative Subdivision map includes a setback of undeveloped space between the proposed Street “C” and the maintenance road, as shown in the visual simulation.

As shown in Figure 3.1-10, the existing view generally looking west from Del Rio Court includes views of a large grassy depression in the center of a stretch of undeveloped grassland (City’s detention basin). A few shrubs exist around the edge of this depression. There are also views of evergreen trees farther west, with buildings visible in the distance, along with hillsides in the background. Existing views of the Project site are generally limited from this area due to topography. The Proposed Project would alter the site from undeveloped grassland and vineyards to single-family homes, but views of the open space (including the City’s detention basin) in the foreground and distant hills would still be visible as shown in Figure 3.1-10. Views of distant buildings and a cluster of evergreen trees would be replaced by new homes bordered by fences.

As shown in the above visual simulations, the Proposed Project would remove a majority of the existing vineyard and open space that characterize the site and would decrease unobstructed views of the hillsides to the north and west visible from public viewpoints. However, views of agricultural and mountainous features in the City are not unique to the

Project site such that the Proposed Project would substantially impact publicly available views. As mentioned, additional discretionary approvals and Design Review would be required for specific Proposed Project components, as the current Proposed Project entitlement is only approval of a Tentative Subdivision Map. Therefore, the Proposed Project would not conflict with applicable regulations governing scenic quality or substantially degrade the existing visual character or quality of public views of the site and its surroundings and the impact to visual resources would be **less than significant**.

Mitigation Measures

None required.

3.1-3: Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? This impact would be potentially significant.

Development of the Project site would introduce new sources of lighting including exterior building lights and overhead streetlights along all residential streets. Indoor and outdoor lighting associated with new residences and streetlights would increase lighting in the Project area relative to existing conditions. Additionally, sun reflecting off the windows of the proposed development could create daytime glare. However, this type of development does not include large expanses of glass or reflective building materials that can result in daytime glare conditions. Therefore, the potential for Proposed Project development to result in glare that could adversely affect daytime views in the area and result in an impact is **less than significant.**

All lighting would be required to conform to the Lighting Zone 2 requirements of Title 24 of the California Building Code. The City does not have any adopted Design Guidelines or policies in the 1993 General Plan that specify lighting be shielded and downward focused to avoid spillover light effects. However, the 2019 General Plan does include Policy CD5.C which requires new development install lights that are shielded and cast downwards, and to conform to the Lighting Zone 2 requirements of Title 24 of the California Building Code. Because new light sources would be introduced into an area that is currently undeveloped which could adversely affect nighttime views, and the City's 1993 General Plan and Zoning Ordinance do not include standards for lighting this is considered a **potentially significant impact.**

Existing Conditions - Looking north/northwest from the proposed extension of Starr Avenue

Visual Simulation - Looking north/northwest from the proposed extension of Starr Avenue

FIGURE 3.1-8

Simulation 2

Hunter Subdivision Project

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Existing Conditions - Looking south/southeast from the maintenance road

Visual Simulation - Looking south/southeast from the maintenance road

FIGURE 3.1-9

Simulation 3

Hunter Subdivision Project

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Existing Conditions - Looking west from Del Rio Court

Visual Simulation - Looking west from Del Rio Court

FIGURE 3.1-10

Simulation 4

Hunter Subdivision Project

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Mitigation Measures

Implementation of Mitigation Measure AES-1 requires lighting design guidelines be developed for the Proposed Project and that Proposed Project lighting be designed to minimize glare and light spillover. Compliance with this mitigation measure would ensure impacts related to lighting would be reduced to less than significant.

AES-1: To minimize spillover light while ensuring adequate nighttime security, the Project applicant shall prepare lighting design guidelines for the Project to be reviewed and approved by the City as part of the Design Review process. The lighting design guidelines shall include a lighting plan noting fixtures and lumens, and standards such as, lighting is to be shielded and downward focused to reduce glare and spillover light, up cast decorative lighting shall be limited to minimize effects on wildlife and to retain the rural ambience of the area, and the use of mirrored glass shall not be permitted. The lighting guidelines shall conform with Lighting Zone 2 of Title 24, Part 6, of the California Code of Regulations. The guidelines and lighting plan shall be approved as part of the Design Review application.

3.1.5 Cumulative Impacts

The cumulative analyses for aesthetics, including light and glare, is based on the buildout of development identified in the City's 1993 General Plan. While the Proposed Project is required to be evaluated under the 1993 General Plan, any changes relative to the 2019 General Plan are also evaluated for informational purposes. The geographic scope of the cumulative impact analysis for aesthetics includes the area that comprises the viewshed in which the Project site is visible, and the views visible from the Project site, which includes development in the immediately surrounding areas. As the Project site is not considered a scenic vista, this issue is not discussed as a cumulative impact.

3.1-4: Would the Proposed Project contribute to cumulative changes in the existing visual character or conflict with applicable regulations governing scenic quality? The Project's contribution would not be considerable.

As stated above, the cumulative context for aesthetics includes the area that comprises the viewshed in which the Project site is visible. There were no cumulatively significant aesthetics impacts identified in the 1993 General Plan EIR or the 2019 General Plan EIR. It was determined that the City's design review process, in combination with General Plan policies would maintain the high-quality visual character of existing and future development, would limit impacts to agricultural lands, and would primarily contain growth within the Urban Limit Line, ensuring that cumulative aesthetic impacts would be less than significant. Thus, there is no existing cumulative impact related to visual character or scenic quality.

As there is no existing cumulative impact related to this topic, the Proposed Project would not have a considerable contribution. As discussed under Impact 3.1-2, the Proposed Project would alter the existing visual character of the Project site by developing a residential subdivision on land that is currently undeveloped. However, this development would occur consistent with both the 1993 General Plan and also the 2019 General Plan 0 policies, zoning, and design review regulations to address visual quality in the City. The 2019 General Plan includes policies to minimize light and glare and a policy to encourage undergrounding of electric lines to reduce visual clutter, Policies CD5.C and CD1.8, respectively. At a localized level, there are no approved or reasonably foreseeable projects that would be visible from the Project site, with the exception of a single-family residence, accessory dwelling unit and barn under construction to the west of the Project site. With consideration of the above factors and the absence of an existing cumulative impact, the Proposed Project's contribution would not be considerable.

Mitigation Measures

None required.

3.1-5: Would the Proposed Project contribute to a cumulative increase in light and glare? The Project's contribution would not be considerable.

The cumulative context for light and glare would be other development in the surrounding area that could contribute to an increase in light and glare. As discussed under Impact 3.1-3, development of residential uses would introduce new sources of light in the area. The Proposed Project, along with existing and future development within the City, would contribute to the existing ambient light in the Project vicinity by introducing streetlights, landscape lighting, and interior and exterior buildings lights. The 1993 General Plan EIR found lighting to be a potentially significant Proposed Project impact, requiring mitigation. As undeveloped areas transition from rural to urban character, the amount of light and glare would increase due to new buildings, structures, streetlights, and vehicle lights. However, the 1993 General Plan EIR concluded that compliance with General Plan policies and the City's design review process would be adequate to mitigate cumulative aesthetic impacts. The 2019 General Plan also determined that the design review process and General Plan policies would ensure that the cumulative impact would be less than cumulatively considerable. Thus, there is no existing cumulative impact related to light and glare.

As there is no existing cumulative impact related to light and glare, the Proposed Project would not have a considerable contribution. The City does not have any adopted Design Guidelines or policies in the 1993 General Plan that specify lighting be shielded and downward focused to avoid spillover light effects. However, the 2019 General Plan does include Policy CD5.C which requires new development to be shielded and cast downwards, and to conform to the Lighting

Zone 2 requirements of Title 24 of the California Building Code. Because the Proposed Project would add new light sources to an area that is currently undeveloped, it would contribute a small increase in the overall amount of light in the City. This impact would be mitigated by Mitigation Measure AES-1 as described above under Impact 3.1-3, making the Proposed Project consistent with Policy CD 5.C. With consideration of the above factors and the absence of an existing cumulative impact related to light and glare, the Proposed Project's contribution would not be cumulatively considerable.

Mitigation Measures

See Mitigation Measure AES-1. Compliance with Mitigation Measure AES-1 mitigates this impact and no additional mitigation is required.

3.1.6 References

Caltrans (California Department of Transportation). 2018. California Scenic Highway Mapping System: Napa County. Accessed November 12, 2018. Available at: http://www.dot.ca.gov /hq/LandArch/16_livability/scenic_highways/index.htm.

City of St. Helena. 1993. City of St. Helena 1993 General Plan. September 18, 1993.

City of St. Helena. 2010. St. Helena General Plan Update. August 2010. Prepared by ESA.

City of St. Helena. 2018. St. Helena General Plan Update 2040, Draft Environmental Impact Report. SCH# 2010042001. October 23, 2018.

City of St. Helena. 2019. City of St. Helena General Plan Update 2040. June 2019.

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3.2 AGRICULTURE AND FORESTRY RESOURCES

3.2.1 Introduction

This section describes agricultural resources, including farmland and forestland, and discusses applicable federal, state, and regional regulations pertaining to agriculture and forestry resources. This section evaluates the potential effects on agricultural and forestry resources associated with development of the proposed Hunter Subdivision Project (Proposed Project).

Comments received in response to the Notice of Preparation included concerns regarding removal of the existing vineyard on the Project site, loss of Prime Farmland and farmland/agricultural resources and potential mitigation to address loss of farmland, and impacts on adjacent vineyard soils and crops due to homeowner pesticide or fertilizer use. Impacts related to homeowner use of pesticides, fertilizer, and other household hazardous wastes are addressed in detail in Section 3.8, Hazards and Hazardous Materials. As stated in Section 3.8, households typically use small amounts of household hazardous wastes at quantities too small to result in a significant hazard to the public or the environment. Thus, this issue as it relates to agricultural resources is not discussed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information referenced to prepare this section includes the California Department of Conservation Farmland Mapping and Monitoring Program and City planning documents (including the 1993 General Plan and the 2019 General Plan[1]). The California Land Evaluation and Site Assessment (LESA) Model was used to assess potentially significant effects on agricultural lands and the model outputs are provided in Appendix B. Other sources consulted are listed in Section 3.2.6, References.

3.2.2 Environmental Setting

Farmland

Agriculture has historically been a part of the City of St. Helena (City), with the City's agricultural land primarily consisting of vineyards due to its deep alluvial soils that are conducive to growing wine grapes (City of St. Helena 1993). Within the City, agricultural uses, including wineries, account for 916 acres (25%) of the total land area. Agricultural areas are primarily located adjacent to the City's Urban Limit Line (City of St. Helena 2018). The majority of the Project site contains undeveloped land consisting of nonnative grasses, with the exception of a small vineyard in the southwestern portion of the site that occupies approximately 6.8 acres or 40% of the Project site along with less than an acre of vineyards located in the "panhandle" portion of

[1] The "General Plan Update 2040," adopted in 2019, is referred to in this EIR as the "2019 General Plan."

the site. There are no forest resources present on the site but there are some trees located adjacent to the southeast boundary of the Project site. The elevation of the Project site ranges from approximately 230 feet above mean sea level on its southern edge to approximately 212 feet above mean sea level on its northern edge. Lands to the north of the Project site, between Library Lane and Silverado Trail North are primarily agricultural, with vineyards located beyond the proposed Adams Street extension and the levee along the Napa River. The Napa River is located approximately 0.1 miles to the north/northeast of the Project site. Single-family and multi-family residential development is located to the south and southeast, and office uses are located immediately adjacent to the site's western boundary at the terminus of Adams Street. A gravel maintenance road/public trail borders the site along the north/northwest and a city storm water detention basin borders the site to the north/northeast.

The Project site is designated as high density housing in the 1975 St. Helena General Plan, as Medium Density Residential (MDR) in the City's 1993 General Plan (City of St. Helena 1993), and as MDR in the current 2019 General Plan (City of St. Helena 2019). Land designated as Medium Density Residential (MDR) typically is for residential purposes, and provides for single-family detached and attached homes, secondary residential units, public and semi-public uses, and similar and compatible uses. The zoning designation for the Project site is also Medium Density Residential (MR) (City of St. Helena 2018).

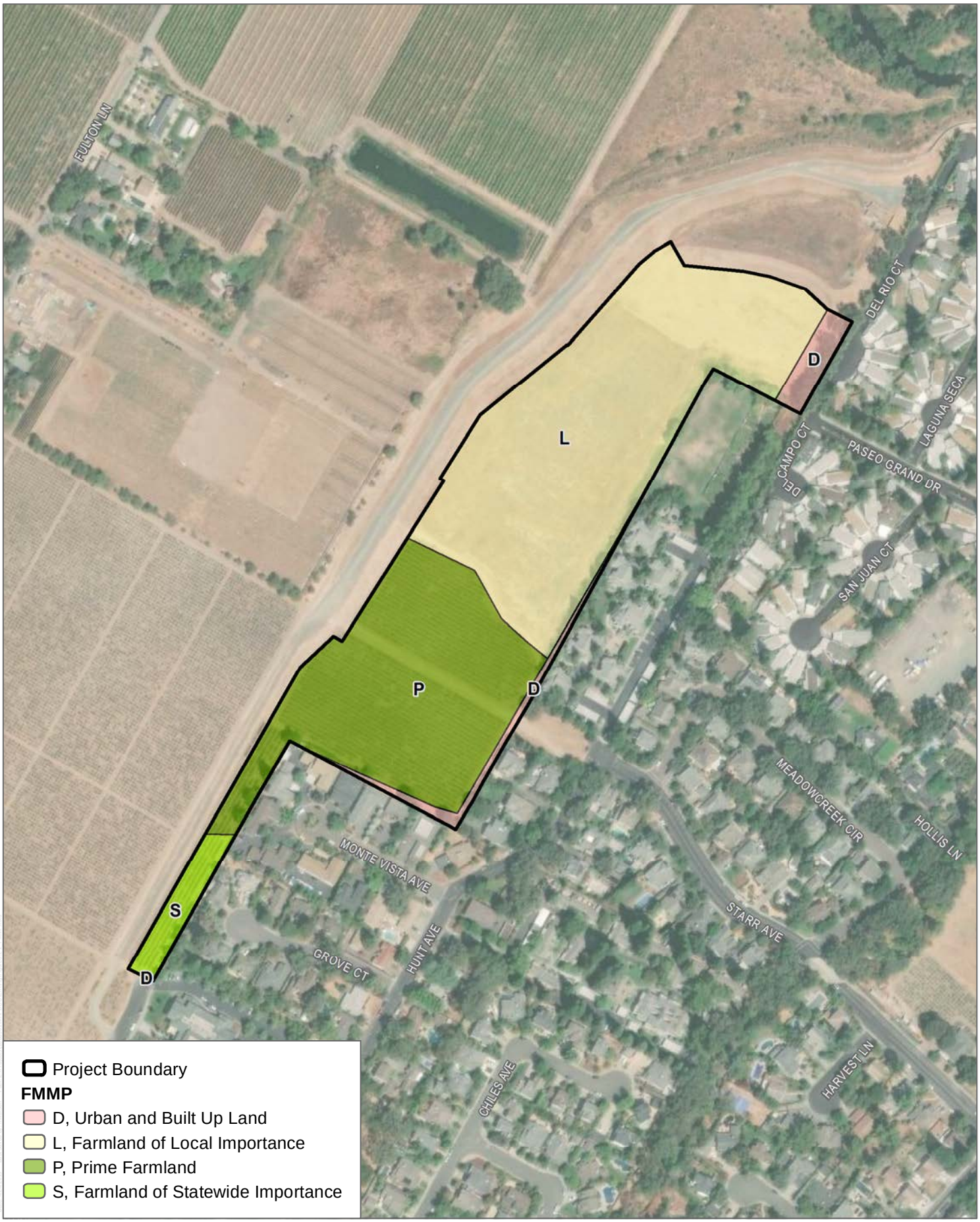
Farmland Classification

The California Department of Conservation (DOC), Division of Land Resources Protection, operates the Farmland Mapping and Monitoring Program (FMMP). The FMMP maps the state's farmland resources and monitors the conversion of farmland to (and from) other land uses. As shown in Figure 3.2-1, FMMP Classification, the FMMP categorizes the eastern portion of the Project site as Farmland of Local Importance. The western portion of the Project site is predominantly designated as Prime Farmland, with portions of Farmland of Statewide Importance and Urban and Built-Up Land in the westernmost area of the Project site. Table 3.2-1 provides acreages for the various farmland categories within the site.

Table 3.2-1
Important Farmland

Farmland Mapping and Monitoring Program Category	Acreage
Prime Farmland	5.8
Farmland of Statewide Importance	0.6
Farmland of Local Importance	9.0
Urban and Built Up Land (including existing roadways)	0.8
Total	**16.2**

Source: DOC 2017.
Note: The acreage/boundaries between the parcel data information and Napa County GIS data results in a 0.7-acre discrepancy.



SOURCE: Bing Maps 2019; CA Department of Conservation 2016

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0 150 300 Feet

FIGURE 3.2-1

FMMP Classification

Hunter Subdivision Project

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Land to the north and east of the Project site is designated as Prime Farmland, and land to the northwest of the site is designated Farmland of Statewide Importance. The FMMP categories relevant to the Project site are defined as follows:

Prime Farmland

"Prime Farmland" is farmland with the best combination of physical and chemical features able to sustain long term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

Farmland of Statewide Importance

Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years prior to the mapping date.

Farmland of Local Importance

Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.

Urban and Built-up Land

Land occupied by structures with a building density of at least 1 unit to 1.5 acres, or approximately 6 structures to a 10-acre parcel. This land is used for residential, industrial, commercial, construction, institutional, public administration, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

Soil Types

The United States Department of Agriculture Natural Resources Conservation Service (NRCS) conducts soil surveys and creates maps representing the location and type of soil in order to aid in agricultural, conservation, and land use decisions. The NRCS identifies the following soils as occurring on the Project site (USDA 2018):

- Bale clay loam, 0 to 2% slopes
- Bale clay loam, 2 to 5% slopes
- Cole silt loam, 0 to 2% slopes
- Cortina very gravelly loam, 0 to 5% slopes, moist

The Storie Index is a rating system that is used to classify soils that could be used for irrigated agriculture in California. The Storie Index Rating system ranks soil characteristics according to their suitability for agriculture from Grade 1 soils (80 to 100 rating), which have few or no limitations for agricultural production to Grade 6 soils (less than 10), which are not suitable for agriculture. Under this system, soils deemed less than prime can function as prime soils when limitations such as poor drainage, slopes, or soil nutrient deficiencies are partially or entirely removed. Soil units are also rated based on four properties: degree of soil profile development, texture of the surface layer, steepness of slope, and drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio (USDA 2018). The Storie Index Ratings for soils on the Project site are shown in Table 3.2-2.

Table 3.2-2
Storie Index Ratings for On-Site Soils

Soil Type	Storie Index Rating	Percent of Property Area
Bale clay loam, 0 to 2% slopes	Grade 2 – Good	22.3%
Bale clay loam, 2 to 5% slopes	Grade 3 – Fair	53.2%
Cole silt loam, 0 to 2% slopes	Grade 2 – Good	21.0%
Cortina very gravelly loam, 0 to 5% slopes, moist	Grade 3 – Fair	3.5%

Source: USDA 2018.

As shown in Table 3.2-2, the majority of the Project site, approximately 57%, contains soils that are classified as fair for irrigated agricultural production. The remainder of the site, approximately 43% contains soil units that are classified as good for irrigated agricultural production.

The Project site is not under a Williamson Land Act contract and does not contain any forest or timberland and is not zoned for forest land, timberland, or timberland production.

3.2.3 Regulatory Setting

Federal Regulations

Federal agencies must consider the impacts to Prime Farmland resulting from their actions under the Farmland Protection Policy Act (7 USC Section 4201 et seq.). This requirement does not apply to the Proposed Project.

State Regulations

The following state regulations pertaining to agricultural resources would apply to the Proposed Project.

California Civil Code Section 3482.5

Section 3482.5 of the California Civil Code specifies that no agricultural activity, operation, or facility that is conducted properly in the same location for more than three years shall be considered a nuisance to new uses in its vicinity, unless it was considered a nuisance since the time it began. This regulation also applies to activities of a district agricultural association.

Williamson Act

The Williamson Act (California Government Code Section 51200), also known as the California Land Conservation Act of 1965, is the premier legislation for the protection of agricultural land in California. The act underscores the importance of preserving a maximum amount of the state's agricultural land as an economic asset that provides for the generation of adequate and nutritious food resources for the nation and state into the future. The Williamson Act operates through 10-year contracts with agricultural landowners that confirm that agricultural land is being preserved as the land's best use while providing a substantial property tax break for the landowner. The property's agricultural value is assessed and the landowner under contract is dismissed from property taxes according to the property's urban development potential. The Project site does not contain any land under a Williamson Act contract.

Farmland Mapping and Monitoring Program

The FMMP is a non-regulatory program implemented by the DOC, Division of Land Resource Protection. Government Code Section 65570 mandates the FMMP to biennially report to the Legislature on the conversion of farmland and grazing land, and to provide maps and data to local government and the public. FMMP produces Important Farmland Maps, which are a hybrid of resource quality (soils) and land use information, based on the prior federal NRCS program. Land is classified into eight categories. Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are considered "Important Farmland" for the purposes of the California Environmental Quality Act (CEQA) (the conversion of which may be a significant impact).

Local Regulations

The following local/regional regulations pertaining to agriculture would apply to the Proposed Project.

City of St. Helena 1993 General Plan

The Open Space and Conservation Element and Land Use and Growth Management Element of the City of St. Helena 1993 General Plan provides guiding policies regarding agricultural and forestry resources, including the following:

Growth Management

Policy 2.6.5: Encourage the continuation of agricultural and low-intensity uses adjacent to the Urban Limit Line.

Agriculture

Policy 2.6.58: Promote the continuation of agricultural activities within and adjacent to the City.

Policy 2.6.59: Protect prime agricultural land and prime vineyard land from premature and/or unnecessary urban encroachment.

Policy 6.3.1: Maintain agriculture as the mainstay of the local economy by preserving agriculturally-designated lands as an invaluable and irreplaceable open space resource.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Open Space and Conservation Element and Land Use and Growth Management Element of the City of St. Helena 2019 General Plan provides guiding policies regarding agricultural and forestry resources, including the following:

Growth Management

Policy LU1.3: Support agricultural and low-intensity uses beyond the Urban Limit Line.

Agriculture

Policy LU5.1: Discourage conversion of existing farmland to non-agricultural uses.

Policy LU5.2: Encourage the County to continue to promote agricultural uses and to limit further development in unincorporated areas surrounding the city.

Policy LU5.3: Strictly limit development on properties existing at the time of the adoption of this General Plan that are designated as agricultural land.

St. Helena Municipal Code

Chapters 17.32 through 17.60 and 17.68 of the St. Helena Municipal Code protect agricultural operations on agricultural land within the City by limiting the circumstances under which agricultural operations may be deemed to constitute a nuisance. The City's municipal code contains the following "right-to-farm" provision in the regulations for each nonagricultural zoning district:

> Property owners within this district shall recognize that there exists a right to farm properties within the district and in the vicinity of the district. There is a good faith expectation that no complaints will occur regarding legal normal agricultural activities on properties in the district or in the vicinity of the district. Such activities may include day or night disbursement of chemicals, and creation of dust, noise, or fumes.

In addition, Municipal Code Section 17.04.100 (Cultivated agricultural use within established zoning districts) specifies the following:

> It is the policy of the city as expressed in the general plan to recognize and provide for cultivated agriculture within the city limits. Cultivated agricultural uses are permitted within the A-20 zoning district and regulated by use permit in the woodlands and watershed zoning district. It is the intent of the city to allow cultivated agricultural uses including, but not limited to, farming, horticulture, floriculture and viticulture, but excluding animal husbandry and livestock farming, in all zoning districts within the urban limit line prior to establishment of urban land uses. Allowing cultivated agriculture within the urban limit line shall not compromise the long-term objective of providing for designated urban uses. Water used for cultivated agriculture shall be in conformance with Section 13.04.100 of this code.

3.2.4 Impacts

Methods of Analysis

The LESA Model was used to evaluate potential impacts to agricultural land resulting from development of the Project site. The LESA Model is a point-based approach for rating the relative importance of agricultural land resources based upon specific measurable features. The LESA was first developed in 1981 by the NRCS to provide an objective rating system for the agricultural suitability of land. The development of California's LESA Model was the result of Senate Bill 850 (Chapter 812/1993), which charged the Resources Agency, in consultation with the Governor's Office of Planning and Research, with preparing an amendment to Appendix G of the CEQA Guidelines concerning agricultural lands. This model ensures a quantitative and

consistent approach to determining potentially significant impacts to agricultural resources during the environmental review process. The LESA Model evaluates various characteristics of a project site, including soil resource quality, project size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. These factors are rated, weighted, and combined to produce a single numeric score that can be used to determine significance. The final scoring is based on a scale of 100 points. Thresholds for significance are based on both the total LESA score as well as the component Land Evaluation (LE) and Site Assessment (SA) subscores (DOC 1997). Table 3.2-3 includes the LESA Model scoring thresholds. A copy of the model outputs is included in Appendix B.

Table 3.2-3
LESA Model Scoring Thresholds

Scoring	Significance
0 to 39 Points	Not Considered Significant
40 to 59 Points	Considered Significant only if LE and SA subscores are each greater than or equal to 20 points
60 to 79 Points	Considered Significant unless either LE or SA subscore is less than 20 points
80 to 100 Points	Considered Significant

Source: DOC 1997.

The LE considers the quality of the soils on a project site, as measured by Land Capability Classification and the Storie Index of the soils. The Land Capability Classification indicates the suitability of soils for most kinds of crops. Groupings are made according to the limitations of the soils when used to grow crops, and the risk of damage to soils when they are used in agriculture. The Storie Index provides a numeric rating (based upon a 100-point scale) of the relative degree of suitability or value of a given soil for intensive agriculture. The rating is based upon soil characteristics only. The NRCS Web Soil Survey was used to determine soil types and properties on the Project site.

The SA considers the size of a project site, the availability of water for agricultural use, the amount of active agricultural uses around the project site, and the amount of protected land (including Williamson Act contracts, publicly owned lands used for open space or recreational uses, and easements which restrict urban development). The SA portion was primarily based on City, County of Napa (County), and other public GIS data and the DOC FMMP, and the well report filed with the Department of Water Resources for the on-site groundwater well. The Proposed Project setting was developed by reviewing FMMP data and Williamson Act contract information from the DOC. This review was supplemented with field observations (as part of the biological resource fieldwork).

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact could occur if development of the Proposed Project would do any of the following:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use, or a Williamson Act contract.
- Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g)).
- Result in the loss of forest land or conversion of forest land to non-forest use.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use.

As shown in Table 3.2-3, the loss of agricultural resources would be considered significant only if the individual LE and SA subscores are each greater than or equal to 20 points.

Significance Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this Environmental Impact Report.

Conflict with Williamson Act Contract/Conflict with Lands Zoned Forest Land or Timberland/Loss or Conversion of Forest Land

The Project site does not include forest lands, land zoned for agricultural use, or timberland, nor does the Project site contain an active Williamson Act contract; therefore, there would be no impact to conflicting with existing zoning for agricultural use, forest or timberland resources, or removal of a Williamson Act contract. Thus, these issues (second, third and fourth significance threshold listed above) are not further evaluated.

Impacts and Mitigation Measures

3.2-1: Would the Proposed Project convert Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? This impact would be less than significant.

The Project site includes 5.8 acres of Prime Farmland and 0.6 acres of Farmland of Statewide Importance (as defined by the FMMP) that would be converted to urban uses as a result of Proposed Project implementation (see Table 3.2-1). The site also includes land designated as Farmland of Local Importance and Urban Land. Due to the presence of 6.4 acres of "Important Farmland," the LESA Model (Appendix B) was used to evaluate the quality of agricultural lands on the Project site to determine the significance of potential Proposed Project impacts. As described above, under Methods of Analysis, the LESA Model is used to provide a quantitative and consistent approach to determining potentially significant impacts to agricultural resources during the environmental review process. The model results in individual scores for the LE and SA factors, along with a total score out of 100 possible points.

The dominant soil type on the Project site is Bale clay loam (see Section 3.6, Geology and Soils), which has a relatively high Land Capability Classification and average to above-average Storie Index. This resulted in a moderate LE score. The relatively small size of the Project site and the amount of urban land near the site resulted in a low SA score, despite the relatively good availability of water (due to the on-site irrigation well). The model returned an LE score of 35 and a SA score of 13.8 for a total score of 48.8 (see Appendix B). As shown in Table 3.2-3, the loss of agricultural resources would be considered significant only if the individual LE and SA subscores are each greater than or equal to 20 points. Therefore, impacts associated with the removal of prime farmland and farmland of statewide importance would be **less than significant.**

Mitigation Measures

None required.

3.2-2: Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use? This impact is less than significant.

Conversion of the Project site to developed uses may impact nearby agricultural operations to the north, northeast and northwest. Existing agricultural operations may become constrained, due to concerns with the effects of dust, odor, noise, and pesticide-use from future Proposed Project residents. In addition, urban effects, such as vandalism, garbage, and predation by domestic animals (cats and dogs) can also impact agricultural uses. These are often identified as "edge effects," as the urban edge interacts with adjacent agricultural activities.

There is agricultural land to the north and northwest of the Project site, within the City boundaries, that is currently in active agricultural production. This land is designated as Prime Farmland and Farmland of Statewide Importance (FMMP 2017). The City's Municipal Code (Chapters 17.32 through 17.60 and 17.68) includes provisions that require property owners adjacent to agricultural operations to recognize that adjacent properties have the right to farm and that there is a good faith expectation that the adjacent neighbors would not complain to the City regarding legal normal agricultural activities, including day or night disbursement of chemicals, and creation of dust, noise, or fumes. This protects agricultural operations and uses within the vicinity of the Project site. There is an existing trail adjacent to a gravel maintenance road also used by the public as an informal trail which borders the site along the north/northwest. No modifications to the trail or maintenance road are proposed and these existing uses would help provide a buffer between adjacent agricultural activities and the Project site. The development of residences on the Project site would not directly or indirectly result in conversion of properties under active agriculture to the north and northwest to non-agricultural uses. Therefore, impacts would be **less than significant.**

Mitigation Measures

None required.

3.2.5 Cumulative Impacts

The effects of the Proposed Project, when considered with other projects in the region, could result in a cumulative impact to the loss of farmland resources. The cumulative context for the analysis of agricultural resources is Napa County.

3.2-3: Would the Proposed Project contribute to cumulative impacts associated with the loss or conversion of existing agricultural resources? The Project would result in a less than considerable contribution.

As stated in the Napa County General Plan, agriculture is and will continue to be the primary land use in Napa County (Napa County 2008). According to the DOC's FMMP, the County has approximately 254,543 acres of agricultural land, as of 2016. Of this, the County supports 30,619 acres of "Prime Farmland," 9,593 acres of "Farmland of Statewide Importance," 16,803 acres of "Unique Farmland," 18,326 acres of "Farmland of Local Importance," and 179,202 acres of "Grazing Land." Based on the land use conversion table prepared by the DOC, between 2014 and 2016, 35 acres of the 30,654 acres of County's Prime Farmland were converted to urban and built-up land. However, overall, Important Farmland in the County increased by 149 acres (DOC 2016). This is likely due to lands being converted to vineyards.

The City contains approximately 956 acres of land designated as Prime Farmland, 284 acres of Farmland of Statewide Importance, 53 acres of Unique Farmland, and 33 acres of Farmland of Local Importance. There is no land designated as Grazing Land within the City (City of St. Helena 2018). The Project site contains less than 6 acres of Prime Farmland and less than 1 acre of Farmland of Statewide Importance.

As described in Impact 3.2-1, the Proposed Project would not be considered to have a potential impact on agricultural resources. In addition, the Project site has long been designated for urban use. The St. Helena 1993 General Plan and also the current 2019 General Plan contains policies regarding the preservation of agricultural lands. For example, the City maintains large parcels for agricultural use and limits residential and commercial development within the Urban Limit Line to parcels already designated for such uses. The Proposed Project is not compromising the principles of urban-centered growth and agricultural preservation since the site has been designated for residential development and is located within the City limits. In addition, Countywide, conversion of agricultural lands in the County is decreasing. Therefore, the Proposed Project's contribution to a cumulative effect is not considerable, and cumulative impacts would be **less than significant.**

Mitigation Measures

None required.

3.2.6 References

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3.3 AIR QUALITY

3.3.1 Introduction

This section of the Draft Environmental Impact Report presents potential air quality impacts of the proposed Hunter Subdivision Project (Proposed Project), which includes the environmental setting and existing air quality conditions, regulatory framework, potential short-term and long-term air quality impacts, and proposed measures to mitigate any identified significant impacts. The analysis and findings are based on the air quality emissions modeling, which can be found in Appendix C.

No comments were received that raised concerns regarding air quality in response to the Notice of Preparation. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information contained in this section is based on Proposed Project plans, the California Emissions Estimator Model (CalEEMod) to estimate Proposed Project emissions, the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act Air Quality Guidelines (BAAQMD 2017a), and the Spare the Air: Cool The Climate – Final 2017 Clean Air Plan (BAAQMD 2017b). Other sources consulted are listed in Section 3.3.6, References.

3.3.2 Environmental Setting

The City of St. Helena (City) is located in the County of Napa (County), within the boundaries of the San Francisco Bay Area Air Basin (SFBAAB). The SFBAAB encompasses all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, and the southern portions of Solano and Sonoma counties.

Air pollutants are emitted by a variety of sources, including mobile sources (vehicles), area sources (fireplaces, consumer product use, architectural coatings, and landscape maintenance equipment), energy sources (natural gas combustion), and stationary sources (generators or other stationary equipment). Some air pollutants need to be examined at the local level, and others are predominately an issue at the regional level. For instance, ozone (O_3) is formed in the atmosphere in the presence of sunlight by a series of chemical reactions involving oxides of nitrogen (NO_x) and reactive organic gas (ROG, also termed volatile organic compounds [VOCs]). Because these reactions can occur many miles from the source, O_3 is typically analyzed at the regional level (i.e., in the Air Basin) rather than the local level. On the other hand, air pollutants such as particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), carbon monoxide (CO), and toxic air contaminants (TACs) are a potential concern in the immediate vicinity of the pollutant source because the pollutants are emitted

directly by or are formed close to the source. Therefore, the study area for emissions of PM_{10}, $PM_{2.5}$, CO, and TACs is the local area near the source, such as in the vicinity of the Project site, and the study area for regional pollutants such as NO_x and ROGs is the entire SFBAAB.

Regional Climatology

Air quality is a function of the rate and location of pollutant emissions under the influence of meteorological conditions and topographic features that influence pollutant movement and dispersal. Atmospheric conditions such as wind speed, wind direction, atmospheric stability, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants, and consequently affect air quality.

The climate of the SFBAAB is determined largely by a high-pressure system that is almost always present over the eastern Pacific Ocean off the west coast of North America. During winter, the Pacific high-pressure system shifts southward, allowing more storms to pass through the region. During summer and early fall, when few storms pass through the region, emissions generated within the Bay Area can combine with abundant sunshine under the restraining influences of topography and subsidence inversions to create conditions that are conducive to the formation of photochemical pollutants, such as O_3, and secondary particulates, such as nitrates and sulfates.

The Project site is located in the Napa Valley climatological subregion. Specific topographic and climatological conditions for the subregion are described in the BAAQMD California Environmental Quality Act Air Quality Guidelines (BAAQMD 2017a). The Napa Valley is bordered by relatively high mountains. With an average ridge line height of about 2,000 feet, with some peaks approaching 3,000 to 4,000 feet, these mountains are effective barriers to the prevailing northwesterly winds. The Napa Valley is widest at its southern end and narrows in the north. During the day, the prevailing winds flow up valley from the south about half of the time. A strong up valley wind frequently develops during warm summer afternoons, drawing air in from the San Pablo Bay. Daytime winds sometimes flow down valley from the north. During the evening, especially in the winter, down valley winds often occur. Wind speeds are generally low, with almost 50% of the winds less than 4 miles per hour. Only 5% of the winds are between 16 and 18 miles per hour, representing strong summertime up valley winds and winter storms (BAAQMD 2017a).

The greatest precipitation in the City occurs from October to April, during which time the rainfall averages 2–7 inches per month. The average annual precipitation is 34.61 inches. The City has a mild climate with an annual average temperature of 75°F. The coolest months of the year are typically December through February, with an annual average low of 36°F. The warmest months are typically June through September, with an annual average high of 89°F. Prevailing wind direction in the City (as measured at the St. Helena station, approximately 0.42 miles southwest of the Project site) is from the west (WRCC 2019).

The air pollution potential in the Napa Valley could be high if there were sufficient sources of air contaminants nearby. Summer and fall prevailing winds can transport O_3 precursors northward from the Carquinez Strait Region to the Napa Valley, effectively trapping and concentrating the pollutants when stable conditions are present. The local upslope and downslope flows created by the surrounding mountains may also recirculate pollutants already present, contributing to buildup of air pollution. High O_3 concentrations are a potential problem to sensitive crops such as wine grapes, as well as to human health. The high frequency of light winds and stable conditions during the late fall and winter contribute to the buildup of particulate matter from motor vehicles, agriculture, and woodburning in fireplaces and stoves.

Pollutants and Effects

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), CO, sulfur dioxide (SO_2), PM_{10}, $PM_{2.5}$, and lead. These pollutants, as well as TACs, are discussed in the following paragraphs.[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. These precursors are mainly NO_x and ROG. 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 Earth's surface in the lower atmosphere (tropospheric ozone).[2] The O_3 that the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB) regulate as a criteria air pollutant is produced close to the ground level, where people live, exercise, and breathe. Ground-level O_3 is a harmful air pollutant that causes numerous adverse

[1] The descriptions of the criteria air pollutants and associated health effects are based on the U.S. Environmental Protection Agency's "Criteria Air Pollutants" (EPA 2018a), the California Air Resources Board's (CARB) "Glossary" (CARB 2019a), and CARB's "Fact Sheet: Air Pollution Sources, Effects and Control" (CARB 2009).

[2] The troposphere is the layer of Earth's atmosphere nearest to the surface of Earth, extending outward approximately 5 miles at the poles and approximately 10 miles at the equator.

health effects and is thus considered "bad" O_3. Stratospheric, or "good," O_3 occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric O_3 layer, plant and animal life would be seriously harmed.

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 (EPA 2013).

Inhalation of O_3 causes inflammation and irritation of the tissues lining human airways, causing and worsening a variety of symptoms. Exposure to O_3 can reduce the volume of air that the lungs breathe in and cause shortness of breath. O_3 in sufficient doses increases the permeability of lung cells, rendering them more susceptible to toxins and microorganisms. The occurrence and severity of health effects from O_3 exposure vary widely among individuals, even when the dose and the duration of exposure are the same. Research shows adults and children who spend more time outdoors participating in vigorous physical activities are at greater risk from the harmful health effects of O_3 exposure. While there are relatively few studies of O_3's effects on children, the available studies show that children are no more or less likely to suffer harmful effects than adults. However, there are a number of reasons why children may be more susceptible to O_3 and other pollutants. Children and teens spend nearly twice as much time outdoors and engaged in vigorous activities as adults. Children breathe more rapidly than adults and inhale more pollution per pound of their body weight than adults. Also, children are less likely than adults to notice their own symptoms and avoid harmful exposures. Further research may be able to better distinguish between health effects in children and adults. Children, adolescents and adults who exercise or work outdoors, where O_3 concentrations are the highest, are at the greatest risk of harm from this pollutant (CARB 2019b).

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 (NO), which is a colorless, odorless gas. NO_x, which includes NO_2 and NO, 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).

A large body of health science literature indicates that exposure to NO_2 can induce adverse health effects. The strongest health evidence, and the health basis for the ambient air quality standards (AAQS) for NO_2, results from controlled human exposure studies that show that NO_2

exposure can intensify responses to allergens in allergic asthmatics. In addition, a number of epidemiological studies have demonstrated associations between NO_2 exposure and premature death, cardiopulmonary effects, decreased lung function growth in children, respiratory symptoms, emergency room visits for asthma, and intensified allergic responses. Infants and children are particularly at risk because they have disproportionately higher exposure to NO_2 than adults due to their greater breathing rate for their body weight and their typically greater outdoor exposure duration. Several studies have shown that long-term NO_2 exposure during childhood, the period of rapid lung growth, can lead to smaller lungs at maturity in children with higher compared to lower levels of exposure. In addition, children with asthma have a greater degree of airway responsiveness compared with adult asthmatics. In adults, the greatest risk is to people who have chronic respiratory diseases, such as asthma and chronic obstructive pulmonary disease (CARB 2019c).

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, 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, which is a typical situation at dusk in urban areas from November to February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

CO is harmful because it binds to hemoglobin in the blood, reducing the ability of blood to carry oxygen. This interferes with oxygen delivery to the body's organs. The most common effects of CO exposure are fatigue, headaches, confusion and reduced mental alertness, and light-headedness, and dizziness due to inadequate oxygen delivery to the brain. For people with cardiovascular disease, short-term CO exposure can further reduce their body's already compromised ability to respond to the increased oxygen demands of exercise, exertion, or stress. Inadequate oxygen delivery to the heart muscle leads to chest pain and decreased exercise tolerance. Unborn babies whose mothers experience high levels of CO exposure during pregnancy are at risk of adverse developmental effects. Unborn babies, infants, elderly people, and people with anemia or with a history of heart or respiratory disease are most likely to experience health effects with exposure to elevated levels of CO (CARB 2019d).

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.

Controlled human exposure and epidemiological studies show that children and adults with asthma are more likely to experience adverse responses with SO_2 exposure, compared with the non-asthmatic population. Effects at levels near the one-hour standard are those of asthma exacerbation, including bronchoconstriction accompanied by symptoms of respiratory irritation such as wheezing, shortness of breath and chest tightness, especially during exercise or physical activity. Also, exposure at elevated levels of SO_2 (above 1 parts per million [ppm]) results in increased incidence of pulmonary symptoms and disease, decreased pulmonary function, and increased risk of mortality. The elderly and people with cardiovascular disease or chronic lung disease (such as bronchitis or emphysema) are most likely to experience these adverse effects (CARB 2019e).

SO_2 is of concern both because it is a direct respiratory irritant and because it contributes to the formation of sulfate and sulfuric acid in particulate matter (NRC 2005). People with asthma are of particular concern, both because they have increased baseline airflow resistance and because their SO_2-induced increase in resistance is greater than in healthy people, and it increases with the severity of their asthma (NRC 2005). SO_2 is thought to induce airway constriction via neural reflexes involving irritant receptors in the airways (NRC 2005).

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. 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. 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 ROG.

$PM_{2.5}$ 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. PM_{10} tends to collect in the upper portion of the respiratory system, whereas $PM_{2.5}$ is small enough to penetrate deeper into the lungs and damage lung tissue. Suspended particulates also produce haze and reduce regional visibility and damage and discolor surfaces on which they settle.

A number of adverse health effects have been associated with exposure to both $PM_{2.5}$ and PM_{10}. For $PM_{2.5}$, short-term exposures (up to 24 hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases. In addition, of all of the common air pollutants, $PM_{2.5}$ is associated with the greatest proportion of adverse health effects related to air pollution, both in the United States and world-wide based on the World Health Organization's Global Burden of Disease Project. Short-term exposures to PM_{10} have been associated primarily with worsening of respiratory diseases, including asthma and chronic obstructive pulmonary disease, leading to hospitalization and emergency department visits. (CARB 2017).

Long-term (months to years) exposure to $PM_{2.5}$ has been linked to premature death, particularly in people who have chronic heart or lung diseases, and reduced lung function growth in children. The effects of long-term exposure to PM_{10} are less clear, although several studies suggest a link between long-term PM_{10} exposure and respiratory mortality. The International Agency for Research on Cancer published a review in 2015 that concluded that particulate matter in outdoor air pollution causes lung cancer (CARB 2017).

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.

Sulfates. Sulfates are the fully oxidized form of sulfur, which typically occur in combination with metals or hydrogen ions. Sulfates are produced from reactions of SO_2 in the atmosphere. Sulfates can result in respiratory impairment, as well as reduced visibility.

Vinyl Chloride. Vinyl chloride is a colorless gas with a mild, sweet odor, which has been detected near landfills, sewage plants, and hazardous waste sites, due to the microbial breakdown of chlorinated solvents. Short-term exposure to high levels of vinyl chloride in air can cause nervous system effects, such as dizziness, drowsiness, and headaches. Long-term exposure through inhalation can cause liver damage, including liver cancer.

Hydrogen Sulfide. Hydrogen sulfide is a colorless and flammable gas that has a characteristic odor of rotten eggs. Sources of hydrogen sulfide include geothermal power plants, petroleum refineries, sewers, and sewage treatment plants. Exposure to hydrogen sulfide can result in nuisance odors, as well as headaches and breathing difficulties at higher concentrations.

Visibility-Reducing Particles. Visibility-reducing particles are any particles in the air that obstruct the range of visibility. Effects of reduced visibility can include obscuring the viewshed of natural scenery, reducing airport safety, and discouraging tourism. Sources of visibility-reducing particles are the same as for $PM_{2.5}$ described above.

Reactive Organic Gases. 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. 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.

Non-Criteria Air Pollutants

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 noncancer 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 noncarcinogenic effects. Noncarcinogenic 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.

Diesel Particulate Matter. Diesel particulate matter (DPM) is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (about 1/70th the diameter of a human hair), and thus is a subset of $PM_{2.5}$ (CARB 2016a). DPM is typically composed of carbon particles (“soot,” also called black carbon, or BC) and numerous organic compounds, including over 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016a). The CARB classified “particulate emissions from diesel-fueled engines” (i.e., DPM; 17 CCR 93000) as a TAC in August 1998. DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars, and off-road diesel engines including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016b). Those most vulnerable to non-cancer health effects are children whose lungs are still developing and the elderly who often have chronic health problems.

Odorous Compounds. Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person’s reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population

and overall is quite subjective. People may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

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). Sensitive receptors are groups of individuals, including children, the elderly, the acutely ill, and the chronically ill, that may be more susceptible to health risks due to chemical exposure, and sensitive-receptor population groups are likely to be located at hospitals, medical clinics, schools, playgrounds, childcare centers, residences, and retirement homes (BAAQMD 2017a). The closest sensitive receptors are single-family residences located approximately 20 feet east of the Project site.

Regional and Local Air Quality Conditions

San Francisco Bay Area Air Basin Designation

An area is designated in attainment when it is in compliance with the National Ambient Air Quality Standards (NAAQS) and/or California Ambient Air Quality Standards (CAAQS). These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare.

The primary pollutants of concern in SFBAAB are ozone, PM_{10}, and $PM_{2.5}$ because SFBAAB is designated nonattainment for these pollutants by EPA and CARB. The SFBAAB is designated as nonattainment for the 8-hour NAAQS for O_3 and is also nonattainment for $PM_{2.5}$. The SFBAAB is designated as attainment for all other criteria pollutants under the NAAQS. The SFBAAB is currently designated as nonattainment for O_3, both 1-hour and 8-hour, PM_{10} and $PM_{2.5}$ under the CAAQS. Table 3.3-1 depicts the current attainment status within the air basin with respect to the NAAQS and CAAQS, as well as the attainment classifications for criteria pollutants.

Table 3.3-1
State and Federal Ambient Air Quality Standards and Attainment Status

Pollutant	Averaging Time	California Standards[a]		National Standards[b]	
		Standard	*Attainment Status*	*Standard*	*Attainment Status*
Ozone (O_3)	1 hour	0.09 ppm	**N**	NA	NA
	8 hour	0.07 ppm	**N**	0.070 ppm	**N/Marginal**[c]
Carbon Monoxide (CO)	1 hour	20 ppm	A	35 ppm	A
	8 hour	9 ppm	A	9 ppm	A
Nitrogen Dioxide (NO_2)	1 hour	0.18 ppm	A	0.100 ppm	U
	Annual	0.030 ppm	NA	0.053 ppm	A
Sulfur Dioxide (SO_2)	1 hour	0.25 ppm	A	0.075 ppm	A
	24 hour	0.04 ppm	A	0.14 ppm	A
	Annual	NA	NA	0.03 ppm	A
Particulate Matter (PM_{10})	24 hour	50 µg/m^3	**N**	150 µg/m^3	U
	Annual	20 µg/m^3	**N**	NA	NA
Fine Particulate Matter ($PM_{2.5}$)	24 hour	NA	NA	35 µg/m^3	**N**[d]
	Annual	12 µg/m^3	**N**	12 µg/m^3	U/A[e]
Sulfates	24 hour	25 µg/m^3	A	NA	NA
Lead	30 day	1.5 µg/m^3	NA	NA	A
	Cal. Quarter	NA	NA	1.5 µg/m^3	A
	Rolling 3-Month Average	NA	NA	0.15 µg/m^3	U/A
Hydrogen Sulfide	1 hour	0.03 ppm	U	NA	NA
Visibility-Reducing Particles	8 hour	See Note "f"	U	NA	NA

Source: BAAQMD 2017c; CARB 2018 (state); EPA 2018b (federal).

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3= milligrams per cubic meter; 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; A = Attainment; N = Nonattainment; U = Unclassified; NA = Not Applicable (no applicable standard)

[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. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements can be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average.

[b] National standards shown are the "primary standards" designed to protect public health. NAAQS (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 above 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] On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. EPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the O_3 level in the area.

[d] On January 9, 2013, the EPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This EPA rule suspends key State Implementation Plan requirements as long as monitoring data continues to show that the Bay Area attains the standard.

Despite this EPA action, the Bay Area will continue to be designated as "nonattainment" for the national 24-hour $PM_{2.5}$ standard until such time as the BAAQMD submits a "redesignation request" and a "maintenance plan" to EPA, and EPA approves the proposed redesignation.

e In December 2012, the EPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, EPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated "unclassifiable/attainment" must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

f Statewide visibility reducing particle standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70%. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

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 Jefferson Avenue monitoring station, located at 2552 Jefferson Avenue, Napa, CA 94558, is the nearest air quality monitoring station to the Project site, located approximately 16.5 miles southeast from the Project site. The most up-to-date air quality data from 2016 to 2018 for O_3, NO_2, CO, PM_{10}, and $PM_{2.5}$ from the Jefferson Avenue monitoring station are provided in Table 3.3-2. The data collected at this station is considered generally representative of the air quality experienced in the Project vicinity. The number of days exceeding the ambient air quality standards is also shown in Table 3.3-2.

Table 3.3-2
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	2018	2016	2017	2018
Ozone (O_3)										
Napa-Jefferson Avenue	ppm	Maximum 1-hour concentration	State	0.09	0.080	0.098	0.047	0	1	0
	ppm	Maximum 8-hour concentration	State	0.070	0.068	0.084	0.043	0	2	0
			Federal	0.070	0.067	0.084	0.042	0	2	0
Nitrogen Dioxide (NO_2)										
Napa-Jefferson Avenue	ppm	Maximum 1-hour concentration	State	0.18	0.039	0.052	0.039	0	0	0
			Federal	0.100	0.039	0.0526	0.039	0	0	0
	ppm	Annual concentration	State	0.030	0.007	0.007	ND	—	—	—
			Federal	0.053	—	—	—	—	—	—

Table 3.3-2
Local Ambient Air Quality Data

Monitoring Station	Unit	Averaging Time	Agency/ Method	Ambient Air Quality Standard	Measured Concentration by Year			Exceedances by Year		
					2016	*2017*	2018	2016	2017	2018
Carbon Monoxide (CO)										
Napa-Jefferson Avenue	ppm	Maximum 1-hour concentration	State	20	—	—	—	—	—	—
			Federal	35	2.2	5.6	1.6	0	0	0
	ppm	Maximum 8-hour concentration	State	9.0	—	—	—	—	—	—
			Federal	9	1.5	4.7	1.1	0	0	0
Coarse Particulate Matter (PM_{10})[a]										
Napa-Jefferson Avenue	µg/m³	Maximum 24-hour concentration	State	50	33.0	ND	ND	ND (0)	ND (0)	ND (0)
			Federal	150	32.2	ND	ND	ND (0)	ND (0)	ND (0)
	µg/m³	Annual concentration	State	20	ND	ND	ND	—	—	—
Fine Particulate Matter ($PM_{2.5}$)[a]										
Napa-Jefferson Avenue	µg/m³	Maximum 24-hour concentration	Federal	35	24.3	199.1	30.2	0.0 (0)	13.3 (13)	ND (0)
	µg/m³	Annual concentration	State	12	24.3	199.1	30.2	—	—	—
			Federal	12.0	8.5	13.7	ND	—	—	—

Sources: CARB 2019f; EPA 2019.

Notes: — = data not available; µg/m3 = micrograms per cubic meter; ND = insufficient data available to determine the value; ppm = parts per million
Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.
Exceedances of federal and state standards are only shown for O_3 and particulate matter. Daily exceedances for particulate matter are estimated days because PM_{10} and $PM_{2.5}$ are not monitored daily. All other criteria pollutants did not exceed federal or state standards during the years shown. There is no federal standard for 1-hour ozone, annual PM_{10}, nor is there a state 24-hour standard for $PM_{2.5}$.
Napa-Jefferson Avenue Monitoring Station is located at 2552 Jefferson Avenue, Sebastopol, California 94558.

[a] Measurements of PM_{10} and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. 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.

3.3.3 Regulatory Setting

The following federal, state and regulations pertaining to air quality would apply to the Proposed Project.

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 EPA is responsible for implementing most aspects of the Clean Air Act, including setting 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 timeframes. Each State Implementation Plan is developed through a public process, formally adopted by the state, and submitted by the Governor's designee to the U.S. EPA. The Clean Air Act requires the U.S. EPA to review each plan and any plan revisions and to approve the plan or plan revisions if consistent with the Clean Air Act.

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. HAPs include certain VOCs, 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 Clean Air Act

The California Clean Air Act requires all areas of the state to achieve and maintain the CAAQS by the earliest practicable date. 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 CAAQS, which are generally more restrictive than the NAAQS. 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. The NAAQS and CAAQS air quality standards are presented in Table 3.3-3.

Table 3.3-3
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)	—	—

Table 3.3-3
Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]	National Standards[b]	
		Concentration[c]	*Primary*[c,d]	*Secondary*[c,e]
Vinyl chloride[j]	24 hours	0.01 ppm (26 µg/m^3)	—	—
Sulfates	24 hours	25 µg/m^3	—	—
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 2016c.

Notes: µg/m^3 = micrograms per cubic meter; mg/m^3= milligrams per cubic meter; ppm = parts per million by volume; O_3 = ozone; NO_2 = nitrogen dioxide; CO = carbon monoxide; SO_2 = sulfur dioxide; 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.

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 above 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.

ff On October 1, 2015, the national 8-hour O_3 primary and secondary standards were lowered from 0.075 to 0.070 ppm.

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, a subset of which have carcinogenic and noncarcinogenic toxicity criteria established 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) was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. AB 2588 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. 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.

In 2000, CARB approved a comprehensive Diesel Risk Reduction Plan to reduce diesel emissions from both new and existing diesel-fueled vehicles and engines (CARB 2000). The regulation is anticipated to result in an 80% decrease in statewide diesel health risk in 2020 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 (CARB 2014), On-Road Heavy Duty (New) Vehicle Program (CARB 2005b), In-Use Off-Road Diesel Vehicle Regulation (CARB 2011), and New Off-Road Compression-Ignition (Diesel) Engines and Equipment program (CARB 2008). These regulations and programs have timetables to which manufacturers must comply and existing operators must upgrade their diesel-powered equipment. There are 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).

California Health and Safety Code Section 41700

This section of the Health and Safety Code states that a person shall not discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or that endanger the comfort, repose, health, or safety of any of those persons or the public; or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

Local Regulations

Bay Area Air Quality Management District

The BAAQMD is the regional agency responsible for the regulation and enforcement of federal, state, and local air pollution control regulations in the SFBAAB, where the Project site is located. The clean air strategy of the BAAQMD includes the preparation of plans for the attainment of ambient air quality standards, adoption and enforcement of rules and regulations concerning sources of air pollution, issuance of permits for stationary sources of air pollution, inspection of stationary sources of air pollution and response to citizen complaints, monitoring of ambient air quality and meteorological conditions, and implementation of programs and regulations required by the federal and California Clean Air Acts.

On April 19, 2017, the BAAQMD adopted the Spare the Air: Cool The Climate Final 2017 Clean Air Plan (2017 Clean Air Plan) (BAAQMD 2017c). The 2017 Clean Air Plan provides a regional strategy to protect public health and protect the climate. To protect public health, the 2017 Clean Air Plan includes all feasible measures to reduce emissions of O_3 precursors (ROG and NO_x) and reduce O_3 transport to neighboring air basins. In addition, the 2017 Clean Air Plan builds on BAAQMD efforts to reduce $PM_{2.5}$ and TACs. To protect the climate, the 2017 Clean Air Plan defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious greenhouse gas (GHG) reduction targets for 2030 and 2050, and provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve those GHG reduction targets.

BAAQMD establishes and administers a program of rules and regulations to attain and maintain state and national air quality standards and regulations related to TACs. The rules and regulations that may apply to the Proposed Project include the following:

- **Regulation 2, Rule 1 – Permits.** This rule specifies the requirements for authorities to construct and permits.
- **Regulation 6, Rule 1 – General Requirements.** This rule limits the quantity of particulate matter in the atmosphere through the establishment of limitations on emission rates, concentration, visible emissions, and opacity.
- **Regulation 6, Rule 3 – Wood-Burning Devices.** This rule limits the emissions of particulate matter and visible emissions from wood-burning devices used for primary heat, supplemental heat or ambiance.
- **Regulation 6, Rule 6 – Prohibition of Trackout.** This rule addresses fugitive road dust emissions associated with trackout of solid materials onto paved public roads outside the boundaries of large bulk material sites, large construction sites and large disturbed surface sites (sites of 1-acre or more), and large disturbed surface sites.

- **Regulation 8, Rule 1 – General Provisions.** This rule limits the emission of organic compounds into the atmosphere.
- **Regulation 8, Rule 3 – Architectural Coatings.** This rule limits the quantity of volatile organic compounds in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the BAAQMD.
- **Regulation 8, Rule 15 – Emulsified and Liquid Asphalts.** This rule limits the emissions of VOCs caused by the use of emulsified and liquid asphalt in paving materials and paving and maintenance operations.

City of St. Helena 1993 General Plan

The Land Use and Growth Management and Public Health and Safety Elements of the City of St. Helena 1993 General Plan (City of St. Helena 1993) provides policies regarding air quality, including the following:

> **Policy 2.6.21:** Require new residential projects to be designed to facilitate non-automobile modes of travel (i.e., walking, biking, transit, etc.).
>
> **Policy 8.2.3:** Urge and support effective regulation of those sources of air pollution both inside and outside of St. Helena, which affect air quality, by implementing as many of the recommendations of the Napa County Congestion Management Plan (CMP) as feasible:
>
> - The Napa County CMP recommends a number of land use-based measures to manage traffic congestion, and thereby reduce auto emissions. The recommendations are organized into two categories:
>   - Destination-based Strategies: 1) Concentrate major work locations in nodes or employment centers; 2) Encourage mixed-based development that allows people to combine or avoid vehicle trips; and 3) Require site design features that encourage transit use.
>   - Origin-based Strategies: 1) Match housing opportunities to income levels; 2) Provide housing opportunities near employment centers; and 3) Require design features that encourage transit use.
>
> **Policy 8.2.4**: Consider cumulative air quality impacts from proposed developments and promote balanced land use development.
>
> **Policy 8.2.5**: Support a population and employment growth policy which will not exceed Association of Bay Area Governments population and employment projections. This includes balancing the ratio of employment to population to protect, preserve and enhance the air quality within the area.

Policy 8.2.6: Minimize local adverse air quality impacts related to construction by requiring dust abatement procedures for local projects.

Policy 8.2.8: Encourage the use of EPA-approved wood stoves or fireplace inserts, rather than fireplaces, as a means of reducing emissions into the air.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Land Use and Growth Management and Public Health and Safety Elements of the City of St. Helena 2019 General Plan (City of St. Helena 2019) provides policies regarding air quality, including the following:

Policy LU2.7: Ensure safe, walkable, and bikeable residential neighborhoods and vibrant, livable streets.

Policy PS1.1: Achieve and maintain clean, healthy air for the residents of St. Helena to preserve environmental quality and community health.

Policy PS1.2: Support regional efforts to achieve and maintain state ambient concentration standards to protect public health, reduce adverse industrial plant effects, and enhance the visual environment. In particular, provide local support for implementation of policies and measures set forth in the Napa County Congestion Management Program.

Policy PS1.3: Encourage effective regulation of those sources of air pollution, both inside and outside of St. Helena, which affect air quality, by implementing as many of the recommendations of the Napa County Congestion Management Plan as is feasible.

Policy PS1.4: Promote an optimized land use development pattern that minimizes cumulative air quality impacts from proposed developments.

3.3.4 Impacts

Methods of Analysis

Construction

Emissions from the construction phase of the Proposed Project were estimated using CalEEMod Version 2016.3.2 (CAPCOA 2017). CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with the construction and operational activities from a variety of land use projects, such as residential, commercial, and industrial facilities.

For the purposes of modeling, a 6-year build out was assumed. Under a 6-year buildout it is assumed site grading and all backbone infrastructure would be completed in the first Phase.

Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the applicant and CalEEMod generated default values. Complete detailed construction assumptions are included in Appendix C. Implementation of the Proposed Project would include construction of 87 residential units including 51 single-family residences, 11 accessory dwelling units (ADUs), and 25 multi-family units.

Buildout under the 6-year buildout scenario assumes no more than 9 single-family residences would be constructed each year and the 25 affordable housing units would be constructed by the third year. All of the other assumptions related to grading, site preparation and construction equipment would not change under this buildout scenario, only the timing when residences could be constructed.

As described in Chapter 2, Project Description, the Proposed Project would grade the 16.9-acre site. Soil balance would occur within each subset area and hauling would not be required between subset areas.[3] Balancing activities are anticipated to be performed through the use of off-road construction equipment (e.g., excavators, graders, dozers, and scrapers). The Proposed Project schedule was based on information provided by the Proposed Project applicant and illustrates a realistic buildout assuming the Tentative Subdivision Map is approved sometime in 2021. Table 3.3-4 provides the phasing assumptions under the 6-year Buildout.

Table 3.3-4
Construction Phasing Assumptions – 6-Year Buildout[1]

Proposed Project Construction Phase	Construction Start Month/Year	Construction End Month/Year
Phase 1		
Site Preparation	03/20/2023	03/31/2023
Grading	04/01/2023	04/28/2023
Paving	04/29/2023	05/26/2023
Building Construction	05/27/2023	12/22/2023
Architectural Coating	12/23/2023	01/19/2024
Phase 2		
Building Construction	03/18/2024	10/11/2024
Architectural Coating	10/12/2024	11/08/2024

[3] The estimated net grading quantity, as provided by the Proposed Project applicant, is approximately 24,321 cubic yards of fill to replace the 10,202 cubic yards of cut. This quantity does not include the spoils from the joint trench, roadways, curb and gutter, or foundations. It is the applicant's intent to balance the soils on site and not require the export or import of soils. Importing of some material, such as base rock, sand, and peat gravel that is used in the joint trenches, building foundations, and roadways would be required.

Table 3.3-4
Construction Phasing Assumptions – 6-Year Buildout[1]

Proposed Project Construction Phase	Construction Start Month/Year	Construction End Month/Year
Phase 3		
Building Construction	03/17/2025	01/30/2026
Architectural Coating	01/31/2026	02/25/2026
Phase 4		
Building Construction	03/23/2026	10/16/2026
Architectural Coating	10/17/2026	11/11/2026
Phase 5		
Building Construction	03/22/2027	10/15/2027
Architectural Coating	10/16/2027	11/10/2027
Phase 6		
Building Construction	03/20/2028	10/13/2028
Architectural Coating	10/14/2028	11/08/2028

Source: Appendix C.
Notes: See Appendix C for details.
1. Phase 1 = grading, site clearing, backbone infrastructure, 9 residential units and 2 accessory dwelling units (ADUs); Phase 2 = 9 residential units, 2 ADUs; Phase 3 = 9 residential units, 2 ADUs, 25 affordable units; Phase 4 = 9 residential units, 2 ADUs, Phase 5 = 9 residential units and 2 ADUs; Phase 6 = 9 residential units and 1 ADU.

The construction equipment mix used for estimating the construction emissions of the Proposed Project is shown in Table 3.3-5. Notably, because detailed specific information regarding the construction equipment fleet is unknown at the time of analysis, the analysis is based on the default construction equipment fleet provided by CalEEMod. The construction tabs within CalEEMod contain default information that was obtained from a survey of construction sites conducted by the South Coast Air Quality Management District (CAPCOA 2017). The construction survey data is grouped by construction phase and lot acreage. The default construction equipment list and phase length data were determined to be the most appropriate for the size and types surveyed.

Table 3.3-5
Construction Scenario Assumptions

Construction Phase	One-way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Site Preparation	18	0	0	Rubber Tired Dozers	3	8
				Tractors/Loaders/Backhoes	4	8
Grading	20	2	0	Excavators	2	8
				Graders	1	8
				Rubber Tired Dozers	1	8
				Scrapers	2	8
				Tractors/Loaders/Backhoes	2	8
Paving	15	0	0	Pavers	2	8
				Paving Equipment	2	8
				Rollers	2	8
Building Construction	55	11	0	Cranes	1	7
				Forklifts	3	8
				Generator Sets	1	8
				Tractors/Loaders/Backhoes	3	7
				Trenchers	1	8
				Welders	1	8
Architectural Coating	11	0	0	Air Compressors	1	6

Source: Appendix C.

For the analysis, it was generally assumed that heavy construction equipment would be operating for approximately 8 hours per day, 5 days per week (22 days per month) during Proposed Project construction. CalEEMod defaults were applied for the worker, haul, and vendor trips (CAPCOA 2017). Notably, CalEEMod counts trips associated with road base materials, cement, and water trucks as vendor trips and are incorporated into the calculations of the Building Construction phase, as shown in Table 3.3-5.

Construction of Proposed Project components would be subject to BAAQMD's Regulation 6. This rule requires that Proposed Project construction include steps to restrict visible emissions of fugitive dust (BAAQMD 2018). Compliance with Regulation 6 would limit fugitive dust (PM_{10} and $PM_{2.5}$) that may be generated during grading and construction activities.

A detailed depiction of the construction schedule—including information regarding subphases and equipment used during each subphase—is included in Appendix C.

Operations

Emissions from the operational phase of the Proposed Project (if the Proposed Project is approved and when the Proposed Project is completed) were estimated using CalEEMod. Operational year 2029 was assumed as it would be the first full year following completion of construction.

Area Sources. CalEEMod was used to estimate operational emissions from area sources, including emissions from consumer product use, architectural coatings, and landscape maintenance equipment associated with the Proposed Project. Emissions associated with natural gas usage in space heating, hearths, water heating, and stoves were calculated in the building energy use module of CalEEMod, as described in the following text. Notably, it was assumed that hearth emissions would be from natural gas combustion.

Consumer products in this analysis 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, and architectural coatings are not considered consumer products in this case (CAPCOA 2017). Consumer product ROG emissions were estimated in CalEEMod based on the floor area of residential buildings, and on the default factor of pounds of ROG 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 used during building maintenance. CalEEMod calculates the VOC evaporative emissions from application of residential and nonresidential surface coatings based on the VOC emission factor, the building square footage, the assumed fraction of surface area, and the reapplication rate. Low VOC paint would be used in construction and regular maintenance activities. Low VOC paint is generally considered to contain less than 50 grams of VOC per liter, which was assumed for both interior and exterior painting. The model default reapplication rate of 10% of area per year is assumed. Consistent with CalEEMod defaults, it is assumed that the residential surface area for painting equals 2.7 times the floor square footage, with 75% assumed for interior coating and 25% assumed for exterior surface coating (CAPCOA 2017).

Landscape maintenance includes fuel combustion emissions from equipment such as lawn mowers, rototillers, shredders/grinders, 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 nonresidential building space per day) and number of summer days (when landscape maintenance would generally be performed) and winter days as a conservative measure. It is assumed that landscaping equipment would likely only operate during the week (not weekends); therefore, landscape operational days were assumed to be 180 days per year in CalEEMod (CAPCOA 2017).

Energy Sources. As represented in CalEEMod, energy sources would 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. The 2019 Title 24 standards were approved and adopted by the California Building Standards Commission in December 2018. The 2019 standards became effective on January 1, 2020. CalEEMod default values were updated to reflect that the Proposed Project would comply with the requirements of the 2019 standards for this analysis.

Mobile Sources. Mobile sources for the Proposed Project would primarily be motor vehicles traveling to and from the Proposed Project. The anticipated trip generation, including the trip rates and total trips, are based on the Proposed Project's Traffic Impact Study prepared by Dudek (see Appendix K). CalEEMod was used to calculate the emissions resulting from on-road mobile sources associated with residents traveling to and from the proposed land use types.

Default trip generation rates included in CalEEMod for each proposed land use were adjusted to match the Proposed Project's trip generation. In addition, Saturday and Sunday trip rates were adjusted based on the CalEEMod default trip rates and the Proposed-Project-specific trip rates presented in the traffic study. The CalEEMod default and assumed trip rates are depicted in Table 3.3-6.

Table 3.3-6
CalEEMod Default and Adjusted Trip Rates

Land Use Type	Size Metric	CalEEMod Default Vehicle Trip Rates			Proposed Project Vehicle Trip Rates[1]		
		Weekday Trip Rate	*Saturday Trip Rate*	*Sunday Trip Rate*	*Weekday Trip Rate*	*Saturday Trip Rate*	*Sunday Trip Rate*
Single-Family Residential	Dwelling Unit	9.52	9.91	8.62	9.44	9.56	8.31
Accessory Dwelling Units	Dwelling Unit	6.59	7.16	6.07	7.36	8.18	6.94
Multi-Family Units	Dwelling Unit	5.81	5.67	4.84	9.44	9.56	8.31

Sources: CAPCOA 2017; Dudek 2020.
Note:
[1] Weekday and Saturday trip rates were provided in the Proposed Project's Traffic Impact Study. Sunday trips rates was adjusted based on the ratio of the CalEEMod default Sunday trip rates to the CalEEMod default Saturday trip rates.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Conflict with or obstruct implementation of the applicable air quality plan.
- Result in a cumulatively considerable new increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard.
- Expose sensitive receptors to substantial pollutant concentrations.
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Notably, in the *California Building Industry Association v. Bay Area Air Quality Management District* case decided in 2015, the California Supreme Court held that CEQA does not generally require lead agencies to consider how existing environmental conditions might impact a project's occupants, except where the project would significantly exacerbate an existing environmental condition. Accordingly, the significance criteria above related to exposure of sensitive receptors to substantial pollutant concentrations is relevant only to the extent that the project exacerbates existing air quality conditions.

The BAAQMD adopted updated CEQA Air Quality Guidelines, including new thresholds of significance, in June 2010 (BAAQMD 2010), and revised them in May 2011.[4] The CEQA Air Quality Guidelines advise lead agencies on how to evaluate potential air quality impacts, including establishing quantitative and qualitative thresholds of significance. The BAAQMD CEQA Air Quality Guidelines were recently re-released in May 2017 and include the same thresholds as in the 2010 and 2011 Guidelines for criteria air pollutants, TACs, and GHGs (BAAQMD 2017a). These thresholds are based on substantial evidence identified in BAAQMD's 2009 Justification Report (BAAQMD 2009) and are summarized in Table 3.3-7.

In general, the BAAQMD significance thresholds for criteria pollutants (ROG, NO_x, PM_{10}, $PM_{2.5}$, and CO) address the first two air quality Appendix G CEQA significance criteria (listed above). The BAAQMD maintains that these criteria pollutant thresholds are intended to maintain ambient air quality concentrations below state and federal standards and to prevent a

[4] The BAAQMD resolutions adopting and revising the significance thresholds in 2011 were set aside by a judicial writ of mandate on March 5, 2012. In May 2012, the BAAQMD updated its CEQA Air Quality Guidelines to continue to provide direction on recommended analysis methodologies, but without recommended quantitative significance thresholds (BAAQMD 2012). On August 13, 2013, the First District Court of Appeal ordered the trial court to reverse the judgment and upheld the BAAQMD's CEQA thresholds.

cumulatively considerable contribution to regional nonattainment with ambient air quality standards. The TAC thresholds (cancer and noncancer risks) and local CO thresholds address the third Appendix G significance criterion, and the BAAQMD odors threshold addresses the fourth Appendix G significance criterion.

Table 3.3-7
Thresholds of Significance

Pollutant	Construction Thresholds	Operational Thresholds	
	Average Daily Emissions (lbs/day)	*Average Daily Emissions (lbs/day)*	*Maximum Annual Emissions (tons/year)*
ROG	54	54	10
NO_x	54	54	10
PM_{10}	82 (exhaust)	82	15
$PM_{2.5}$	54 (exhaust)	54	10
$PM_{10}/PM_{2.5}$ (fugitive dust)	Best Management Practices	None	
Local CO	None	9.0 ppm (8-hour average, 20.0 ppm (1-hour average)	
Risks and Hazards (Individual Project)	Compliance with Qualified Community Risk Reduction Plan or Increased cancer risk of >10.0 in a million Increased noncancer risk of >1.0 Hazard Index (Chronic or Acute) Ambient $PM_{2.5}$ increase >0.3 µg/m^3 annual average Zone of Influence: 1,000-foot radius from property line of source or receptor		
Risks and Hazards (Cumulative)	Compliance with Qualified Community Risk Reduction Plan or Cancer risk of >100 in a million (from all local sources) Noncancer risk of >10.0 Hazard Index (chronic, from all local sources) Ambient $PM_{2.5}$ >0.8 µg/m^3 annual average (from all local sources) Zone of Influence: 1,000-foot radius from property line of source or receptor		
Accidental Release of Acutely Hazardous Air Pollutants	None	Storage or use of acutely hazardous material located near receptors or new receptors located near stored or used acutely hazardous materials considered significant	
Odors	None	Five confirmed complaints to BAAQMD per year averaged over 3 years	

Source: BAAQMD 2017a.
Notes: lbs/day = pounds per day; tons/year = tons per year; ppm = parts per million; µg/m^3 = micrograms per cubic meter; ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; $PM_{2.5}$ = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; CO = carbon monoxide

The BAAQMD established their thresholds of significance for CEQA purposes based on the regional goal to attain 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 the thresholds established by air districts are also protective of human health.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable to the Proposed Project and therefore, are not considered potential impacts. These criteria are addressed briefly below but are not discussed further in this document.

Other Emissions/Odors

The BAAQMD has identified typical sources of odor in the CEQA Air Quality Guidelines, a few examples of which include manufacturing plants, rendering plants, coffee roasters, wastewater treatment plants, sanitary landfills, and solid waste transfer stations. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally produced odors often exceed regulatory thresholds. Heavy-duty equipment on the Project site during construction would emit odors. However, the construction activity would be short-term and would cease to occur after individual construction is completed. Additionally, no other sources of objectionable odors have been identified for the Proposed Project. In regards to the exposure of objectionable odors to sensitive receptors, the Proposed Project is not a typical land use associated with the generation of a source of odor and would not generate odor impacts. Thus, Proposed-Project-related odor issues (the last significance threshold listed above) are not further evaluated.

Impacts and Mitigation Measures

3.3-1: Would the Proposed Project obstruct implementation of the applicable air quality plan? This impact would be less-than-significant.

An area is designated as "in attainment" when it is in compliance with the federal and/or state standards. These standards are set by the EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or public welfare with a margin of safety. The Project site is located within the SFBAAB, which is designated non-attainment for the federal 8-hour O_3 and 24-hour $PM_{2.5}$ standards. The area is in attainment or unclassified for all other federal standards. The area is designated non-attainment for state standards for 1-hour and 8-hour O_3, 24-hour PM_{10}, annual PM_{10}, and annual $PM_{2.5}$.

On April 19, 2017, the BAAQMD adopted the Spare the Air: Cool The Climate - Final 2017 Clean Air Plan (BAAQMD 2017c). The BAAQMD CEQA Air Quality Guidelines identify a three-step methodology for determining a project's consistency with the current Clean Air Plan. If the responses to these three questions can be concluded in the affirmative and those conclusions are supported by substantial evidence, then the BAAQMD considers that project to be consistent with air quality plans prepared for the Bay Area.

The first question to be assessed in this methodology is “does the project support the goals of the Air Quality Plan”? The BAAQMD-recommended measure for determining project support for these goals is consistency with BAAQMD thresholds of significance. If a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation measures, the project would be consistent with the goals of the 2017 Clean Air Plan. As indicated in the following discussion with regard to Impact 3.3-2 below, the Proposed Project would result in less than significant construction and operational emissions and would not result in long-term adverse air quality impacts. Therefore, the Proposed Project would be considered to support the primary goals and be consistent with the BAAQMD current Clean Air Plan.

The second question to be assessed is “does the project include applicable control measures from the Clean Air Plan?” The 2017 Clean Air Plan contains 85 control measures aimed at reducing air pollution in the Bay Area. Projects that incorporate all feasible air quality plan control measures are considered consistent with the Clean Air Plan. The control strategies of the 2017 Clean Air Plan include measures in the categories of stationary sources, the transportation sector, the buildings sector, the energy sector, the agriculture sector, natural and working lands, the waste sector, the water sector, and super-GHG measures. Depending on the control measure, the tools for implementation include leveraging the BAAQMD rules and permitting authority, regional coordination and funding, working with local governments to facilitate best policies in building codes, outreach and education, and advocacy strategies.

Stationary Source Control Measures. The stationary source control measures are designed to reduce emissions from stationary sources including metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD. Since the Proposed Project would not include any stationary sources of emissions. Therefore, the stationary source control measures of the Clean Air Plan are not applicable to the Proposed Project.

Transportation Control Measures. The transportation control measures aim to decrease emissions of criteria pollutants, TACs, and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The Proposed Project would develop new residences located near existing residential uses. Furthermore, the Proposed Project would also develop pedestrian and bicycle facilities, eventually connecting the Regional Vine Trail from Calistoga to the Vallejo Ferry once these improvements are completed. Therefore, the Proposed Project would not conflict with the BAAQMD’s initiatives to reduce vehicle trips and vehicle miles traveled and would support alternative transportation.

Energy Control Measures. The energy control measures are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the

Bay Area, as well as decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Notably, these measures apply to electrical utility providers and local government agencies, which would serve the Proposed Project. Therefore, the energy control measures of the Clean Air Plan are not applicable to the Proposed Project.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the building control measures focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The Proposed Project is required to meet Title 24 and CALGreen standards to reduce energy demand and increase energy efficiency. Therefore, the Proposed Project would not conflict with the building control measures of the Clean Air Plan.

Agriculture Control Measures. Since the Proposed Project does not include any agricultural activities (the remaining one-acre vineyard is too small to be considered agriculture), the agriculture control measures of the Clean Air Plan are not applicable to the Proposed Project.

Natural and Working Lands Control Measures. Since the Proposed Project does not include the disturbance of any rangelands or large areas of wetlands, the natural and working lands control measures of the Clean Air Plan are not applicable to the Proposed Project.

Waste Management Control Measures. The waste management control measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The Proposed Project would comply with local requirements for waste management (e.g., recycling and/or composting services). Therefore, the Proposed Project would be consistent with the waste management control measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works, and promoting the use of biogas recovery systems. These measures would apply to publicly owned treatment works and local government agencies and not the Proposed Project.

Super GHG Control Measures. The super-GHG control measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies, which are not applicable to the Proposed Project.

The Proposed Project would not conflict with any applicable control measures from the 2017 Clean Air Plan, as discussed above.

The third question to be assessed in this consistency methodology is "does the project disrupt or hinder implementation of any control measures from the Clean Air Plan?" Examples of how a project may cause the disruption or delay of control measures include a project that precludes an extension of a transit line or bike path or proposes excessive parking beyond parking requirements. The Proposed Project would not create any barriers or impediments to planned or future improvements to transit or bicycle facilities in the area, nor would it include excessive parking. Therefore, the Proposed Project would not hinder implementation of 2017 Clean Air Plan control measures.

In summary, the responses to all three of the questions with regard to Clean Air Plan consistency are affirmative and the Proposed Project would not conflict with or obstruct implementation of the Clean Air Plan. This is a **less-than-significant impact.**

Mitigation Measures

None required.

3.3-2: Would implementation of the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? This impact would be less than significant.

Past, present, and future development projects may contribute to the SFBAAB adverse air quality impacts on a cumulative basis. Per BAAQMD's CEQA Air Quality Guidelines, by its nature air pollution is largely a cumulative impact; no single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. In developing thresholds of significance for air pollutants, BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be considered cumulatively considerable, resulting in a significant adverse air quality impact to the region's existing air quality conditions. Therefore, if the Proposed Project's emissions are below the BAAQMD thresholds or screening criteria, then the Proposed Project would not result in a cumulatively considerable net increase of any criteria air pollutant.

The CalEEMod Version 2016.3.2 model was used to estimate emissions related to construction activities. CalEEMod input parameters, including the Proposed Project's land use type and size, construction schedule, and anticipated construction equipment, were based on information provided by the Proposed Project applicant, or default model assumptions if Proposed Project specifics were unavailable.

Construction

Sources of emissions during Proposed Project construction would include off-road construction equipment exhaust, on-road vehicles exhaust and entrained road dust (i.e., material delivery trucks and worker vehicles), paving, and architectural coating activities. Detailed assumptions associated with Proposed Project construction are included in Appendix C.

Average daily emissions were computed by dividing the total construction emissions by the number of active construction days, which were then compared to the BAAQMD construction thresholds of significance. Table 3.3-8 shows average daily construction emissions of O_3 precursors (ROG and NO_x), PM_{10} exhaust, and $PM_{2.5}$ exhaust during Proposed Project construction under a 6-year buildout scenario.[5]

Table 3.3-8
Average Daily Unmitigated Construction Emissions – 6-Year Buildout

Years	ROG	NO_x	PM_{10} Exhaust	$PM_{2.5}$ Exhaust
	Pounds per Day			
2023-2028 Construction	3.1	12.7	0.5	0.5
BAAQMD Construction Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: See Appendix C for detailed results.
Notes: The values shown are average daily emissions based on total overall tons of construction emissions, converted to pounds, and divided by1,142 active work days.
ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

As shown in Table 3.3-8 construction of future residences would not exceed BAAQMD significance thresholds under either buildout scenario. Criteria air pollutant emissions during construction would be less than significant. Although the BAAQMD does not have a quantitative significance threshold for fugitive dust, the BAAQMD's CEQA Air Quality Guidelines recommend that projects determine the significance for fugitive dust through application of best management practices (BMPs). The Proposed Project contractor would be required as conditions of approval to implement the following BMPs that are required of all construction projects:

1. All exposed surfaces (e.g., parking/staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

[5] Fuel combustion during construction and operations would also result in the generation of SO_2 and CO. These values are included in Appendix C. However, since the SFBAAB is in attainment of these pollutants, the BAAQMD has not established a quantitative mass-significance threshold for comparison and are not included in the project-generated emissions tables in this document. Notably, the BAAQMD does have screening criteria for operational localized CO, which are discussed in more detail below.

3. All visible mud or dirt track-out onto local roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
4. All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California Airborne Toxics Control Measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
7. All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The BAAQMD's phone number shall also be visible to ensure compliance with applicable regulations.

Implementation of the required fugitive dust control measures would ensure air quality and fugitive dust-related impacts associated with Proposed Project construction would remain **less than significant**.

Operations

Operation of the Proposed Project would generate criteria pollutant (including ROG, NO_x, PM_{10}, and $PM_{2.5}$) emissions from mobile sources (vehicular traffic), area sources (consumer products, architectural coatings, and landscaping equipment), and energy sources (electrical consumption). CalEEMod was used to estimate daily emissions from Proposed-Project-related operational sources. Table 3.3-9 summarizes the operational emissions criteria pollutants that would be generated from the Proposed Project. Operational emissions were then compared to the BAAQMD operational thresholds.

Table 3.3-9
Daily Unmitigated Operational Emissions

Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Area	3.6	1.8	0.2	0.2
Energy	0.1	0.5	<0.1	<0.1

Table 3.3-9
Daily Unmitigated Operational Emissions

Source	ROG	NO_x	PM_{10}	$PM_{2.5}$
	Pounds per Day			
Mobile	0.9	4.6	3.6	1.0
Total	**4.6**	**6.9**	**3.8**	**1.2**
BAAQMD Operational Thresholds	*54*	*54*	*82*	*54*
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: See Appendix C for detailed results.
Notes: The values shown are the maximum summer or winter daily emissions results from CalEEMod.
ROG = reactive organic gases; NO_x = oxides of nitrogen; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter; <0.01 = value less than reported 0.1.

As indicated in Table 3.3-9, operational emissions of ROG, NO_x, PM_{10}, and $PM_{2.5}$ would not exceed the BAAQMD significance thresholds resulting from development of the Proposed Project. Therefore, the Proposed Project would have a **less-than-significant impact** in relation to regional operational emissions.

Health Effects of Criteria Air Pollutants

Construction and operation of the Proposed Project would not result in emissions that exceed the BAAQMD emission thresholds for any criteria air pollutants, including ROG, NO_x, PM_{10}, or $PM_{2.5}$. ROG emissions would be associated with motor vehicles, construction equipment, and architectural coatings; however, Proposed-Project-generated ROG emissions would not result in the exceedances of the BAAQMD thresholds, as shown in Table 3.3-8 and Table 3.3-9. Generally, the VOCs in architectural coatings are of relatively low toxicity. Additionally, the Proposed Project would be required to adhere to Regulation 8, Rule 3 – Architectural Coatings, which restricts the VOC content of coatings.

ROG and NO_x are precursors to O_3, for which the SFBAAB is designated as nonattainment with respect to the NAAQS and CAAQS. 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 SFBAAB 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 AAQS 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. Nonetheless, because ROG and NO_x emissions associated with Proposed Project construction and/or operation would not exceed the BAAQMD daily thresholds, it is not anticipated the

Proposed Project would contribute substantially 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, Proposed Project construction would be relatively short-term, and off-road construction equipment would be operating at various portions of the site and would not be concentrated in one portion of the site at any one time. In addition, existing NO_2 concentrations in the area are well below the NAAQS and CAAQS standards. Construction and operation of the Proposed Project would not 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.

CO tends to be a localized impact associated with congested intersections. As described in Impact 3.3-3 below, the Proposed Project would result in minimal new traffic trips that would not exceed the BAAQMD CO screening criteria resulting in the formation of potential CO hotspots. Thus, the Proposed Project's CO emissions would not contribute to significant health effects associated with this pollutant.

Construction and operation of the Proposed Project would also not exceed thresholds for PM_{10} or $PM_{2.5}$ and would not contribute to exceedances of the NAAQS and CAAQS for particulate matter or obstruct the SFBAAB 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 Regulation 6, Rule 6 – Prohibition of trackout and the BAAQMD fugitive dust BMPs, which limit the amount of fugitive dust generated during construction. Due to the minimal contribution of PM_{10} and $PM_{2.5}$ during construction and operation, it is not anticipated that the Proposed Project would result in potential health effects associated related to particulate matter.

In summary, because construction and operation of the Proposed Project would not result in the exceedances of the BAAQMD significance thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$, and because the BAAQMD thresholds are based on levels that the SFBAAB can accommodate without affecting the attainment date for the AAQS and the AAQS are established to protect public health and welfare, it is anticipated that the Proposed Project would not result in health effects associated with criteria air pollutants.

Notably, there are numerous scientific and technological complexities associated with correlating criteria air pollutant emissions from an individual project to specific health effects or

potential additional nonattainment days, and methods available to quantitatively evaluate health effects may not be appropriate to apply to emissions associated with the Proposed Project, which cannot be estimated with a high-level of accuracy. Notwithstanding, because construction and operation of the Proposed Project would not result in exceedances of the BAAQMD significance thresholds for criteria pollutants, potential health impacts associated with criteria air pollutants would be **less than significant**.

Mitigation Measures

None required.

3.3-3: Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations? This impact would be less than significant.

Criteria Air Pollutant Emissions and Associated Pollutant Concentrations

As discussed above in Impact 3.3-2, because construction and operation of the Proposed Project would not result in the exceedances of the BAAQMD significance thresholds for ROG, NO_x, PM_{10}, and $PM_{2.5}$, and because the BAAQMD thresholds are based on levels that the SFBAAB can accommodate without affecting the attainment date for the AAQS and the AAQS are established to protect public health and welfare, it is anticipated that the Proposed Project would not result in health effects associated with criteria air pollutants. Therefore, potential health impacts associated with criteria air pollutants would be **less than significant**.

Toxic Air Contaminants

The BAAQMD has adopted project and cumulative thresholds for three risk-related air quality indicators to sensitive receptors: cancer risks, noncancer health effects, and increases in ambient air concentrations of $PM_{2.5}$. These impacts are addressed on a localized, rather than regional, basis in relation to sensitive receptors identified for a project. Sensitive receptors are groups of individuals, including children, older adults, the acutely ill, and the chronically ill, that may be more susceptible to health risks due to chemical exposure. Sensitive-receptor population groups are likely to be located at hospitals, medical clinics, schools, playgrounds, childcare centers, residences, and retirement homes. As previously discussed, the nearest sensitive receptors are single-family residences located approximately 20 feet east of the Project site.

The greatest potential for TAC emissions during construction would be DPM emissions from heavy equipment operations and heavy-duty trucks during construction of the Proposed Project, and the associated health impacts to sensitive receptors. As shown in Table 3.3-8, average daily particulate matter (PM_{10} or $PM_{2.5}$) exhaust emissions generated by construction equipment

operation would be minimal, well below the BAAQMD significance thresholds. Moreover, for the purposes of modeling it is assumed construction would occur over an approximate 6-year period (1,142 active construction days), which equates to approximately 10% of the total 30-year analysis exposure period for residential receptors, after which Proposed-Project-related TAC emissions would cease. Furthermore, the Proposed Project would not require the extensive use of heavy-duty construction equipment, which is subject to CARB's Airborne Toxic Control Measures for in-use diesel construction equipment to reduce DPM emissions, and it would not involve extensive use of diesel trucks.

Operation of the Proposed Project would not result in any non-permitted direct emissions (e.g., those from a point source such as diesel generators) or result in substantial diesel vehicle trips (i.e., delivery trucks). Therefore, the Proposed Project would not result in exposure of sensitive receptors in the vicinity of the Project site to substantial TAC concentrations due to either construction or operation and impacts would be **less than significant**.

Local Carbon Monoxide Concentrations

The BAAQMD thresholds of significance for local CO emissions is the 1-hour and 8-hour CAAQS of 20 ppm and 9ppm, respectively. By definition, this represent levels that are protective of public health. According to the BAAQMD, a proposed project would result in a less-than-significant impact to localized CO concentrations if the following screening criteria are met (BAAQMD 2017a):

1. Project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.
2. The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
3. The project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

The Proposed Project would generate minimal new traffic trips, estimated to be approximately 900 weekday vehicle trips, and would comply with the BAAQMD screening criteria. Accordingly, Proposed-Project-related traffic would not exceed CO standards and therefore, no further analysis was conducted for CO impacts. Thus, the CO emissions impact would be **less-than-significant on a project-level and cumulative basis.**

Mitigation Measures

None required.

3.3.5 Cumulative Impacts

The cumulative context of an air pollutant is dependent on the specific pollutant being. O_3 precursors are a regional pollutant; therefore, the cumulative context would be existing and future development within the entire SFBAAB. This means that O_3 precursors generated in one location do not necessarily have O_3 impacts in that area. Instead, precursors from across the region can combine in the upper atmosphere and be transported by winds to various portions of the air basin. Consequently, all O_3 precursors generated throughout the air basin are part of the cumulative context.

The geographic scope for the cumulative analysis is Napa County and surrounding areas, which are located within the SFBAAB for O_3. The SFBAAB includes all of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, and Santa Clara counties, as well as the southern half of Sonoma County and the southwestern portion of Solano County. The BAAQMD establishes emissions thresholds for regional emissions.

Particulates (fugitive dust and DPM) and TACs would result in localized impacts in close proximity to pollutant sources. There are no other active cumulative projects in the immediate vicinity of the Project site that are anticipated to contribute to localized TAC exposure; therefore, an analysis of the cumulative effects is not addressed below.

3.3-4: Would the Proposed Project contribute to cumulative air quality emissions within the existing area? The Project's contribution would not be considerable.

As previously discussed under Impact 3.3-2, the Proposed Project would not result in a cumulatively considerable increase in emissions of nonattainment pollutants. Therefore, the Proposed Project's cumulative contribution would be negligible and impacts would not be considerable resulting in a **less-than-significant cumulative impact**.

Mitigation Measures

None required.

3.3.6 References

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3.4 BIOLOGICAL RESOURCES

3.4.1 Introduction

This section describes the existing biological resources present within the proposed Hunter Subdivision Project (Proposed Project) site and vicinity, identifies associated regulatory requirements, evaluates potential impacts, and identifies feasible mitigation measures.

Comments received in response to the Notice of Preparation included general concerns regarding potential Proposed Project impacts to wildlife species and the Napa River, and specific concerns regarding potential Proposed Project effects on fish species in the Napa River. All of the concerns raised are addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Biological resources discussed herein were identified through the review and compilation of existing information and field reconnaissance surveys conducted by Dudek staff. Existing documentation of potential biological resources at the Project site include an Updated Biological Assessment report prepared by Wetland Research Associates (WRA), a Wetland Delineation prepared by Dudek, and the results of a rare plant survey all provided in Appendix D. Other sources reviewed are listed in Section 3.4.6, References.

3.4.2 Environmental Setting

This section provides information on the condition of natural resources in the region and on the Project site, the extent of sensitive natural communities and critical habitat, presence or absence of jurisdictional wetlands on the site, and the distribution and habitat requirements of special-status species that have been recorded from or are likely to occur in the Proposed Project vicinity and identifies the biological resources that could be affected by implementation of the Proposed Project.

Summary of Previous Studies

Wetland Delineation **(North Fork Associates 2006):** North Fork Associates conducted a formal wetland delineation of the Project site in July 2006. Two ditches were mapped as present in the Project site. No wetlands were identified during the fieldwork. The results of the delineation were summarized in a formal report (dated September 12, 2006). The U.S. Army Corps of Engineers (USACE) verified the delineation in 2008, which is valid for 5 years from the date of the letter.

Biological Assessment **(WRA 2011):** WRA conducted a field reconnaissance survey of the Project site in November 2011, to verify site conditions, assess habitat suitability for special-

status species, and evaluate the potential presence of any wetlands or other waters of the U.S. The survey was conducted after any wetlands that may have formed as a result of the placement of fill assocated with the Napa River Flood Control project in 2010. No special-status species were detected in or near the Project site during the 2011 survey.

***Updated Biological Assessment* (WRA 2015):** WRA conducted a biological assessment of the Project site in March 2015. The purpose of the survey was to compare existing site conditions to those documented in 2011. The report concluded that existing site conditions have not changed substantially since 2011. No special-status species were detected during the 2015 site assessment.

Summary of Studies Conducted as Part of This Project

The following technical studies and site assessments were conducted in 2018 and/or 2019 by Dudek and are included in Appendix D:

- In February 2018, Dudek conducted a biological reconnaissance survey to to verify WRA's 2015 Biological Assessment. The survey included a general assessessment of on-site habitats and their potential to support various special-status plant and wildlife species and to characterize and map on-site vegetation communities. The survey consisted of pedestrian transects throughout the Project site to collect data related to biological resources present or potentially present within the site. An aerial photograph and digital georeferenced map with an overlay of the property boundary was used to map the vegetation communities and record any anecdotally observed special-status or sensitive biological resources while in the field. Incidental observations of wildlife (common and/or special-status) or wildlife sign (e.g., tracks, scat) were also recorded. The field survey included the Project site only; however, general characteristics of adjacent properties were also noted during the survey by scanning with and without binoculars. A separate report summarizing Dudek's February 2018 survey was not prepared because the results of the survey have been incorporated into this section.
- In February and April 2019, Dudek biologists conducted a jurisdictional delineation to characterize and map wetland/aquatic areas potentially under the jurisdiction of USACE pursuant to Section 404 of the federal Clean Water Act and under California Department of Fish and Wildlife (CDFW) jurisdiction pursuant to Section 1600 of the California Fish and Game Code. Potentially jurisdictional features were delineated based on methodology described in the 1987 Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (USACE 2008). Non-wetland waters of the United States are delineated based on the presence of an ordinary high water mark, as determined using the methodology in A Field Guide to

the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States (USACE 2010).

- In June 2020, a Dudek botanist conducted a plant survey for the bent-flowered fiddleneck (*Amsinckia lunaris),* a California Rare Plant Rank (CRPR) 1B.2 species, which is defined by the California Native Plant Society (CNPS) as "fairly endangered in California." The survey was conducted according to the 2018 CDFW plant survey protocol during the blooming period (March through June) when the plant would be evident and identifiable. No bent-flowered fiddleneck plants were detected.

Regional Setting

The City of St. Helena (City) is situated within the Napa Valley floor, bounded by the Mayacamas Mountain Range on the western and northern sides and the Howell Mountains on the eastern side. The City is generally characterized by a mix of urban development and agricultural uses with some undeveloped wooded hillsides to the east and west of downtown and wooded hillsides interspersed with residential development to the west of downtown (City of St. Helena 2018). The Project site is located approximately three blocks east of downtown and State Route 29, and west of the Napa River in an area of medium- to low-density housing.

The Proposed Project site is located in the North Coast Ranges geographic subregion, on the border of the Inner North Coast Ranges district and the Outer North Coast Ranges District (Jepson Flora Project 2019). The Inner North Coast Ranges district is characterized by low rainfall and hot, dry summers while the Outer North Coast Ranges district has more marine influences and is characterized by higher rainfall (Baldwin et al. 2012). The Napa Valley, in which the city is located, separates these two districts. The western hills of the Napa Valley contain more redwoods and mixed evergreen forest while the eastern hills are dominated by chaparral and oak woodlands. Rainfall is intermediate between the two districts and averages 34.61 inches a year and temperatures range from an average low of 36°F in January to an average high of 89°F in July (WRCC 2019).

Local Setting

The Project site has been extensively altered by past activities associated with agriculture, and the construction of the City's Flood Protection Project, which included the placement of excess fill material from the Flood Protection Project on the site. The Project site is bordered on the south and east by medium-density residential development, to the northeast by the Napa River and associated riparian vegetation, and to the northwest by a gravel levee maintenance road/public trail and agricultural and rural residential land.

Topography

The Project site is generally flat, with micro topography created by past agriculture and grading practices, including the placement of fill on the site. The current elevation of the site varies from approximately 230 feet above mean sea level on its southern edge to approximately 212 feet above mean sea level on its northern edge. The portion of the site planned for the extension of Adams Street ranges from 243 feet above mean sea level to 230 feet above mean sea level. See Section 3.6, Geology and Soils, for an in-depth discussion of soils, geology, and topography of the Project site.

Soils

The United States Department of Agriculture's Natural Resources Conservation Service conducts soil surveys and creates maps representing the location and type of soil in order to aid in agricultural, conservation, and land use decisions. The Natural Resources Conservation Service identifies the following soils as occurring on the Project site (USDA 2019):

- Bale clay loam, 0 to 2% slopes
- Bale clay loam, 2 to 5% slopes
- Cole silt loam, 0 to 2% slopes
- Cortina very gravelly loam, 0 to 5% slopes, moist

Hydrology

The Project site is within the greater Napa River Watershed, which drains water from hillsides through the Napa Valley and into the San Pablo Bay, approximately 50 miles to the south (NCWICC 2019a). The Napa River flows from northwest to southeast approximately 500 feet north/northeast of the Project site. The Project site has been partially graded in the past for construction of a City storm water detention basin which is currently located directly north/northeast of the site. A drainage ditch along the southwestern edge of the Project site drains rainwater runoff from the site north and east and into this detention basin. See Section 3.9, Hydrology and Water Quality, for an in-depth discussion of drainage and hydrology on the Project site.

Vegetation Communities and Land Cover Types

One vegetation community, three anthropogenic land cover types, and two aquatic land cover types are present in the Project site. The vegetation community is California annual grassland. Anthropogenic land cover types include agriculture (vineyard), ruderal, and upland swale. Aquatic land cover types include seasonal wetlands and a drainage ditch. Table 3.4-1 provides a breakdown of the various vegetation communities or land cover types and Figures 3.4-1 and 3.4-2 graphically depicts this information. A more detailed discussion is included below.

SOURCE: Bing Maps 2019

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0 150 300 Feet

FIGURE 3.4-1

Vegetation Communities and Land Cover Types

Hunter Subdivision Project

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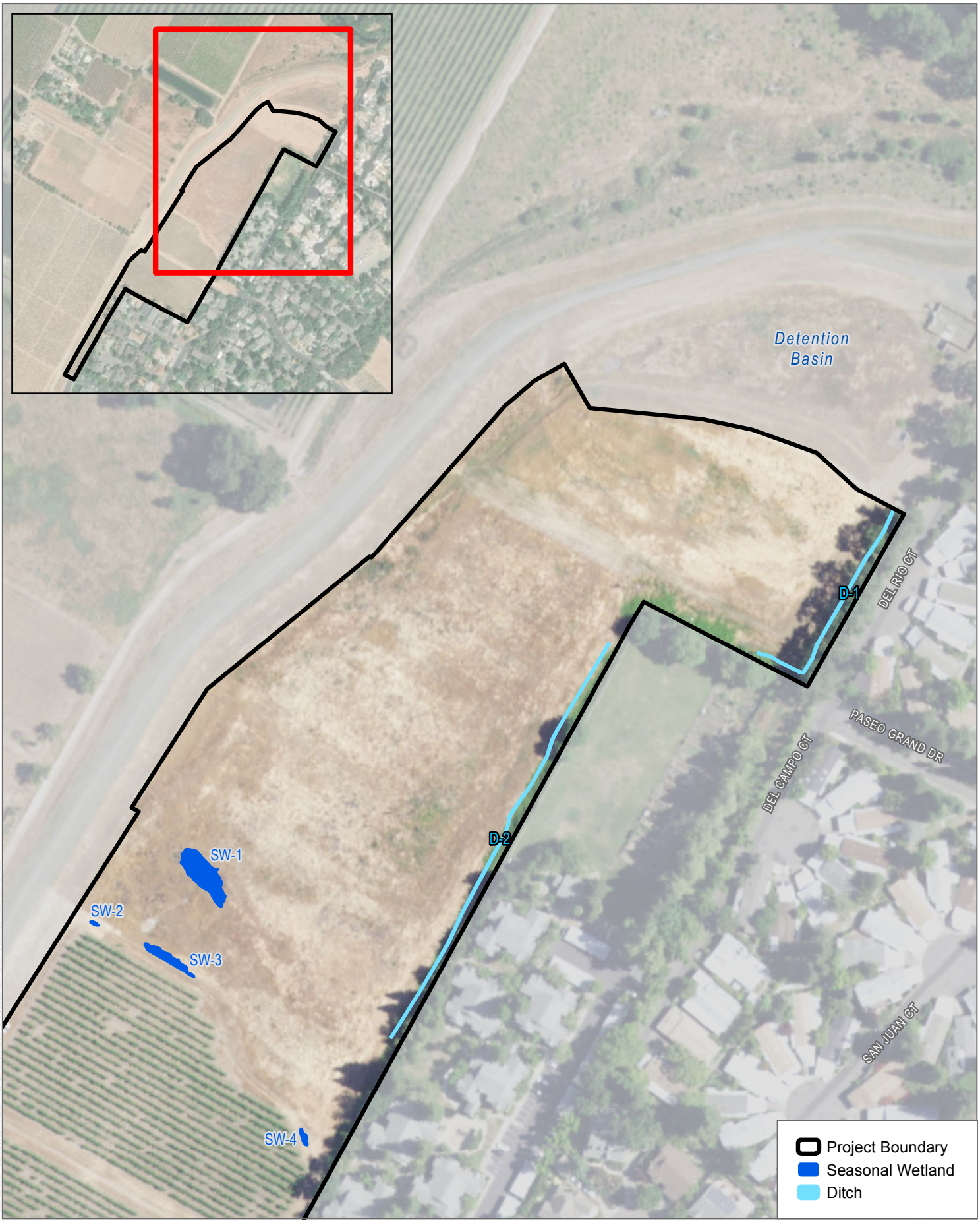

SOURCE: USDA 2016

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FIGURE 3.4-2

On-Site Seasonal Wetlands and Drainage Features

Hunter Subdivision Project

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Table 3.4-1
Vegetation Communities and Land Cover Types

Vegetation Community or Land Cover Type	Acres
Vegetation Communities	
California Annual Grassland	9.67
Subtotal	**9.67**
Anthropogenic Land Cover Types	
Agriculture (Vineyard)	6.02
Ruderal	0.45
Upland Swale	0.02
Subtotal	**6.49**
Aquatic Land Cover	
Seasonal Wetland	0.07
Ditch	0.06
Subtotal	**0.13**
Total	**16.29**

Source: Dudek 2019.

California Annual Grassland. California annual grassland comprises 9.67 acres of the Project site. Non-native and ruderal grass and forb species such as wild oat (*Avena fatua*), Mediterranean barley (*Hordeum murinum*), seaside barley (*Hordeum marinum*), redstem stork's bill (*Erodium cicutarium*), wild radish (*Raphanus sativus*), and Italian thistle (*Carduus pycnocephalus*) are common in this vegetation community. This vegetation community does not correspond to any identified community in the *Manual of California Vegetation, Online Edition*, and it is not a sensitive natural community (CDFW 2018; CNPS 2018).

The California annual grassland on the Project site is mowed or disked on a semi-annual basis. Although dominated by non-native grasses, the California annual grassland onsite provides foraging opportunities for raptor species. Additional wildlife that may use this vegetation community for foraging or breeding include ground-nesting birds such as mourning dove (*Zenaida macroura*), black-tailed jackrabbit (*Lepus californicus*), and fossorial mammals such as California vole (*Microtus californicus*) and Botta's pocket gopher (*Thomomys bottae*).

Agriculture (Vineyard). An approximately 6.02-acre vineyard occupies the southwestern portion of the Project site along with an approximately 1-acre area of vineyard located in the southwestern "panhandle" portion of the site. These vineyards are maintained on an annual basis through pruning, mowing, and disking. Cultivated grapes (*Vitis* spp.) is the primary species in this land cover type, with a sparse herbaceous layer between vine rows consisting of non-native grasses and forbs similar to those found in the adjacent California annual grasslands.

Ruderal. Ruderal non-natural land cover type includes areas disturbed by anthropogenic or human activities that retain a pervious surface without vegetation or that support an assortment of weedy, non-native vegetation. Vegetation common in the 0.45 acres of ruderal land cover onsite include wild oat, prickly lettuce (*Lactuca serriola*), black mustard (*Brassica nigra*), and yellow star thistle (*Centaurea solsitialis*). On the Project site, ruderal areas include areas regularly maintained through disking and mowing. Vegetation in these areas is dominated by non-native annual species such as cheeseweed (*Malva parviflora*), winter marigold (*Calendula arvensis*), and grasses similar to those discussed in the annual grasslands.

Upland Swale. There is one upland swale in the northwest corner of the Project site. The swale directs surrounding surface runoff to the detention basin north of the Project site. Apart from the detention basin, the upland swale is isolated from aquatic features. Vegetation in the swale is consistent with the surrounding California annual grassland. No defined bed and bank are associated with the swale, which was likely excavated specifically for stormwater drainage purposes.

Seasonal Wetlands. Four seasonal wetlands occur in the California annual grassland onsite. These areas are approximately 0.07 acres, combined, and are discernable from the surrounding grassland by a change in the dominant vegetation and/or lack of vegetation in the deepest portions due to seasonal ponding of water. Vegetation common in seasonal wetlands onsite include seaside barley, curly dock (*Rumex crispus*) and fiddle dock (*Rumex pulcher*), all of which are common in areas of seasonal inundation.

Drainage Ditch. An approximately 0.06-acre ditch runs the length of the northwestern edge of the Project site (see Figure 3.4-2, On-Site Seasonal Wetlands and Drainage Features). Himalayan blackberry (*Rubus armeniacus*) brambles dominate the vegetation in the ditch. The farther northeast the ditch travels, the more incised it becomes. At the northeastern end of the Project site, the ditch is approximately five feet deep with a defined bed and bank, as well as a canopy of valley oak (*Quercus lobata*) trees. Himalayan blackberry, toyon (*Heteromeles arbutifolia*), poison oak (*Toxicodendron diversilobum*), and oak seedlings dominate the understory of the valley oak canopy.

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 CDFW maintains a list of natural vegetation communities. Those communities with a State or Global Rarity ranking of S or G 1 through 3 are considered sensitive (CDFW 2018). In addition to sensitive natural communities, wetlands and riparian vegetation communities otherwise protected under state and federal law are also considered sensitive.

Based on review of available resources and observation of the previously disturbed nature of vegetation communities and land cover types within the Project site, no sensitive natural communities, as defined by the CDFW (2018), occur within the Project site (Figure 3.4-1). Seasonal wetlands onsite, as well as the drainage ditch may be considered sensitive (Figure 3.4-2); these features are discussed in more detail under potentially jurisdictional wetlands and waters below.

Wildlife Movement and Nursery Sites

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by assuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation (extinction) or ecological catastrophes (e.g., fires). Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as “steppingstones” for dispersal.

The Project site is bordered by development to the east, south, and agriculture to the north/northwest. The Napa River riparian corridor is located approximately 500 feet northeast of the Project site and is identified as a major, regional north-south wildlife movement route in Napa County (Napa County Watershed Information & Conservation Council 2018). Additional landscape blocks and habitat linkages are located to the north, east, and west of the Project site, but are at least 1.4 miles from the site (refer to Figure 3.4-3, Wildlife Corridors and Habitat Linkages).

While the mature trees and shrubs along the Napa River provide cover and essential habitat linkage for resident and migratory wildlife, the Project site itself does not function as a wildlife movement corridor due to the surrounding development, lack of connectivity with other undeveloped areas, and existing and historic agricultural uses of the site. The grassland on the Project site does not provide adequate cover or nursery sites for mammal species with the exception of small, fossorial mammals such as pocket gophers and field mice.

The Napa River, generally north of the site, supports native resident and migratory fish, including Chinook salmon and steelhead. The two linear features onsite are ephemeral and separated from the Napa River to the north by culverts that are not regularly open for drainage to the river (see details in Section 3.9, Hydrology and Water Quality). As such, these fish species are not expected to occur on or adjacent to the Project site.

Special-Status Resources

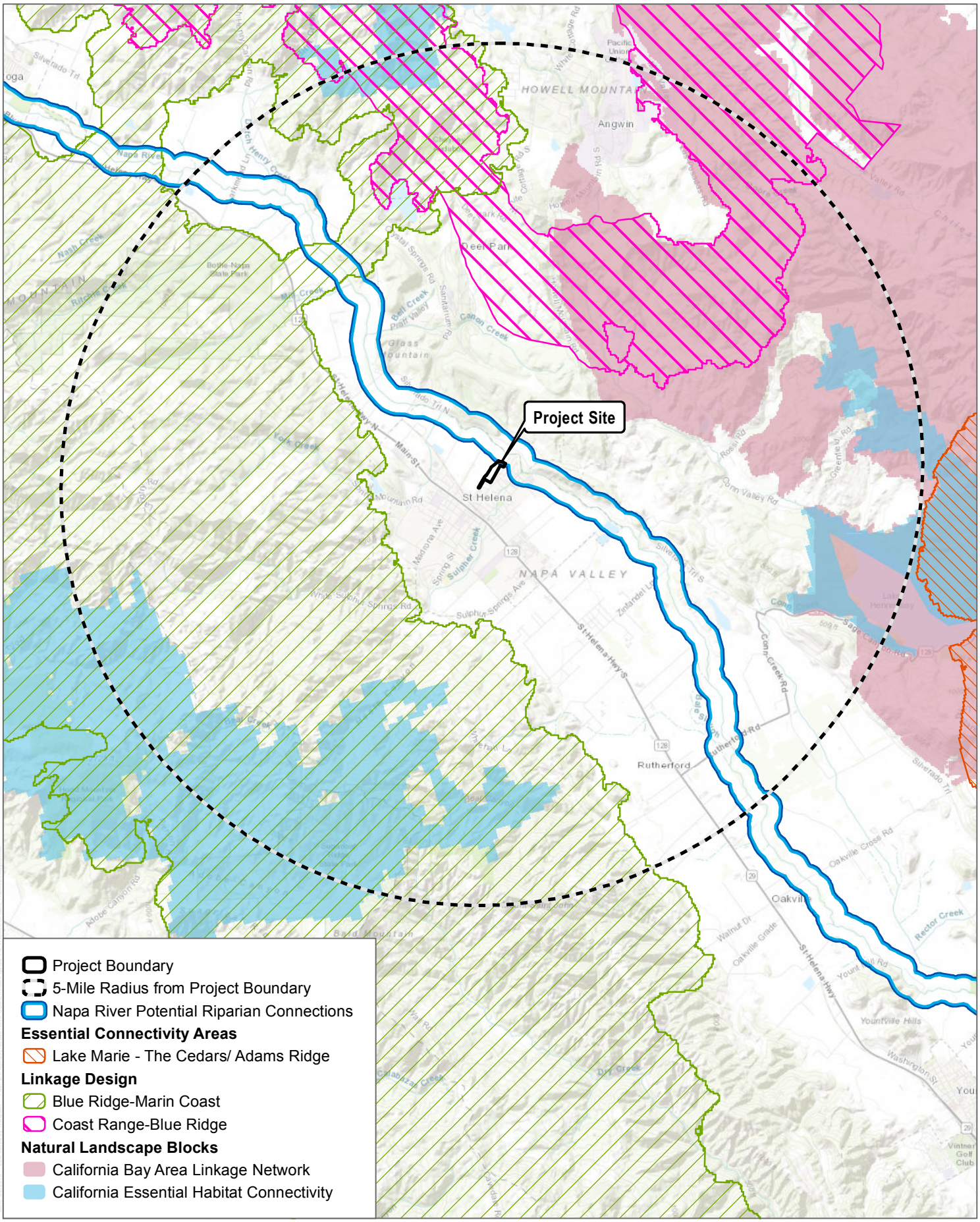
For the purposes of this report, special-status plant species are those plants listed, proposed for listing, or candidates for listing as threatened or endangered by the U.S. Fish and Wildlife Service (USFWS) under the federal Endangered Species Act (FESA) (16 USC Section 1531 et seq.); those listed or proposed for listing as rare, threatened, or endangered by the CDFW under the California Endangered Species Act (CESA) (Fish & Game Code, Section 2050 et seq.); and plants that are CRPR 1 and 2 in the CNPS's online Inventory of Rare and Endangered Plants (CNPS 2019). Special-status wildlife species are those that are designated as either rare, threatened, or endangered (or candidate) by CDFW or the USFWS; are protected under either the CESA or FESA; meet the California Environmental Quality Act (CEQA) definition for endangered, rare, or threatened (CCR Tit. 14, Section 15380(b),(d)); are considered fully protected under the California Fish & Game Code, Section 3511, 4700, 5050, and 5515; or that are on the CDFW Special Animals List (CDFW 2018) and determined by CDFW to be a Species of Special Concern.

As noted in the Methods of Analysis section below, WRA initially evaluated the potential occurrence of special-status plant and wildlife species on the Project site in 2015. Dudek biologists conducted additional resource database searches in 2018, 2019, and the species list was updated (Tables 3.4-2 and 3.4-3 and Figure 3.4-4, CNDDB Occurrences). This list was primarily derived from a review of the California Natural Diversity Database (CNDDB) (CDFW 2019), the CNPS Inventory of Rare and Endangered Plants (CNPS 2019), and the USFWS lists of federal endangered and threatened species (USFWS 2019).

The potential for those species identified in the literature search to occur on the Project site were evaluated based on the habitat requirements of each species relative to the observed existing conditions, results of previous general and focused habitat assessments and surveys for plants and animals conducted in November 3, 2011, and March 20, 2015 (WRA 2015), and surveys conducted by Dudek biologists on February 20, 2018, April 10, 2019, and June 1, 2020.

Special-Status Plants

Based on the review of the databases and other information sources, 57 special-status plant species are documented as occurring or potentially occurring in the vicinity of the Project site (Table 3.4-2). Review of Project site conditions and results of surveys conducted by WRA and Dudek staff biologists demonstrate that no special-status plants are expected to occur on the Project site for varying reasons such as the absence of habitat requirements for the species, the distance to known occurrences, the species distribution or elevation ranges, or species absence during focused protocol surveys.



SOURCE: CDFW 2015/2016, Bing Maps 2019

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FIGURE 3.4-3

Wildlife Corridors and Habitat Linkages

Hunter Subdivision Project

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Project Boundary

CNDDB Species Occurence

Plant

- 1, Bent-flowered fiddleneck (*Amsinckia lunaris*)
- 2, Calistoga ceanothus (*Ceanothus divergens*)
- 3, Calistoga popcornflower (*Plagiobothrys strictus*)
- 4, Clara Hunt's milk-vetch (*Astragalus claranus*)
- 5, Cobb Mountain lupine (*Lupinus sericatus*)
- 6, Colusa layia (*Layia septentrionalis*)
- 7, Green jewelflower (*Streptanthus hesperidis*)
- 8, Greene's narrow-leaved daisy (*Erigeron greenei*)
- 9, Holly-leaved ceanothus (*Ceanothus purpureus*)
- 10, Jepson's leptosiphon (*Leptosiphon jepsonii*)
- 11, Marsh checkerbloom (*Sidalcea oregana ssp. hydrophila*)
- 12, Napa bluecurls (*Trichostema ruygtii*)
- 13, Napa checkerbloom (*Sidalcea hickmanii ssp. napensis*)
- 14, Napa false indigo (*Amorpha californica var. napensis*)
- 15, Narrow-anthered brodiaea (*Brodiaea leptandra*)
- 16, Rincon Ridge ceanothus (*Ceanothus confusus*)
- 17, Sharsmith's western flax (*Hesperolinon sharsmithiae*)
- 18, Sonoma ceanothus (*Ceanothus sonomensis*)

Wildlife

- 1, American peregrine falcon (*Falco peregrinus anatum*)
- 2, Bald eagle (*Haliaeetus leucocephalus*)
- 3, California giant salamander (*Dicamptodon ensatus*)
- 4, Foothill yellow-legged frog (*Rana boylii*)
- 5, Fringed myotis (*Myotis thysanodes*)
- 6, North American porcupine (*Erethizon dorsatum*)
- 7, Obscure bumble bee (*Bombus caliginosus*)
- 8, Pallid bat (*Antrozous pallidus*)
- 9, Purple martin (*Progne subis*)
- 10, Steelhead - central California coast DPS (*Oncorhynchus mykiss irideus pop. 8*)
- 11, Townsend's big-eared bat (*Corynorhinus townsendii*)
- 12, Western pond turtle (*Emys marmorata*)

Critical Habitat

- Northern Spotted Owl (*Strix occidentalis caurina*)
- Steelhead (*Oncorhynchus mykiss*)

SOURCE: CDFW 2019, USFWS 2005/2012, Bing Maps 2019

DUDEK

0 3,000 6,000 Feet

FIGURE 3.4-4

CNDDB Occurrences

Hunter Subdivision Project

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Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Allium peninsulare var. *franciscanum*	Franciscan onion	None/None/1B.2	Cismontane woodland, Valley and foothill grassland; clay, volcanic, often serpentinite/perennial bulbiferous herb/(Apr)May–June/170–1,000	**Not expected to occur.** No clay, volcanic, or serpentinite soils present.
Alopecurus aequalis var. *sonomensis*	Sonoma alopecurus	FE/None/1B.1	Marshes and swamps (freshwater), Riparian scrub/perennial herb/May–July/15–1,200	**Not expected to occur**. No marsh or riparian scrub habitat present.
Amorpha californica var. *napensis*	Napa false indigo	None/None/1B.2	Broadleafed upland forest (openings), Chaparral, Cismontane woodland/ perennial deciduous shrub/Apr–July/390–6,560	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Amsinckia lunaris	bent-flowered fiddleneck	None/None/1B.2	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland, often serpentine/annual herb/Mar–June/5–1,640	**Not expected to occur.** The annual grassland onsite provides marginal habitat for this species due to a lack of serpentine soils and past and present anthropogenic disturbances at the site. Present mowing/vegetation management and past grading and agricultural uses of the site likely preclude the potential for this species to in the Project site. The plant survey did not identify the presence of the plant (see Appendix D).
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	None/None/1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest; volcanic/perennial evergreen shrub/(Jan)Mar–May(July)/1,295–5,300	**Not expected to occur**. The site is outside of the species' known elevation range and there is no chaparral or woodland habitat present.
Arctostaphylos stanfordiana ssp. *decumbens*	Rincon Ridge manzanita	None/None/1B.1	Chaparral (rhyolitic), Cismontane woodland/ perennial evergreen shrub/Feb–Apr(May)/ 245–1,215	**Not expected to occur**. No chaparral or woodland habitat present.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Astragalus claranus	Clara Hunt's milk-vetch	FE/ST/1B.1	Chaparral (openings), Cismontane woodland, Valley and foothill grassland; serpentinite or volcanic, rocky, clay/annual herb/Mar–May/245–900	**Not expected to occur**. No serpentinite or volcanic, rocky, clay soils present.
Astragalus rattanii var. *jepsonianus*	Jepson's milk-vetch	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; often serpentinite/ annual herb/Mar–June/ 965–2,295	**Not expected to occur**. The site is outside of the species' known elevation range.
Brodiaea leptandra	narrow-anthered brodiaea	None/None/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland; volcanic/perennial bulbiferous herb/May–July/360–3,000	**Not expected to occur**. The site is outside of the species' known elevation range.
Calycadenia micrantha	small-flowered calycadenia	None/None/1B.2	Chaparral, Meadows and seeps (volcanic), Valley and foothill grassland; Roadsides, rocky, talus, scree, sometimes serpentinite, sparsely vegetated areas/annual herb/June–Sep/15–4,920	**Not expected to occur**. No chaparral, meadows and seeps, or volcanic or serpentine soils with sparse vegetation present.
Castilleja ambigua var. *meadii*	Mead's owl's-clover	None/None/1B.1	Meadows and seeps, Vernal pools; Gravelly, volcanic, clay/annual herb (hemiparasitic)/Apr–May/1,475–1,560	**Not expected to occur**. The site is outside of the species' known elevation range.
Ceanothus confusus	Rincon Ridge ceanothus	None/None/1B.1	Closed-cone coniferous forest, Chaparral, Cismontane woodland; volcanic or serpentinite/ perennial evergreen shrub/ Feb–June/245–3,495	**Not expected to occur**. No forest, chaparral, or woodland habitat present.
Ceanothus divergens	Calistoga ceanothus	None/None/1B.2	Chaparral (serpentinite or volcanic, rocky)/ perennial evergreen shrub/Feb–Apr/555–3,115	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Ceanothus purpureus	holly-leaved ceanothus	None/None/1B.2	Chaparral, Cismontane woodland; volcanic, rocky/perennial evergreen shrub/Feb–June/390–2,100	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Ceanothus sonomensis	Sonoma ceanothus	None/None/1B.2	Chaparral (sandy, serpentinite or volcanic)/perennial evergreen shrub/ Feb–Apr/705–2,625	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Centromadia parryi ssp. *parryi*	pappose tarplant	None/None/1B.2	Chaparral, Coastal prairie, Meadows and seeps, Marshes and swamps (coastal salt), Valley and foothill grassland (vernally mesic); often alkaline/annual herb/May–Nov/0–1,380	**Not expected to occur**. No alkaline soils present within the vernally mesic areas of the annual grassland onsite.
Cryptantha dissita	serpentine cryptantha	None/None/1B.2	Chaparral (serpentinite)/ annual herb/Apr–June/1,295–1,905	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Downingia pusilla	dwarf downingia	None/None/2B.2	Valley and foothill grassland (mesic), Vernal pools/annual herb/Mar–May/0–1,460	**Not expected to occur**. No vernal pool habitat present.
Erigeron greenei	Greene's narrow-leaved daisy	None/None/1B.2	Chaparral (serpentinite or volcanic)/perennial herb/May–Sep/260–3,295	**Not expected to occur**. No chaparral habitat present.
Eryngium constancei	Loch Lomond button-celery	FE/SE/1B.1	Vernal pools/annual/perennial herb/Apr–une/1,505–2,805	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Eryngium jepsonii	Jepson's coyote thistle	None/None/1B.2	Valley and foothill grassland, Vernal pools; clay/perennial herb/Apr–Aug/5–985	**Not expected to occur**. No potential vernal pool habitat or clay soils present.
Fritillaria liliacea	fragrant fritillary	None/None/1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland; Often serpentinite/perennial bulbiferous herb/Feb–Apr/5–1,345	**Not expected to occur.** No serpentine soils present in the annual grassland onsite.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Fritillaria pluriflora	adobe-lily	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; often adobe/perennial bulbiferous herb/Feb–Apr/195–2,315	**Not expected to occur**. No adobe soils present within the annual grassland onsite.
Harmonia hallii	Hall's harmonia	None/None/1B.2	Chaparral (serpentinite)/ annual herb/Apr–June/1,000–3,200	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Hesperolinon bicarpellatum	two-carpellate western flax	None/None/1B.2	Chaparral (serpentinite)/ annual herb/ May–July/ 195–3,295	**Not expected to occur**. No chaparral habitat present.
Hesperolinon sharsmithiae	Sharsmith's western flax	None/None/1B.2	Chaparral; serpentinite/annual herb/May–July/885–985	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Juncus luciensis	Santa Lucia dwarf rush	None/None/1B.2	Chaparral, Great Basin scrub, Lower montane coniferous forest, Meadows and seeps, Vernal pools/annual herb/Apr–July/980–6,695	**Not expected to occur**. The site is outside of the species' known elevation range.
Lasthenia burkei	Burke's goldfields	FE/SE/1B.1	Meadows and seeps (mesic), Vernal pools/annual herb/Apr–June/45–1,970	**Not expected to occur**. No vernal pool habitat present.
Lasthenia conjugens	Contra Costa goldfields	FE/None/1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools; mesic/annual herb/Mar–June/0–1,540	**Not expected to occur**. No vernal pool habitat or alkaline mesic areas present.
Layia septentrionalis	Colusa layia	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; sandy, serpentinite/annual herb/Apr–May/325–3,595	**Not expected to occur**. The site is outside of the species' known elevation range.
Leptosiphon jepsonii	Jepson's leptosiphon	None/None/1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland; usually volcanic /annual herb/Mar–May/ 325–1,640	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Limnanthes vinculans	Sebastopol meadowfoam	FE/SE/1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools; vernally mesic/annual herb/Apr–May/45–1,000	**Not expected to occur.** No vernal pool or vernally mesic habitat present.
Lupinus sericatus	Cobb Mountain lupine	None/None/1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest/perennial herb/Mar–June/900–5,005	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	None/None/1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools; Mesic/annual herb/Apr–July/15–5,710	**Not expected to occur.** No vernal pool or vernally mesic habitat present.
Navarretia leucocephala ssp. *pauciflora*	few-flowered navarretia	FE/ST/1B.1	Vernal pools (volcanic ash flow)/annual herb/ May–June/1,310–2,805	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Navarretia leucocephala ssp. *plieantha*	many-flowered navarretia	FE/SE/1B.2	Vernal pools (volcanic ash flow)/annual herb/ May–June/95–3,115	**Not expected to occur**. No potential vernal pool habitat present.
Navarretia myersii ssp. *deminuta*	small pincushion navarretia	None/None/1B.1	Vernal pools (clay loam)/ annual herb/Apr–May/ 1,160–1,165	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Navarretia paradoxinota	Porter's navarretia	None/None/1B.3	Meadows and seeps; Serpentinite, openings, vernally mesic, often drainages/ annual herb/May–June(July)/ 540–2,755	**Not expected to occur**. The site is outside of the species' known elevation range.
Navarretia rosulata	Marin County navarretia	None/None/1B.2	Closed-cone coniferous forest, Chaparral; serpentinite, rocky/annual herb/ May–July/ 655–2,085	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	None/None/1B.3	Chaparral (rocky)/ perennial herb/Apr–Aug/2,295–4,495	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Plagiobothrys strictus	Calistoga popcornflower	FE/ST/1B.1	Meadows and seeps, Valley and foothill grassland, Vernal pools; alkaline areas near thermal springs/annual herb/Mar–June/295–525	**Not expected to occur**. No alkaline areas near thermal springs or vernal pool habitat present.
Poa napensis	Napa blue grass	FE/SE/1B.1	Meadows and seeps, Valley and foothill grassland; alkaline, near thermal springs/perennial herb/May–Aug/325–655	**Not expected to occur**. The site is outside of the species' known elevation range.
Puccinellia simplex	California alkali grass	None/None/1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools; Alkaline, vernally mesic; sinks, flats, and lake margins/ annual herb/Mar–May/5–3,050	**Not expected to occur.** No alkaline, vernally mesic, or lake margin habitat present.
Sagittaria sanfordii	Sanford's arrowhead	None/None/1B.2	Marshes and swamps (assorted shallow freshwater)/ perennial rhizomatous herb (emergent)/May–Oct(Nov)/0–2,135	**Not expected to occur**. No potential habitat present.
Sidalcea hickmanii ssp. *napensis*	Napa checkerbloom	None/None/1B.1	Chaparral; rhyolitic/perennial herb/ Apr–June/1,360–2,000	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Sidalcea oregana ssp. *hydrophila*	marsh checkerbloom	None/None/1B.2	Meadows and seeps, Riparian forest; mesic/perennial herb/(June)July–Aug/3,605–7,545	**Not expected to occur**. The site is outside of the species' known elevation range.
Sidalcea oregana ssp. *valida*	Kenwood Marsh checkerbloom	FE/SE/1B.1	Marshes and swamps (freshwater)/perennial rhizomatous herb/June–Sep/375–490	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Spergularia macrotheca var. *longistyla*	long-styled sand-spurrey	None/None/1B.2	Meadows and seeps, Marshes and swamps; Alkaline/perennial herb/Feb–May/0–835	**Not expected to occur.** No meadows, seeps, marsh or swamp habitat present.

Table 3.4-2
Special-Status Plant Species Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State/CRPR)[1]	Primary Habitat Associations/ Life Form/ Blooming Period/ Elevation Range (Feet)[2]	Potential to Occur
Streptanthus batrachopus	Tamalpais jewelflower	None/None/1B.3	Closed-cone coniferous forest, Chaparral; serpentinite/ annual herb/Apr–July/1,000–2,135	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Streptanthus brachiatus ssp. *brachiatus*	Socrates Mine jewelflower	None/None/1B.2	Closed-cone coniferous forest, Chaparral; usually serpentinite/perennial herb/May–June/1,785–3,280	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Streptanthus hesperidis	green jewelflower	None/None/1B.2	Chaparral (openings), Cismontane woodland; serpentinite, rocky/annual herb/May–July/425–2,495	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Streptanthus morrisonii ssp. *elatus*	Three Peaks jewelflower	None/None/1B.2	Chaparral (serpentinite)/ perennial herb/June–Sep/295–2,675	**Not expected to occur.** No chaparral habitat present.
Streptanthus vernalis	early jewelflower	None/None/1B.2	Closed-cone coniferous forest, Chaparral; serpentinite/ annual herb/Mar–May/2,000–2,000	**Not expected to occur**. The site is outside of the species' known elevation range and there is no potential habitat present.
Trichostema ruygtii	Napa bluecurls	None/None/1B.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland, Vernal pools/annual herb/June–Oct/95–2,230	**Not expected to occur.** No vernal pool habitat present.
Trifolium amoenum	two-fork clover	FE/None/1B.1	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite)/ annual herb/Apr–June/15–1,360	**Not expected to occur**. No serpentine soils present in the annual grassland onsite.
Trifolium hydrophilum	saline clover	None/None/1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools/annual herb/Apr–June/0–985	**Not expected to occur**. No mesic, alkaline habitat present.
Viburnum ellipticum	oval-leaved viburnum	None/None/2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest/perennial deciduous shrub/May–June/ 705–4,595	**Not expected to occur.** The site is outside of the species' known elevation range and there is no potential habitat present.

Sources: Jepson Flora Project (2019) and CNPS (2019).

Status Legend:

FE: Federally listed as endangered
FT: Federally listed as threatened
SE: State listed as endangered
ST: State listed as threatened
CRPR 1A: Plants Presumed Extirpated in California and either Rare or Extinct Elsewhere
CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
CRPR 2A: Plants Presumed Extirpated in California, But More Common Elsewhere
CRPR 2B: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
.1 Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
.2 Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
.3 Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

Bent-flowered fiddleneck (*Amsinckia lunaris*). Bent-flowered fiddleneck is a CRPR 1B.2[1] species found in coastal bluff scrub, cismontane woodland, and valley and foothill grasslands between 5 and 1,640 feet above mean sea level (CNPS 2019). This species often occurs on serpentine soils (Jepson Flora Project 2019). Bent-flowered fiddleneck blooms March through June (CNPS 2019). The nearest documented CNDDB occurrence for this species is located approximately 2 miles southeast of the Project site (Figure 3.4-1) (CDFW 2019b). This occurrence is based on a March 2010 collection of the species in ruderal grassland at the edge of a vineyard located approximately 2 miles to the southeast (CDFW 2019b). Due to a lack of serpentine soils, as well as the disturbed nature of the Project site, and past grading activities associated with development of the vineyard and the nearby detention basin, there is only marginally suitable habitat for this species on the site. Surveys conducted by Dudek biologists and botanists in April 2019 and again in June 2020, were conducted within the period when this plant would be evident and identifiable. Dudek botanists did not find evidence of this species on the Project site, nor were any species within the genus *Amsinckia* observed during the surveys, which involved one focused survey for the plant conducted according to CDFW plant survey protocol (CDFW 2018; refer to Appendix D). This species is not anticipated to occur within the Proposed Project development footprint.

A polygon representing previously documented occurrences for Geene's narrow-leaved daisy (*Erigeron greenei*) and Clara Hunt's milk-vetch (*Astragalus claranus*) encompass the Project site; however, this polygon is large and non-specific and represents historic occurrences. These occurrences are old and likely extirpated as a result of development within the city limits (CDFW 2019b). Additionally, past disturbance and the ubiquity of non-native grass cover at the site likely precludes the presence of these sensitive species.

[1] CRPR 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere; 2 Fairly endangered in California (20%–80% occurrences threatened/moderate degree and immediacy of threat).

Special-Status Wildlife

Based on results of the surveys conducted by WRA and Dudek staff biologists, review of the databases and other relevant sources, 24 special-status wildlife species have been documented as occurring or potentially occurring in the vicinity of the Project site. Of these species, two are considered to have potential for occurrence (Palid Bat and White-Tailed Kite); they are identified in Table 3.4-3 and discussed below. The remaining special-status animals are not expected to occur on the Project site for varying reasons such as the absence of essential habitat requirements for the species, the distance to known occurrences, and/or the species distribution and elevation ranges.

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
		Fish		
Oncorhynchus mykiss irideus pop. 8	steelhead – central California coast DPS	FT/None	Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead	**Not expected to occur.** Although the Project site is located in the Napa River watershed, the site is not accessible to fish residing in the Napa River.
Oncorhynchus tshawytscha	Chinook – Napa River fall-run	None/None	Genetically similar to the Central Valley fall/late fall-run Evolutionary Significant Unit (ESU). Known to occur in the Napa River watershed (NCWICC 2019b).	**Not expected to occur.** Although the Project site is located in the Napa River watershed, the site is not accessible to fish residing in the Napa River.
		Amphibians		
Dicamptodon ensatus	California giant salamander	None/SSC	Known from wet coastal forests and chaparral near streams and seeps from Mendocino Co. south to Monterey Co. and east to Napa Co. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	**Not expected to occur.** No stream or seep habitat in the present site. The nearest documented occurrence was observed in 2016 along Sulphur Creek, approximately 1.9 miles southwest of the Project site (CDFW 2019b).

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
Rana boylii	foothill yellow-legged frog	None/PST, SSC	Rocky streams and rivers with open banks in forest, chaparral, and woodland	**Not expected to occur.** No rocky stream or river habitat in the Project site. The nearest documented occurrence was observed in 2015 approximately 0.3 miles southwest of the intersection of Pope Street and Silverado Trail, along Sulphur Creek (CDFW 2019b).
Rana draytonii	California red-legged frog	FT/SSC	Lowland streams, wetlands, riparian woodlands, livestock ponds; dense, shrubby or emergent habitat associated with deep, still or slow-moving water; uses adjacent uplands	**Not expected to occur**. There is no breeding habitat for this frog at the Project site. The Riparian woodland along Napa River may provide dispersal and/or migration habitat; however, the nearest documented occurrence of this species is located greater than 9 miles west of the Project site (CDFW 2019b).
Taricha rivularis	red-bellied newt	None/SSC	Redwood forests (and sometimes other forest types) along coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean rocky substrate.	**Not expected to occur.** No redwood forest or breeding habitat present.

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
		Reptiles		
Actinemys marmorata	western pond turtle (WPT)	None/SSC	Slow-moving permanent or intermittent streams, ponds, small lakes, and reservoirs with emergent basking sites; adjacent uplands used for nesting and during winter	**Not expected to occur.** No aquatic habitat present. The detention basin just north of the site does not contain sufficient water during the active season to support WPT. The nearest potential aquatic habitat for WPT is in Napa Creek, which is nearly 600 feet from the site. Given the lack of aquatic habitat on and adjacent to the site, it is unlikely WPT would disperse through the Project site or remain present for nesting or overwintering purposes. The nearest documented occurrence is in Conn Creek adjacent to Lake Hennessy, approximately 3.5 miles southeast of the site (CDFW 2019b). No WPT, nor their sign, were observed on the Project site during the 2011, 2015, 2018, and 2019 biological fieldwork.
		Birds		
Accipiter striatus (nesting)	sharp-shinned hawk	None/WL	Nests in coniferous forests, ponderosa pine, black oak, riparian deciduous, mixed conifer, Jeffrey pine; winters in lowland woodlands and other habitats	**Not expected to occur.** No coniferous forest, black oak, or woodland nesting habitat present.

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
Agelaius tricolor (nesting colony)	tricolored blackbird	BCC/SE, SSC	Nests near freshwater, emergent wetland with cattails or tules, but also in Himalayan blackberry; forages in grasslands, woodland, and agriculture	**Not expected to occur.** Although the annual grassland onsite may provide foraging habitat, no breeding habitat for this species is present within or adjacent to the Project site. The nearest documented occurrence of this species was observed in 2014 approximately 7.8 miles northeast of the Project site (CDFW 2019b).
Aquila chrysaetos (nesting & wintering)	golden eagle	BCC/FP, WL	Nests and winters in hilly, open/semi-open areas, including shrublands, grasslands, pastures, riparian areas, mountainous canyon land, open desert rimrock terrain; nests in large trees and on cliffs in open areas and forages in open habitats	**Not expected to occur**. No breeding habitat present. The nearest documented occurrence is located greater than 10 miles southwest of the Project site (CDFW 2019b).
Athene cunicularia (burrow sites & some wintering sites)	burrowing owl	BCC/SSC	Nests and forages in grassland, open scrub, and agriculture, particularly with ground squirrel burrows	**Not expected to occur**. Although the grassland at the Project site may provide breeding and foraging habitat, no suitable burrows for this species were observed during the biological site surveys. The nearest documented occurrence for this species is located greater than 12 miles southwest of the Project site (CDFW 2019b).

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
Buteo swainsoni (nesting)	Swainson's hawk	BCC/ST	Nests in open woodland and savanna, riparian, and in isolated large trees; forages in nearby grasslands and agricultural areas such as wheat and alfalfa fields and pasture	**Not expected to occur.** Although the Project site provides potential foraging habitat, the site is outside the geographic range of this species and there are no suitable nesting trees present. The nearest documented occurrence is located along the Napa River just south of Rutherford, approximately 5.2 miles southeast of the Project site (CDFW 2019b).
Cypseloides niger (nesting)	black swift	BCC/SSC	Nests in moist crevices, caves, and cliffs behind or adjacent to waterfalls in deep canyons; forages over a wide range of habitats	**Not expected to occur**. The Project site is outside the geographic range of this species, and there is no cave or cliff nesting habitat present.
Elanus leucurus (nesting)	white-tailed kite	None/FP	Nests in woodland, riparian, and individual trees near open lands; forages opportunistically in grassland, meadows, scrubs, agriculture, emergent wetland, savanna, and disturbed lands	**Low potential to occur.** Trees on the perimeter of the Project site and directly offsite to the north may provide nesting habitat for this species. Grassland at the Project site may provide foraging habitat for this species. The nearest documented occurrence for this species is located approximately 8 miles southeast of the Project site (CDFW 2019b).

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
Falco mexicanus (nesting)	prairie falcon	BCC/WL	Forages in grassland, savanna, rangeland, agriculture, desert scrub, alpine meadows; nest on cliffs or bluffs	**Not expected to occur.** Although grassland at the Project site provides potential foraging habitat, there is no nesting habitat present onsite or in the vicinity. The nearest documented occurrence is approximately 8.4 miles northwest of the Project site (CDFW 201b9).
Falco peregrinus anatum (nesting)	American peregrine falcon	FDL, BCC/SDL, FP	Usually nests on high cliffs, dunes, buildings, bridges; forages in wetlands, riparian, meadows, croplands, especially where waterfowl are present	**Not expected to occur.** No nesting or foraging habitat present. The nearest documented occurrence is located in habitat consisting of small, volcanic cliffs, approximately 2 miles west of the Project site (CDFW 2019b).
Haliaeetus leucocephalus (nesting & wintering)	bald eagle	FDL, BCC/SE, FP	Nests in forested areas adjacent to large bodies of water, including seacoasts, rivers, swamps, large lakes; winters near large bodies of water in lowlands and mountains	**Not expected to occur**. No suitable large trees for nesting or aquatic hunting habitat present.
Pandion haliaetus (nesting)	osprey	None/WL	Large waters (lakes, reservoirs, rivers) supporting fish; usually near forest habitats, but widely observed along the coast	**Not expected to occur**. No suitable large trees for nesting or aquatic hunting habitat present.
Phalacrocorax auritus (nesting colony)	double-crested cormorant	None/WL	Nests in riparian trees near ponds, lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries,	**Not expected to occur**. No suitable large trees for nesting or aquatic hunting habitat present.

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
			and open coastlines; winter habitat includes lakes, rivers, and coastal areas	
Progne subis (nesting)	purple martin	None/SSC	Nests and forages in woodland habitats including riparian, coniferous, and valley foothill and montane woodlands; in the Sacramento region often nests in weep holes under elevated freeways	**Not expected to occur**. Although there are documented occurrences in the vicinity of the Project site (CDFW 2019b), there is no nesting or foraging habitat present onsite.
Strix occidentalis caurina	northern spotted owl	FT/ST	Nests and forages in dense, old growth forests with a complex, multi-layer canopy; prefers narrow, steep-sided canyons with north-facing slopes in northern California	**Not expected to occur**. No nesting or foraging habitat present.
Fish				
Hypomesus transpacificus	Delta smelt	FT/SE	Sacramento–San Joaquin Delta; seasonally in Suisun Bay, Carquinez Strait, and San Pablo Bay	**Not expected to occur.** The site is outside of the species' known geographic range and there is no potential habitat present.
Oncorhynchus mykiss irideus pop. 8	steelhead - central California coast DPS	FT/None	Coastal basins from Redwood Creek south to the Gualala River, inclusive; does not include summer-run steelhead	**Not expected to occur.** There is no aquatic habitat present. Although the Project site is located in the Napa River watershed, the site is not accessible to fish residing in the Napa River.
Oncorhynchus tshawytscha	Chinook – Napa River fall-run	None/None	Genetically similar to the Central Valley fall/late fall-run Evolutionary Significant Unit (ESU). Known to occur in the Napa River watershed (NCWICC 2019b)	**Not expected to occur.** There is no aquatic habitat present. Although the Project site is located in the Napa River watershed, the site is not accessible to fish residing in the Napa River.

Table 3.4-3
Special-Status Wildlife Occurrence Potential on the Project Site

Scientific Name	Common Name	Status (Federal/State)[1]	Habitat[2]	Potential to Occur
Mammals				
Antrozous pallidus	pallid bat	None/SSC	Grasslands, shrublands, woodlands, forests; most common in open, dry habitats with rocky outcrops for roosting, but also roosts in built structures and trees; extremely sensitive to disturbance of roosting sites	**Low potential to occur.** The Project site lacks roosting habitat due to ongoing anthropogenic activity in the vicinity. Grassland at the Project site could provide potential foraging habitat, although use of the site for foraging is unlikely given the lack of roosting habitat in the surrounding area.
Corynorhinus townsendii	Townsend's big-eared bat	None/SSC	Mesic habitats characterized by coniferous and deciduous forests and riparian habitat, but also xeric areas; roosts in limestone caves and lava tubes, built structures, and tunnels; extremely sensitive to disturbance of roosting sites	**Not expected to occur**. No suitable caves, lava tubes, or tunnels for roosting. Ongoing anthropogenic activity at adjacent residences likely preclude roosting on residential properties.
Invertebrates				
Syncaris pacifica	California freshwater shrimp	FE/SE	Endemic to Marin, Napa, and Sonoma Counties; found in low-elevation, low-gradient streams where riparian cover is moderate to heavy	**Not expected to occur.** No low-gradient, freshwater stream habitat present.

Sources: CDFW 2019c.

Status Abbreviations

FE: Federally Endangered
FT: Federally Threatened
PFE: Proposed Federally Endangered
PFT: Proposed Federally Threatened
FC: Federal Candidate
FDL: Federally Delisted
BCC: U.S. Fish and Wildlife Service Bird of Conservation Concern
BLM: Bureau of Land Management Sensitive Species
USFS: U.S. Forest Service Sensitive Species
SSC: California Species of Special Concern
FP: California Fully Protected Species
WL: California Watch List Species
SE: State Endangered
ST: State Threatened
PSE: Proposed State Endangered
PST: Proposed State Threatened
SDL: State Delisted
SS: List Special Animals List, but no other status
CDF: California Department of Forestry Sensitive Species

Native bats [including Pallid Bat (*Antrozous pallidus*)]. Pallid bats, a California Species of Special Concern, are widespread throughout the western United States; southern British Columbia, Canada; and mainland and Baja California, Mexico (Hermanson and O'Shea 1983; Hall 1981). Within the United States, it ranges east into southern Nebraska, western Oklahoma, and western Texas. The pallid bat is locally common in arid deserts and grasslands throughout the western United States, and occurs in shrublands, woodlands, and forests at elevations up to 8,000 feet (Hermanson and O'Shea 1983; Hall 1981). Although this species prefers rocky outcrops, cliffs, and crevices with access to open habitats for foraging, it has been observed far from such areas (Hermanson and O'Shea 1983). Pallid bat day roosts of single- or mixed-sex colonies, often including greater than 20 individuals and sometimes more than 200 individuals, usually are established in crevices or built structures (Hermanson and O'Shea 1983). This species has also been observed using live trees and snags for day and night roosts; however, preference appears to be for tall, large-diameter trees located in mature stands with low overstory cover (Baker et al. 2008).

Pallid bats forage for a variety of species, including flightless arthropods picked up from the ground (e.g., scorpions and ground crickets), insects gleaned from vegetation (e.g., cicadas), insects taken in flight, and small vertebrates that are taken on the ground. Although the species is capable of flying more than 18 miles, most foraging occurs within about 2 miles of the day roost (Hermanson and O'Shea 1983).

While mature trees north and east of the site along the Napa River, as well as barns and other agricultural buildings to the north of the site may provide roosting habitat for this species, the absence of caves, mines, rocky outcrops, and cliffs, as well as past development and current human uses of the site limits habitat suitability. The grassland onsite provides potential foraging habitat for these species. The CNDDB lists a sighting of pallid bat approximately 0.34 miles northeast of the Project site; however, this occurrence is very old (1953) and no bats or signs of bats were observed on the Project site during field surveys (CDFW 2019b). It is unlikely any bat species would occur on the site given the ruderal nature of potential roosting habitat, the history of disturbance, and the lack of proper hydrology and topography for preferred foraging.

Other native bats, such as silver-haired bat (*Lasionycteris noctivagans*) and fringed myotis (*Myotis thysanodes*) have a potential to forage and/or roost in the vicinity of the Project site. These species are protected by California Fish & Game Code Section 4150.

White-tailed Kite (*Elanus leucurus*). The white-tailed kite is a California Fully Protected species. It is commonly associated with certain types of agriculture areas (Grinnell and Miller 1944). It also generally occurs in low-elevation grassland, wetland, oak woodland, low shrub, open woodlands, or savannah habitats. It is tolerant of moderate disturbance, such as occurs near residential subdivision developments. This species also uses fencerows and irrigation ditches

(with residual vegetation). Riparian areas adjacent to open space areas are typically used for nesting, where kites prefer dense, broadleafed deciduous trees for nesting and night roosting (Brown and Amadon 1968). They also nest in young redwoods and mid-sized Douglas firs in Northern California.

White-tailed kite was not observed by WRA or Dudek biologists during the site surveys. The nearest documented occurrence for this species is approximately 7.8 miles southeast of the Project site. However, mature trees along the eastern boundary and trees located north of the Project site provide potential nesting habitat for this species. The riparian tree canopy associated with the Napa River, approximately 500 feet northeast of the Project site, also provides potential nesting habitat for white-tailed kite, and grasslands within the Project site provide potential foraging habitat for this species.

3.4.3 Regulatory Setting

Federal Regulations

Federal Endangered Species Act

Section 9 of the FESA protects federally-listed endangered and threatened wildlife species from unlawful take (16 USC Section 1538(a)(1)). “Take” is defined to mean “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct” (16 USC Section 1532(19)). In addition, federal agencies are required to determine whether a project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat designated for such species (16 USC 1536[3], [4]). Projects that would result in “take” of any federally listed threatened or endangered species are required to obtain authorization from the National Marine Fisheries Service and/or USFWS through either Section 7 (interagency consultation) or section 10(a) (incidental take permit) of the FESA, depending on whether the federal government is involved in permitting or funding that project.

No federally listed threatened or endangered species are anticipated to occur within the Project site. As a result, the provisions of the FESA would not apply to the Proposed Project.

Federal Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take of any migratory bird or any part, nest, or eggs of any such bird. Under the MBTA, “take” is defined as pursuing, hunting, shooting, capturing, collecting, or killing, or attempting to do so (16 USC 703 et seq.). In December 2017, Department of Interior Principal Deputy Solicitor Jorjani issued a memorandum (M-37050) that interprets the MBTA to only prohibit intentional take. Similarly, the Ninth Circuit Court of

Appeals, like the Fifth Circuit and the Eighth Circuit, has held that the MBTA applies only to intended takes. See Seattle Audubon Soc'y v. Evans, 952 F.2d 297, 303 (9th Cir. 1991). Unintentional or accidental take is not prohibited. In January 2021, USFWS published in the Federal Register the final regulation codifying the interpretation of the 2017 memorandum. This rule has an effective date of March 8, 2021, unless the USFWS opts to amend, rescind, or delay the rule. Regardless, USFWS reviews actions that might affect these species.

Birds may use vegetation communities or land cover types within the Project site for nesting. Intentional take of any of these birds or their nests and young, if present, is prohibited under the MBTA.

Clean Water Act

The objective of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of waters of the United States (as defined in the Code of Federal Regulations [CFR]: 33 CFR 328.3[a]). Section 401 of the Act (33 USC 1341) prohibits the discharge of any pollutant into waters of the United States. Project applicants for a federal license or permit to conduct activities including, but not limited to, the creation or operation of facilities, which may result in discharge into waters of the United States, must obtain certification that a project would not violate applicable effluent limitations and water quality standards. Section 404 of the Act (33 USC 1344) requires a federal license or permit from USACE prior to the discharge of dredge or fill material into waters of the United States, unless the activity is exempt from Section 404 permit requirements. Permit applicants must demonstrate that they have attempted to avoid or minimize impacts on the resource; however, if no further minimization of impacts is possible, the applicant is required to mitigate remaining impacts on all federally regulated waters of the United States. In California, the State Water Resources Control Board (SWRCB) and its nine Regional Water Quality Control Boards are responsible for the protection of water quality.

Based on a delineation of wetlands and other waters of the United States (Dudek 2019), seasonal wetlands and ditches within the Project site are not anticipated to be jurisdictional under Section 404 of the Clean Water Act as they are isolated and lack connectivity to any downstream waters of the United States. These features may be considered waters of the state and would be regulated by the Regional Water Quality Control Board under Section 401 of the Clean Water Act.

State Regulations

California Endangered Species Act

The CESA and Section 2081 of the California Department of Fish and Game Code identifies measures to ensure state-listed species and their habitats are conserved, protected, restored,

and enhanced. The Act requires permits from the CDFW for activities that could result in the take of a state-listed threatened or endangered species. “Take” is defined as to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill (Fish and Game Code Section 86). Section 2080 of the Fish and Game Code prohibits the take of state-listed plants and animals unless otherwise permitted under Sections 2080.1, 2081, and 2835. Section 20814(b) affords CDFW the authority to issue permits for incidental take for otherwise lawful activities. To authorize an incidental take, the impacts of the take must be minimized and fully mitigated. Issuance of incidental take permits may not jeopardize the continued existence of a state-listed species. For species listed as threatened or endangered under FESA, CDFW may rely on a federal incidental take statement or permit to authorize an incidental take under CESA.

The California Fish and Game Commission maintains a list of threatened and endangered species (Fish and Game Code Section 2070). The California Fish and Game Commission maintains two additional lists: a Candidate species list, which identifies species under review for addition to either the endangered or threatened species list, and a Species of Special Concern list which serves as a watch list based on limited distribution, declining populations, diminishing habitat, or unusual scientific, recreational, or educational value.

No state-listed threatened or endangered species are anticipated to occur within the Project site. As a result, the provisions of the CESA would not apply to the Project Proposed.

California Fully Protected Species and Species of Special Concern

The classification of “fully protected” was the CDFW’s initial effort to identify and provide additional protection to those animals that were rare or faced possible extinction. California Fish and Game Code sections (fish at Section 5515, amphibians and reptiles at Section 5050, birds at Section 3511, and mammals at Section 4700) dealing with “fully protected” species state that these species may not be taken or possessed at any time, and no provisions in this code or any other law shall be construed to authorize permits for the take of fully protected species.

In October 2011, the State passed legislation allowing take of a fully protected species covered under an approved Natural Community Conservation Plan. Species of Special Concern are broadly defined as animals not listed under the FESA or CESA, but which are nonetheless of concern to the CDFW because they are declining at a rate that could result in listing, or they historically occurred in low numbers and known threats to their persistence currently exist. This classification is intended to elicit special consideration for these animals by the CDFW, land managers, consulting biologists, and others. Additionally, this classification is intended to stimulate collection of additional information on the biology, distribution, and status of poorly known at-risk species, and focus research and management attention on them.

One California Fully Protected species, white-tailed kite, has the potential to use the Project site for foraging. Potential nesting habitat is present in trees adjacent to the southeast boundary of the Project site and offsite, but within sound and visual range of the Project site. Take of this species, including harm or harassment of any kind, is not permitted.

California Department of Fish and Game Code Sections 3503 and 4150

Birds of prey are protected in California under the Fish and Game Code Section 3503.5 (1992). Under Section 3503.5, it is "unlawful to take, possess, or destroy any birds in the order Falconiformes (diurnal birds of prey) or Strigiformes (owls) or to take, possess, or destroy any nest or egg of any bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Disturbance during breeding season that results in the incidental loss of fertile eggs or nestlings or otherwise leads to nest abandonment is considered "taking" by the CDFW.

There is potential for common raptor species such as red-tailed hawk (*Buteo jamaicensis*) and great horned owl (*Bubo virginianus*) to use mature trees for nesting to the north and east of the Project site, primarily along the Napa River corridor. If present offsite but within visual and auditory range of the Project site, nests of these species are protected during the breeding season.

Fish and Game Code Section 4150 states a mammal occurring naturally in California that is not a game mammal, fully protected mammal, or fur-bearing mammal is a nongame mammal. A nongame mammal may not be taken or possessed under this code. All bat species occurring naturally in California are considered nongame mammals and are therefore prohibited from take as stated in Fish and Game Code Section 4150.

There is a potential for native bats to forage in the Project site and/or roost in the vicinity. If these species are present during construction, measures must be implemented to avoid take of these species.

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 ranked as rare or endangered by the CNPS, are defined as follows:

1. Rank 1A: Plants presumed extinct
2. Rank 1B: Plants rare, threatened, or endangered in California and elsewhere
3. Rank 2: Plants rare, threatened, or endangered in California, but more numerous elsewhere

4. Rank 3: Plants about which more information is needed – a review list
5. Rank 4: Plants of limited distribution – a watch list

Generally, plants with a CRPR of 1A, 1B, or 2 are considered to meet the criteria for endangered, threatened, or rare species as outlined by Section 15380 of the CEQA Guidelines. Additionally, plants listed on CNPS List 1A, 1B, or 2 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.

One plant, bent-flowered fiddleneck, has a CRPR of 1B and has low potential to occur within the grassland habitat on the Project site; however, it was not observed within the site during site surveys conducted when it would be evident and identifiable. Plants protected under the Native Plant Protection Act are not anticipated to be present at the Project site. As a result, the provisions of the Native Plant Protection Act would not apply to the Proposed Project.

California Department of Fish and Game Code Sections 1600–1616

Under Sections 1600–1616 of the California Fish and Game Code, CDFW regulates activities that would substantially alter the flow, bed, channel, or bank of streams and lakes. Such activities require a 1602 Lake and Streambed Alteration Agreement from CDFW. The California Code of Regulations (CCR) defines a stream as “a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation” (14 CCR 1.72). The term “stream” includes rivers, creeks, ephemeral streams, dry washes, canals, aqueducts, irrigation ditches, and other means of water conveyance if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife. Removal of riparian vegetation also requires a Section 1602 Lake and Stream Alteration Agreement from CDFW.

Because ditches on the Project site contain a defined bed and bank and flow periodically, they are potentially regulated under Sections 1600–1616 of the California Fish and Game Code. Alteration of ditches onsite would require a Section 1602 Stream Alteration Agreement from CDFW. It is anticipated the Proposed Project would not fill or remove any of the existing ditches located adjacent to the Proposed Project boundaries.

State Water Resources Control Board

The SWRCB administers Section 401 of the Clean Water Act which requires that an applicant for a Clean Water Act Section 404 permit first obtain a certification, or waiver thereof, that a project will not violate applicable state water quality standards. The authority to either grant certification or

waive the requirement for certification has been delegated by the SWRCB to nine regional boards, including, in St Helena, the San Francisco Bay Regional Water Quality Control Board. The SWRCB protects all waters of the state, but has special responsibility for isolated wetlands and headwaters. These water bodies have high resources value but are vulnerable to filling and may lack regulation by other programs. Projects that require a USACE permit, or fall under other federal jurisdiction, and have the potential to impact waters of the state are required to comply with the terms of the Water Quality Certification Program. If a project does not require a federal license or permit, but does involve activities that may result in a discharge of harmful substances to waters of the state, the water boards have the option to regulate such activities under its state authority in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

Seasonal wetlands and ditches within the Project site may be considered waters of the state and fall within the jurisdiction of the SWRCB. Discharge in these features would require regulation in the form of Waste Discharge Requirements or Certification of Waste Discharge Requirements.

Local Regulations

City of St. Helena 1993 General Plan

The Open Space and Conservation Element of the St. Helena 1993 General Plan provides guiding and implementing policies regarding biological resources, including the following:

> **Policy 6.2.3:** Protect the riparian vegetation and habitat value of the City's stream corridors by requiring development setbacks and open space easements along the Napa River, Sulphur Creek, York Creek, and Spring Creek.
>
> **Policy 6.2.10:** Protect natural habitats which have the potential to support rare, endangered, or special status wildlife and plant species.
>
> **Implementing Policy 6.2.13:** Require new development to be sited to maximize the protective tree species, riparian vegetation, important concentrations of natural plants, and important wildlife habitat.
>
> **Implementing Policy 6.2.14**: Require all proposed projects adjacent to a riparian corridor or located in the City's hillside areas, to submit management plans for protecting natural habitat values, including provisions to:
>
> - Employ supplemental planting and maintenance of grasses, shrubs and trees of similar quality and quantity to provide adequate vegetation cover to keep the watersheds, on steep slopes and along streams, in good condition and to provide shelter and food for wildlife.

- Provide protection for wildlife habitat.
- Provide replacement habitat of like quantity and quality.

Implementing Policy 6.2.15: Require a biological assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the California Department of Fish and Game or the U.S. Fish and Wildlife Service might be present.

Policy 6.4.11: Integrate existing significant trees into future development.

Policy 6.4.12: Require replacement trees where existing significant trees cannot be saved.

Policy 6.4.13: Require street trees as a condition of new development.

City of St. Helena 2019 General Plan ("General Pan Update 2040")

The Open Space and Conservation Element of the St. Helena 2019 General Plan provides policies regarding biological resources, including the following:

Policy OS1.1: Preserve and enhance St. Helena's riparian corridors for their value in providing wildlife habitat, biodiversity, natural drainage, and visual amenity.

Policy OS1.2: Prohibit development, alteration, and/or removal of native vegetation from riparian areas. Disallow invasive species that degrade habitat quality.

Policy OS1.3: Protect and enhance contiguous corridors of riparian vegetation along the Napa River and its tributaries in order to support regional wildlife movement and enhance aquatic habitat.

Policy OS1.4: Protect natural habitats that have the potential to support rare, endangered, or special-status wildlife and plant species. Control invasive species that degrade habitat quality.

Policy OS1.5: Restrict development of hillside areas in order to protect wildlife, vegetation, viewsheds, and open space characteristics.

Policy OS1.6: Manage invasive species that degrade habitat quality, especially along the Napa River and its tributaries.

Policy OS1.7: Promote, encourage, and require sustainable agricultural practices that are sensitive to natural habitat and do not harm wildlife.

Policy 6.4.12: Require replacement trees where existing significant trees cannot be saved.

Policy 6.4.13: Require street trees as a condition of new development.

St. Helena Municipal Code

Title 12, Chapter 12.24 of the St. Helena Municipal Code protects trees and other vegetation within the City by executing provisions to protect protected trees. Protected trees include heritage trees, protected replacement trees, street trees, and city trees (Section 12.24.020). Heritage trees are defined as "any tree or grove of trees within the city boundaries designated by a resolution of the city council and having met the requirements set for in [Chapter 12.24, Section 12.22.020]."

Section 12.24.130 provides guidance for pruning, maintenance and removal of any protected trees, while Sections 12.24.140 and 12.24.150 address damage to protected trees and protection of trees during and after construction.

No tree removal is anticipated as a result of the Proposed Project. There are multiple oak trees on the banks of the ditch that runs along the southeast boundary of the Project site, near Del Rio Court. These trees would be retained and would not be removed to accommodate the Proposed Project.

3.4.4 Impacts

Methods of Analysis

The following resource databases and documents were reviewed in the course of preparing the biological resources review for the Proposed Project to establish the existing conditions as they relate to biological resources including plant and wildlife species, vegetation, and wetland and water resources. This review was supplemented with field observations as part of the previous biological resources studies conducted by WRA in 2011 and 2015, and reconnaissance surveys conducted by Dudek in 2018, 2019, and 2020.

- North Fork Associates. 2006. Wetland Delineation for the ±16-acre Hunter-St. Helena Property, St. Helena, Napa County, California. Technical Report. September 12, 2006.
- WRA 2015. Hunter Subdivision Project, St. Helena, CA. Technical Letter Report. September 15, 2015.
- Updated queries of the CNDDB (CDFW 2019), CNPS's Inventory of Rare and Endangered Vascular Plants (CNPS 2019), and the USFWS Information for Planning and Consultation (IPaC) occurrence data (USFWS 2019).

- Dudek. 2019. Preliminary Jurisdictional Delineation of Wetlands and Waters of the United States: Hunter Subdivision Project, Napa County, California. Technical Report.
- Dudek. 2020. Rare Plant Survey Results for the Hunter Subdivision Project. Memorandum.

CEQA requires that projects analyze the potential impacts on special-status plant and wildlife species, as well as on sensitive habitats, wildlife corridors, and waters of the United States. Impacts on wildlife species that are not considered special-status under CEQA 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 area surrounding the Project site, other common species (e.g., skunk, raccoon, possum, deer) would not be considered special-status species; however, impacts on their movements and migration routes would be considered significant under CEQA. Regardless of status, all nesting native bird species are protected from harm under the state Fish and Game Code and the federal MBTA.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- 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, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service.
- Have a substantial adverse effect on state or federally protected wetlands (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.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this document.

Sensitive Natural Communities

As discussed in Section 3.4.2 Environmental Setting, there are no natural communities identified as sensitive by CDFW and the USFWS within the Project site. The natural communities present onsite are not regulated by CDFW, USFWS, regional plans, or policies. Because the Project site lacks sensitive natural communities, there would be no impact and this issue (second significance threshold listed above) is not further addressed.

Conflict with any Local Policies or Ordinances Protecting Biological Resources

The Proposed Project would not conflict with applicable 1993 General Plan policies and city ordinances designed to protect biological resources including habitat (see Section 3.4.3, Regulatory Setting). For example, no tree removal is required; therefore, the Proposed Project would not need to obtain a tree permit. As such, there would be no impacts and this issue (fifth significance threshold listed above) is not further addressed.

Habitat Conservation Plan/Natural Communities Conservation Plan

The Proposed Project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Because the Project site is not located in an area subject to an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other similar plan, there would be no impacts and this issue (last significance threshold listed above) is not further addressed.

Impacts and Mitigation Measures

3.4-1: Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on 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? This impact would be potentially significant.

As discussed above and in Section 3.4.2, Environmental Setting, habitat for special-status species is generally limited in the Project site. The site is seasonally mowed/disked, and in 2010, approximately 2 feet of clean fill was spread across the site in support of the Napa River Flood Control Project. Given the disturbed nature of the site, and its proximity to frequent human

disturbance (e.g., residences and dog walkers), the site has a low potential to support sensitive plant and wildlife species. The few resources that have potential to occur are discussed below, including any potential impacts to these resources as a result of future development.

Special-Status Plants

No federal or state-listed plant species have the potential to occur onsite. One CRPR 1B.2 species, bent-flowered fiddleneck (*Amsinckia lunaris*), has the potential to occur onsite, but the likelihood of occurrence is low (see Section 3.4.2 for details). No evidence of the plant was identified on the Project site during the focused plant survey conducted in June 2020. The survey followed recommended methodology described in the CDFW Protocols for Surveying and Evaluating Impacts to Special-Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). The timing of the survey was such that bent-flowered fiddleneck would be evident and identifiable. In addition, bent-flowered fiddleneck was not identified on the Project site during multiple surveys conducted by biologists and botanists since 2006, including site visits during the bloom period in March and April (refer to Appendix D). Because the plant is not present on the site, the potential direct impact is considered **less than significant.**

Special-Status Wildlife

Comments received in response to the Notice of Preparation included concerns over potential impacts to salmonids (a grouping of fish that includes steelhead trout and salmon) residing in the Napa River. A summary of why the Proposed Project development would not adversely impact salmonids is provided below.

Salmonids: The Project site is located within the Napa River watershed; however, the Project site is not located adjacent to the river and there is no aquatic habitat for salmonids within the Project site (including central California coast steelhead DPS [distinct population segment] and fall-run Chinook salmon). The Central California coast steelhead DPS (hereafter ‘steelhead’) and fall-run Chinook salmon (hereafter ‘Chinook’) are known to occur in the Napa River, located approximately 500 feet north/northeast of the Project site. Although aquatic habitat for steelhead and Chinook is present in the Napa River, there are no fish passage opportunities between the Napa River and the Project site. As such, no direct impacts to steelhead would occur as a result of the Proposed Project.

Indirect impacts to steelhead and Chinook during construction, such as those related to water quality, are not expected to occur. Indirect impacts to salmonids as a result of poor water quality are limited to instances when salmonids are exposed to relatively high quantities of pollutants for prolonged periods of time (Bisson and Bilby 1982; Sigler et al. 1984). It is extremely unlikely that water quality stressors associated with Proposed Project construction activities such as increased turbidity or pollutants would enter the Napa River at a quantity that would harm

salmonids. The Project site does not drain directly into the Napa River, instead draining to an existing City-owned detention basin located adjacent to the site with a low-flow outlet to the Napa River. This lack of direct drainage would provide additional buffering of any discharge from Proposed Project construction, allowing additional time for mixing, settling, or other amelioration of pollutant concentrations before entering the river. Considering these factors, together with mixing provided by Napa River flows, any waterquality stressors generated by Proposed Project construction would not be expected to remain present for a prolonged time (i.e., several hours to days), further limiting potential for indirect harm to salmonids. Implemention of Proposed Project permitting requirements and conditions of approval, such as those discussed in Section 3.9 Hydrology and Water Quality would be sufficient to avoid water quality degradation, meet water quality standards and Basin Plan objectives, and prevent adverse effects on salmonids during Proposed Project construction.

Indirect impacts to steelhead and Chinook as a result of Proposed Project operation are also not anticipated. As discussed Section 3.9, Hydrology and Water Quality, the Proposed Project would result in impervious surface area as compared to existing conditions, which has the potential to increase storm water runoff rates and transport of accumulated pollutants to surface waters. However, the Proposed Project is not expected to adversely impact surface waters via storm water runoff, as all development would be subject to the most recent standards and performance criteria contained in the City's Small Municipal Separate Storm Sewer System (MS4) Permit (described in Section 3.9.3, Regulatory Setting). Further, the Proposed Project's grading plan includes all the elements necessary to demonstrate it can successfully comply with post construction MS4 Permit requirements. The Small MS4 Permit requires the Proposed Project to prepare and submit for City approval a Stormwater Control Plan that complies with the Bay Area Stormwater Management Agencies Post Construction Manual. Best management practices listed in the grading plans would be implemented including water quality features such as downspouts to landscaped swales; vegetated swales; hydrodynamic oil, water and solid separators; private street sweeping; labeled storm drains ("drains to river") and homeowner educational materials on stormwater pollution prevention are best management practices to be implemented to prevent storm runoff of poor quality from entering the Napa River or seeping into the underlying groundwater table. For more details regarding the specific best management practices proposed, refer to Section 3.9.4 (Hydrology and Water Quality; Impacts). Compliance with these requirements would prevent indirect impacts to salmonids during Proposed Project operation.

Additionally, as discussed in Section 3.9, according to the groundwater basin assessment report, groundwater pumping is a relatively small outflow component compared to surface water stormflows and groundwater baseflow discharged to the Napa River. Therefore, the basin groundwater is dominated more by precipitation than it is by groundwater pumping and the proposed groundwater pumping by the Project would be expected to have a negligible effect on flows in the Napa River (LSCE 2016). This includes any indirect impacts to salmonids within the Napa River.

No federal or state-listed wildlife species have the potential to occur onsite. Only two special-status wildlife species have the potential to occur onsite; these species are addressed below.

White-tailed kite: There is potential for white-tailed kite to use trees along the southeastern margins of the Project site or directly north of the Project site for nesting. No white-tailed kites have been observed on or near the Project site during the 2011, 2015, 2018, and 2019 biological surveys of the site. However, should white-tailed kite be breeding near the site prior to Proposed Project initiation, construction-related activities could potentially cause an adult kite to abandon an active nest that is in close proximity to the construction area and therefore leave eggs or chicks vulnerable to predation or without provisions. In addition, increased noise, glare, and lighting associated with Proposed Project operation could result in indirect impacts to nesting habitat for this species. However, noise levels associated with Proposed Project operation would be well within the City's noise thresholds and would be typical of noise from existing residential land uses directly south and west of the Project site; refer to Section 3.11, Noise and Vibration, for a full discussion.

No tree removal is proposed as part of the Proposed Project, so no direct impacts, such as mortality and/or injury to nesting kites, is anticipated. However, the potential indirect impacts associated with construction and operation of the Proposed Project are considered substantial effects on a special-status species and, therefore, would be considered a **potentially significant impact.**

Native bats (including pallid bat): There is a low potential for native bats, including pallid bat, to roost onsite. Roosting habitat, such as rock outcrops, trees, caves, and human-made structures, are absent from the Project site. Moreover, pallid bat is unlikely to roost on or near the site due to frequent human disturbance (see Section 3.4.2 for details). However, there are trees and buildings near the Project site that provide potential roosting habitat for bats, and onsite grassland could be used for foraging by these species, or others roosting within dispersal distance of the Project site.

Should native bats roost near the site or use the on-site grassland for foraging, they could be impacted by the Proposed Project. If bats were to roost in the area during construction, they could be indirectly impacted by construction-related noise. Potential direct impacts from noise include acute acoustic trauma, degradation of physiological condition and social order, avoidance of foraging areas, and disturbance from and/or abandonment of roost sites. In particular, loud ultrasonic noise (i.e., having frequencies above the range of human hearing >20 kilohertz) can deter bats from accessing and using known roosts [Caltrans 2016]). Depending on noise attenuation rates and other factors, construction equipment such as graders, dozers, and diesel engines can produce sound sufficient to disturb roosting bats.

Indirect impacts to roosting bats could also result from increased noise, light, glare, and activity associated with Proposed Project operation; however, noise levels would be within City thresholds and lighting associated with the Proposed Project would adhere to guidelines and standards set forth in Mitigation Measure AES-1 (see Section 3.1, Aesthetics) that would reduce glare and spillover light. Such standards include, but are not limited to, shielded and downward focused lighting, limited up-cast decorative lighting, and no use of mirrored glass .

No direct impacts to roosting bats are anticipated as potential roost sites, such as the trees along the southeastern margin of the site, would be avoided by the Proposed Project. However, the potential indirect impacts associated with construction and operation of the Proposed Project are considered substantial effects on a special-status species and, therefore, would be considered a **potentially significant impact** pursuant to the CEQA significance thresholds identified above.

Nesting and Migratory Birds

Trees, shrubs, grassland, and vineyards on or adjacent to the Project site provide potential nesting habitat for bird species protected under the MBTA and the California Fish and Game Code Section 3500. The quality of nesting habitat on the Project site is marginal due to regular mowing of the grassland and cultivation of the vineyard and lack of trees. No active nests were documented on or near the Project site during the 2011, 2015, 2018, and 2019 biological surveys. However, no focused surveys for nesting birds or birds of prey have been conducted at the site to date.

Direct impacts to nesting birds could result from vegetation clearing and site grading during Proposed Project construction. A majority of the Proposed Project footprint is limited to the annual grassland and vineyard, which generally do not provide nesting habitat for birds of prey, but would support some nesting bird species. Should active nests become established in the Proposed Project footprint during the time of construction, potential direct impacts could include direct harm or mortality due to construction equipment and destruction of an active nest due to vegetation removal or grading activities.

Potential indirect impacts to birds nesting near the Project site during construction would essentially be identical to those described above for white-tailed kite. The impact of noise on avian species varies among species and depends on source, duration and schedule (e.g., Hirvonen 2001; Reijnen et al. 1996; Slabbekoorn and Peet 2003; Wood and Yezerinac 2006). However, noise levels associated with Proposed Project operation would be well within the City's noise thresholds and would be typical of noise from residential land uses directly south and west of the Project site; refer to Section 3.11, Noise and Vibration. The potential direct and indirect impacts associated with construction and operation of the Proposed Project are considered substantial effects on a special-status species and, therefore, would be a **potentially significant impact**.

Mitigation Measures

Measures to mitigate potentially significant impacts on special-status wildlife species, known to occur or could potentially occur on the Project site, are described below. Implementation of the actions and measures described in Mitigation Measures BIO-1 and BIO-2, and Mitigation Measure AES-1 (see Section 3.1, Aesthetics), which also addresses this impact by reducing spillover light that can affect some species. Compliance with these mitigation measures addresses impacts to nesting birds, birds of prey, and special-status bat species and would avoid/minimize potential impacts to these species ensuring impacts would be reduced to less than significant.

BIO-1: A qualified biologist shall conduct a habitat assessment for bats in trees adjacent to the Project site within 2 weeks prior to any Project construction (site clearing, grading). The habitat assessment shall include a visual inspection of potential roosting features (bats need not be present) and presence of guano within the Project site and 50 feet around these areas. Potential roosting features found during the survey shall be mapped and described in a survey letter report. If roosting bats (individuals or colonies) are detected within the Project site, California Department of Fish and Wildlife shall be notified as soon as possible prior to any construction activity to confirm the bats can be avoided during construction. If a bat roosting or maternity colony cannot be completely avoided, a qualified biologist shall prepare a bat mitigation and monitoring plan for California Department of Fish and Wildlife review and approval, and that plan shall be implemented prior to commencement of construction that could impact the roosting bats or maternity colony.

BIO-2: If construction activities are scheduled to occur during the breeding season for birds (February 1 through August 31), the Project applicant or their contractor shall implement the following measures to avoid potential adverse effects to nesting raptors and other nesting birds:

- Preconstruction surveys by a biologist of all potential nesting habitats within 500-feet of construction activities, where accessible, shall be conducted by a qualified biologist. Surveys shall occur no more than 14 days prior to the initiation of site disturbance. If construction is stopped for 14 days or more during the breeding season, a new preconstruction nesting bird survey must be conducted before work can be restarted to ensure no new nesting has occurred in the interim.
- If preconstruction surveys indicate that nests are inactive or potential habitat is unoccupied during the construction period, no further mitigation is required, following submittal of a survey report letter to the City of St. Helena Planning Department.

- If active nests are found during preconstruction surveys, a no-disturbance buffer shall be created around active nests during the breeding season or until it is determined by the biologist that all the young have fledged. The buffers shall be established by the biologist in conjunction with the California Department of Fish and Wildlife. Typical buffers may include 500 feet for raptors and 50 to 250 feet for other bird species based on the location of the nest, the nesting species present, and types of construction activities that may cause potential nest abandonment. The perimeter of the buffer zone shall be fenced or marked with staked flagging.

3.4-2: Would the Proposed Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means? This impact would be potentially significant.

The Project site supports 0.07 acres of wetlands and 870 linear feet of other waters, in the form of four seasonal wetlands and two agricultural ditches, as shown on Figure 3.4-2. These features are anticipated to meet the criteria for jurisdictional waters of the United States based on the jurisdictional delineation conducted on the Project site in February and April 2019, on an analysis of the three parameters for wetlands (soils, hydrology, and vegetation), and connectivity/proximity to known waters of the United States in the site vicinity (i.e., Napa River).

Four seasonal wetlands are present within the Proposed Project footprint. Construction activities would result in the fill of the four wetlands. As part of the current Proposed Project design, construction of a retaining wall on or near the property line may potentially impact the agricultural ditches by filling or otherwise altering the structure or flow of these features. This is considered a **potentially significant impact.**

Mitigation Measures

Implementation of Mitigation Measure BIO-3 would ensure no net loss of wetlands or other protected waters of the U.S. or state[2] and would reduce impacts to less than significant.

BIO-3: Wetland permits (e.g., 404 Nationwide Permit, 401 Water Quality Certification, and 1602 Streambed Alteration Agreement, respectively) shall be obtained prior to any grading work. Prior to issuance of a grading permit, the Project applicant shall demonstrate authorization from the Army Corp of Engineers and any other regulatory agency to alter the wetland.

[2] Note: Permit processing can take six to nine months for minor impacts less than one half-acre in size; and up to 2 years for impacts greater than one half-acre and with special-status species impacts (Individual Permit).

3.4-3: Would the Proposed Project 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? This impact would be potentially significant.

As discussed in Section 3.4.2 Environmental Setting, the Project site does not provide an essential habitat linkage or migratory corridor functions for resident or migratory wildlife. As shown on Figure 3.4-3, the Project site itself does not function as a wildlife movement corridor due to the surrounding development, lack of connectivity with other undeveloped areas, and existing and historic uses of the site. Moreover, the Project site does not provide suitable aquatic habitat for native resident or migratory fish species (see Section 3.4.2 for details). Indirect impacts, such as construction run-off to the onsite agricultural ditches, has the potential to impact fish in the Napa River. Existing permitting requirements and conditions of approval (i.e., MS4 Permit and the City's Stormwater and Runoff Pollution Control Ordinance) are sufficient to avoid water quality degradation, meet water quality standards and Basin Plan objectives; therefore, potential indirect impacts to any native resident or migratory fish via construction runoff in the Napa River are **less than significant.** See Section 3.9, Hydrology and Water Quality, for further details.

Although the annual grassland onsite does not provide adequate cover or nursery sites for many mammal species, trees along the edge of the site provide suitable habitat for nesting birds and roosting bats. In addition, some birds may use the grassland for nesting when sufficient (i.e., tall) vegetation is present. In addition, the riparian corridor along the Napa River is located approximately 500 feet north of the Project site. Lighting and increased usage of the site by humans may result in indirect effects to local wildlife using the riparian corridor for nursery sites or as a migratory corridor. Any site disturbance to these resources could result in a **potentially significant impact**.

Mitigation Measures

Implementation of Mitigation Measure AES-1 (see Section 3.1, Aesthetics) would ensure that lighting associated with the Proposed Project would adhere to guidelines and standards that reduce glare and spillover light and impacts would be less than significant. Such standards include, but are not limited to, shielded and downward focused lighting, limited up-cast decorative lighting, and no use of mirrored glass in the Proposed Project design. Compliance with Mitigation Measure BIO-5 that reimposes Mitigation Measures BIO-1, BIO-2, and BIO-3 would ensure direct and indirect impacts to the movement of any wildlife species or migratory wildlife corridors, or to wildlife nursery sites (e.g., bird nests, bat maternity roosts) would be reduced to less than significant.

Compliance with Mitigation Measures AES-1, BIO-1, and BIO-2 mitigate this impact. No additional mitigation is necessary.

3.4.5 Cumulative Impacts

The geographic context for the analysis of cumulative biological impacts includes the areas contained within the Napa Valley and adjacent foothills (identified as the region), but primarily focused on the area within the city limits. Present and probable future projects within the region (which include, but not limited to, development in the city of St. Helena, Napa County, cities of Calistoga and Napa) are anticipated to permanently remove plant and wildlife resources, which could affect both common and special-status species and their habitat.

3.4-4: Would the Proposed Project contribute to cumulative impacts with respect to biological resources? The Project's contribution would not be considerable.

The City recently updated its General Plan and adopted the 2019 General Plan and certified the Environmental Impact Report in May 2019. The 2019 General Plan Draft Environmental Impact Report (City of St. Helena 2018) notes that development in the City and elsewhere in the cumulative analysis area could cause significant cumulative impacts to nesting raptors and other special-status species; however, these cumulative impacts would be mitigated by compliance with General Plan policies. The Project site is located within an area that has been developed for residential and agricultural purposes and development of this site would not result in the reduction of available habitat, migration corridors, or other essential elements required by special-status species in the region. No special-status species have been documented at the Project site. While the Proposed Project would convert approximately 9 acres of potential foraging habitat for raptor species, the area has been disturbed in the past and provides only marginal habitat for burrowing mammal species that are the preferred prey for many resident raptor species. The existing disturbance at the site also greatly limits availability of insect prey for special-status bat species. Additionally, agriculture and natural lands in the vicinity of the city provide greater function and value as foraging habitat for these species. Due to the lack of biological value provided by the Project site, the Proposed Project's contribution to any effects on biological resources would be considered negligible. Implementation of Mitigation Measures BIO-1 through BIO-7, would further reduce the Proposed Project's cumulative contribution to regional biological resources impacts. However, absent mitigation the Proposed Project's contribution would not represent a considerable contribution to potentially significant impacts on biological resources. The Proposed Project's contribution to any existing cumulative impacts is not considerable resulting in a **less-than-significant cumulative contribution**.

Mitgation Measures

None required.

3.4.6 References

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3.5 CULTURAL AND TRIBAL CULTURAL RESOURCES

3.5.1 Introduction

This section describes the cultural and tribal cultural resources present in the proposed Hunter Subdivision Project (Proposed Project) area and discusses applicable federal, state, and regional regulations pertaining to protection of cultural resources. This section evaluates the potential effects on cultural resources associated with development of the Proposed Project.

No comments were received that raised concerns regarding cultural or tribal cultural resources in response to the Notice of Preparation. The City of St. Helena (City) sent letters to all tribes requesting notification pursuant to Assembly Bill (AB) 52 and received responses from the Federated Indians of Graton Rancheria and the Yocha Dehe Wintun Nation. A copy of the Notice of Preparation and comments received is included in Appendix A. The Yocha Dehe Wintun Nation notes that the Project site is within their aboriginal territories and requests the cultural resources study prepared for the Proposed Project be provided for their review. The City provided the cultural report to the Yocha Dehe Nation in May 2020. Neither the Federated Indians of Graton Rancheria nor the Yocha Dehe Wintun Nation tribe requested formal consultation with the City.

The primary source referenced to prepare this section is based on the Cultural Resources Inventory and Extended Phase I and Phase II Report prepared by Dudek in March 2020. The reports are included in a confidential appendix (Appendix E) that is not available for public review given the sensitivity of the information.

3.5.2 Environmental Setting

Existing Site

The Project site is located on undeveloped land within the Napa Valley, immediately south of the Napa River, and within the City of St. Helena. The Pacific Ocean is located approximately 30 miles west, San Pablo Bay is 25 miles to the south, and Lake Berryessa is 12 miles northeast. A canal constructed for the St. Helena Flood Protection Project in 2010 bounds the site to the west and north and a residential community is present to the south. Local vegetation consists primarily of low-laying plants and grasses, with some scattered oak woodland and riparian community trees and shrubs along the drainages at the margins of the Project site. The western portion of the Project site includes an existing vineyard. The gradual slope throughout most of this area (less than 5 degrees) and proximity of Napa River and smaller drainages, would have historically resulted in the regular seasonal inundation of much of this area. The high level of surrounding topographic variability lends to the biodiversity of the area, this has traditionally provided for a broad range of flora and fauna that historically could have been used by local Wappo populations.

Geologic maps of the Project area indicate it is underlain primarily by Quaternary Alluvium consisting of Holocene-era alluvial soils deposited through stream action and erosion of the surrounding hillslopes and Franciscan Complex metamorphic deposits (Jennings et al. 1977, updated 2010). Napa Glass Mountain, the primary source of obsidian in Napa Valley, is upriver from the Project site. Soils within the Project site are mapped as Bale Clay Loam with 0 to 5% slopes. These soils are formed through alluvial action on a Holocene alluvial fan, with soils comprised of sit and clay with moderate gravel and sand components (see also Section 3.6, Geology and Soils).

Cultural Context – Ethnography

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007).

The Project area was traditionally occupied by the Wappo, whose language origins are associated with the Yukian language group. The name “Wappo” is said to be taken from the Spanish word “guapo” meaning handsome or brave, which was given to the group during Mission times by the Franciscans (Kroeber 1925). The Wappo language is the only Southern Yukian language and differs greatly from Northern Yukian with less than 20% of the basic vocabulary shared (Golla 2011). Isolated from other Yukian-speaking peoples, this group was bound on all sides by other native groups: the Lake Miwok to the north, the Patwin (Wintun) to the south and east, the Pomo to the north and west, and the Coast Miwok to the southwest (Heizer and Whipple 1971). The split between Northern Yukian and Wappo is somewhat unclear, likely ranging between 1,000 and 3,000 years ago (Kroeber 1925; Golla 2007). This split was likely related to the intrusion of Pomo-speaking communities during this period, which is evidenced through structural linguistic changes found within Wappo. These Wappo-speaking communities are indicated to have moved into the Napa region relatively, 500-1,500 years ago, based on the relatively limited presence of Miwok within the Wappo lexicon.

The territory occupied by the Wappo included Alexander Valley, most of Napa Valley, and the northern portion of Sonoma Valley. There are numerous regional subgroups including the Mishewal people of the Alexander and Knights Valley whose territory also included a small segment of the Russian River; the Mayacama people of the upper Napa Valley whose major village of *mayakma* was located near present-day Calistoga; and the Caymus people whose territory was centered around a village located at Yountville. The *Guilicos* Wappo community were situated over the mountains to the west at the head of Sonoma Creek. Yet another Wappo group was located on the south shore of Clear Lake known as Lile’ek (Golla 2011).

Wappo settlements were organized in permanent villages throughout the valleys, typically found along major watercourses, such as rivers and creeks (Sawyer 1978). Districts of smaller settlements or tribelets were generally arranged around a larger community site (Kroeber 1925). The chiefs of these smaller tribelets resided in the larger villages but were responsible for maintaining close relationships with their tribelet as well as neighboring tribes. Subsistence for the Wappo was largely dependent upon the acorn (a staple food item), as well as other native plants, and hunting of a variety of animals, including deer, bear, elk, and rabbits.

Material cultural for the Wappo included tools made of stone, sticks, and shells. Basket making, likely influenced by the Pomo, was also an important aspect of the group's material culture and was of particularly high quality and aesthetic. The last description of a traditional village (Driver 1936) describes oval-shaped houses made of grass thatch placed over bent poles (Sawyer 1978). A lack of geographical restrictions in combination with their central location between the Pomo to the west and the Patwin to the east gave the Wappo the opportunity to act as middlemen in trading of items, such as shells for use as beads or ornaments (Heizer and Elsasser 1980). The Wappo would both bury and cremate the remains of the dead. Death rituals were complex and could involve burning personal possessions and relatives cutting their hair, rubbing clay on their heads, scoring of their flesh, and participating in intense ritual dances (Sawyer 1978).

Historic Period

Spanish Period (1769–1822)

The first Spanish expedition to enter the San Francisco Bay Area occurred under Gaspar de Portola in 1769. Portola's chronicler, Fray Juan Crespi, detailed the journey of the group as it ventured up the coast. The first Spanish overland expedition into the San Francisco Bay region was led by Juan Bautista de Anza. The expedition reached San Francisco in 1776, where its members founded Mission Dolores and the Presidio. Spanish missionization of Alta California was initiated in San Diego (1769). A total of 21 missions were constructed by the Dominican and Franciscan orders between 1769 and 1823. Missions in the region included San Francisco de Asís (1776), Santa Clara de Asís (1776), San José de Guadalupe (1797 in Alameda County), San Rafael Arcángel (1817 in Marin County), and San Francisco Solano (1823 in Sonoma County; Grunsky 1989).

Mexican Period (1822–1848)

Spanish-Mexican settlers arrived in the Napa Valley in 1823. In 1836, the first land grant within the Napa Valley area was awarded to George Yount at Caymus (Bartoy et al. 2005). Local Native Americans assisted Yount in constructing his two-story Kentucky-style log house. Within the next ten years, the Napa Valley was divided and parceled into numerous ranchos. In 1836,

Nicolás Higuera, a soldier who served at the San Francisco Presidio, received several land grants from the Mexican government within Napa Valley, including an area called the Rancho Entre Napa, which included property that is now part of the present-day City of Napa.

Mexico's separation from the Spanish empire in 1821 and the secularization of the California missions in the 1830s caused further disruptions to Native American populations. Following the establishment of the Mexican republic, the government seized many of the lands belonging to Native Americans, providing them as parts of larger Land Grants to affluent Mexican citizens and rancheros. The 1833 Secularization Act passed by the Mexican Congress ordered half of all mission lands to be transferred to Native Americans, and the other half to remain in trust and managed by an appointed administrator. These orders were never implemented due to several factors that conspired to prevent Native Americans from regaining their patrimony.

Under the command of General Vallejo, Mexican soldiers had a series of conflicts with Wappo Native American tribes and allied Pomo tribes. Known as the Satiyomi Campaigns, the Wappo fought successfully against Vallejo and his Patwin allies in 1834, 1836, and 1842 (Bartoy et al. 2005). Largely as a result of these conflicts, Vallejo signed two treaties with the Wappo in 1836.

American Period (Post 1848)

California was officially ceded to the United States in 1848, which led to the continued appropriation of Native American Lands by ranchers, prospectors, and an increasing number of settlers. The United States Government did little to dissuade these trespasses. From 1850, with the passage of California's Indian Act, until legislative reforms in the late 1880s, state laws promoted conditions that amounted to indentured servitude for much of the Native American population throughout California. On February 8, 1850, Napa became one of California's original 27 counties, with the City of Napa as the seat of the county. In 1852, the first mineral springs resort in California was established at White Sulphur Springs, approximately 4 miles to the west of St. Helena (Bartoy et al. 2005). These bolstered the local economy, supporting the presence of multiple hotels and other businesses. A tremendous influx of individuals occurred in this area as a result of the California Gold Rush, which initiated in 1848. Since 1850, the economic growth of Napa County has been largely based on agriculture, ranching, timber, and mineral resources.

By 1868, the railroad had been extended to St. Helena, and with easier transportation came more residents and a thriving community. St. Helena, officially founded in 1876, was originally part of Dr. Edward Turner Bale's Rancho Carne Humana (Napa County Historical Society 2019). Bale died in 1849, leaving his wife, Maria Ygnacia Soberanes, a member of the prominent Vallejo family. Maria built Bale's grist and lumber mill into a profitable enterprise, and later sold 126 acres in the City to Henry Still and Charles Walters. She also provided land to numerous individuals as an incentive to open local businesses.

A portion of downtown St. Helena was designated a National Register Historic District in 1998. Based on records maintained by the Napa County Historical Society, it contains 35 historic buildings mostly along Main Street but also extending onto Railroad Avenue and Money Way (2019).

Records Search

The Cultural Resources Inventory and Extended Phase I and Phase II Report (confidential Appendix E) prepared for the Proposed Project included a California Historical Resources Information System (CHRIS) records search, which was conducted at the Northwest Information Center (NWIC) on October 22, 2018, for the Project site and surrounding 0.5-mile radius. This search included their collection of mapped prehistoric, historical and built-environment resources, Department of Parks and Recreation (DPR) Site Records, technical reports, archival resources, and ethnographic references. Additional consulted sources included the National Register of Historic Places (NRHP), California Inventory of Historical Resources/California Register of Historical Resources (CRHR) and listed Office of Historic Preservation Archaeological Determinations of Eligibility, California Points of Historical Interest, California Historical Landmarks, and Caltrans Bridge Survey information.

The records search conducted at the NWIC concluded that 59 previous cultural resources technical investigations have been conducted within a one half-mile of the Project site. Of these, seven have included a portion of the Project site (Appendix E, Table 1). Approximately 90% of the Project site has been included in previous investigations. Cultural resource technical investigations S-043810 through S-043810d, which include the Project site, are summarized below.

Archaeological investigations conducted by Pacific Legacy in support of the St. Helena Flood Protection Project (Flood Protection Project) occurred between 2004 and 2013. The Flood Protection Project overlapped the western and northern portions of the present Project site. As a result of the survey and Extended Phase I exploratory work, eight archaeological resources were identified (all in the general vicinity of the present Project site): CA-NAP-399, CA-NAP-406, CA-NAP-413, CA-NAP-843, CA-NAP-863, CA-NAP-1007 (formerly HMS Vineyards Site), CA-NAP-1008 (formerly Miller Vineyard Site), and CA-NAP-1009/H (formerly HMS Historic Stone Wall). Based on the results of the Phase I Inventory and Phase II Evaluation efforts conducted for the Flood Protection Project, the U.S. Army Corps of Engineers (USACE) and State Water Resources Control Board (SWRCB) determined that five of the identified archaeological sites (CA-NAP-413, CA-NAP-843, CA-NAP-1007, CA-NAP-1008, and Cal-NAP-1009H) lacked sufficient data potential and integrity to meet the criteria for NRHP eligibility. It was determined that three sites (CA-NAP-399, CA-NAP-406, and CA-NAP-863) were eligible for listing in the NRHP listing under Criterion D. Avoidance of the sites was considered, and it was determined that the objectives of the proposed Flood Protection Project were important and could not be met without destroying or damaging the identified Historic Properties. The State Historic Preservation

Office (SHPO) concurred with these findings in 2006. A Historic Properties Treatment Plan was prepared outlining a program for Phase III Data Recovery and analysis that addressed the research potential of cultural deposits situated within the Flood Protection Project area of potential effects (APE). As part of this process, a Memorandum of Agreement was prepared between SHPO, USACE, and SWRCB in 2007. With the expectation that human remains would be encountered during investigations and later monitoring activities, the Mishewal Wappo Tribe of Alexander Valley and the City developed a burial agreement for the treatment of human remains in 2007 (Bartoy and Holson 2007: 87). Phase III Data Recovery was completed of the entirety of CA-NAP-399 and CA-NAP-863, as well as an approximate 500 x 100-foot section of CA-NAP-406. Site CA-NAP-406 was indicated in report maps to continue eastward into what represents the present Project site (Bartoy et al. 2005: 90). The eastern limits of this site were not determined as part of this work, nor was subsurface evaluation or data recovery completed of this area within the present Project site.

The NWIC records search indicated that 30 individual cultural resources have been recorded within the records search area. Three of the above-mentioned resources intersect the Project site: CA-NAP-406, CA-NAP-843, and CA-NAP-1008 (Appendix E). Of these three resources, CA-NAP-406 is the only resource that meets the criteria for NRHP eligibility. As described above, work for the Flood Protection Project resulted in a substantial level of previous archaeological investigation work along the western and northern portions of the Project site. This work has demonstrated the area to contain significant and highly sensitive archaeological resources. A total of 163 human burials were recovered from one site (CA-NAP-399) as part of the Flood Protection Project, the largest number of burials recovered from a single site in Napa Valley to date (Schneider et al. 2013: 44). Human remains were not documented within archaeological resources intersecting the Project site. Documented cultural resources that intersect or are located within the Project site (CA-NAP-406, CA-NAP-843 and CA-NAP-1008) are described further, below.

P-28-000307 (CA-NAP-406)

P-28-000307 was recorded initially during survey and subsurface testing completed by Yolande Beard in 1976 as a small site with worked obsidian, a pestle fragment and a small piece of magnesite. The resource was relocated by Stuart Guedon on June 13, 1995, at this recorded location. Guedon observed light scatter of obsidian debitage. The site was recorded as part of investigations and data recovery efforts for the Flood Protection Project between 2004 and 2009 (Bartoy et al. 2005; Schneider et al. 2013). The eastern and western extent of this site remain unconfirmed, however the resource as currently recorded measures 130 x 95 meters (m). An undetermined portion of this site intersects the Project site.

Durring Pacific Legacy's 2005 evaluation, archaeological investigation of CA-NAP-406 consisted of the placement of 17 auger bores, 22 shovel test probes (50 centimeters [cm] x 50 cm), two excavation units (1 m x 1 m), and one mechanically excavated trench (3 m x 0.5 m; Bartoy et al. 2005). Four of the auger bores were placed within excavation units and shovel test probes to ensure that the maximum depth of the cultural deposit had been reached. Testing was limited to the APE, which was defined as approximately 100 feet to the east of the then proposed Adams Street extension. The total amount of soil excavated in the 22 shovel test probes and two excavation units amounted to 4.24 cubic meters. A total of 4,244 artifacts were recovered from this site during this investigation.

Phase III data recovery at CA-NAP-406 was completed between 2007 and 2009, and involved excavation of two Control Units measuring 1 x 1 m; four Rapid Recovery Units measuring 2 x 1 m; and four trenches, measuring 3 x 1 m. In total, including Phase II investigations, the recovered assemblage included 5,711 pieces of lithic debitage, 17 bifaces, one core, seven edge-modified flakes, one hammerstone, 101 charcoal fragments, seven pieces of baked clay, and 40 historical-era artifacts.

This resource was determined eligible for inclusion in the NRHP/CRHR by the USACE and SWRCB in 2005. SHPO provided concurrence with these determinations in 2006. As such, an undetermined portion of this site, continuing from the west into the Project site, is assumed eligible for NRHP/CRHR listing.

P-28-000701 (CA-NAP-843)

CA-NAP-843 was recorded initially during the survey and subsurface testing completed by J. Abell of Archaeo-Tec on April 1, 1993, for the proposed Safeway Relocation project. The site was recorded as a sparse obsidian lithic scatter with 3 projectile point fragments, one biface and several modified flakes, and debitage distributed across an area measuring 85 x 35 m. The recorded location of this site was located immediately southwest of the Project site; however, Abell noted that the resource may continue into the parcel representing the Project site. All items were identified on the surface; auguring yielded no subsurface material or identified midden-like soils. The resource was relocated by Stuart Guedon on June 13, 1995 at this recorded location. Guedon observed an extremely light and diffuse scatter of obsidian debitage that did not extend into adjoining areas.

The site was re-identified during subsurface testing by Pacific Legacy for the Flood Protection Project in 2004. While NWIC resource files map this site to the southwest, Pacific Legacy's technical report indicates that this testing occurred within the boundaries of the Project site (Bartoy et al. 2005: 126). Archaeological investigation consisted of the placement of 29 auger bores and 15 shovel test probes (50 cm x 50 cm). The total amount of soil excavated in the

shovel test probes amounted to 1.5 cubic meters. A total of four artifacts were recovered from this site during this investigation. Testing confirmed the characterization of this site as a low-density lithic scatter with no associated midden (Bartoy et al. 2005). The site was considered a sparse surface scatter with no depth to the deposit. The artifact assemblage from the site included three edge-damaged obsidian flakes and one fragment of historic glass.

Given the low density of cultural materials and the lack of spatial patterning, this resource was determined not eligible for inclusion in the NRHP or the CRHR by the USACE and SWRCB. SHPO provided concurrence with these determinations in 2006.

P-28-001267 (CA-NAP-1008)

CA-NAP-1008 (also referred to as "Miller Vineyard Site") was identified by Pacific Legacy for the Flood Protection Project initiating in 2004 at a location that falls within the northeastern portion of the Project site. The site was recorded as a surface scatter and shallow deposit of flaked lithic artifacts, predominantly Napa Valley obsidian, measuring 150 x 100 m. Extended Phase I Inventory and Phase II Evaluation work completed by Pacific Legacy occurred in 2004 and 2005 (Bartoy et al. 2005). Subsurface archaeological investigation included 32 augers, 13 shovel test pits (measuring 50 x 50 cm), two excavation units (measuring 1 x 1 m), and two mechanically excavated trenches (measuring 3 m x 0.5 m). A total of 396 artifacts were recovered from within 3.88 cubic meters of removed soil. Soil mixing to a depth of 60 centimeters below the surface (cmbs) was observed, presumably as a result of past discing activities associated with the surrounding vineyard. Obsidian hydration placed the sited chronologically between 2,500 years BP and 500 years BP.

The site was determined not eligible for CRHR/NRHP listing by the USACE and SWRCB based on the results of extended Phase I Inventory and Phase II Evaluation work for the Flood Protection Project (Bartoy et al. 2005). SHPO provided concurrence with these determinations in 2006.

Pedestrian Survey and Extended Phase I Testing

A Phase I Survey of the entire Project site was completed November 15, 2018 (Appendix E). The southern half of the Project site is occupied by a small vineyard, allowing for approximately one-half of the ground surface to be directly visible. Low-lying grasses were present throughout the northern half of the Project site, restricting visibility of the ground surface to less than 10% in most areas on this initial site visit. Evidence for buried cultural deposits was opportunistically sought through inspection of natural or artificial erosion/excavation exposures and the spoils from rodent burrows. The Project site has been subject to a number of past disturbances. The most notable of these have included present and past agricultural activities, as well as likely earth moving work in the northernmost portion of the Project site. During construction of the

Flood Protection Project placement of excess fill material was placed on the Project site. No artifacts were observed on the surface during the survey; however, visibility was highly restricted in most areas by low-lying vegetation and organic debris.

Subsurface probing (XPI probing or investigation) was conducted by a Dudek archeologist from November 15, 2018 to November 17, 2018. The intent of this work was to assess if subsurface conditions are present for significant archaeological deposits to be present. Excavation included three 6-inch hollow-stem augers and 5 shovel test probes. Excavations did result in the identification of soils within the Project site that had potential to contain archaeological deposits. The XPI investigations resulted in the identification of areas within the Project site that contain, and have the potential to contain, archaeological resources.

While the intent of the XPI investigation was to assess the potential for subsurface soils to be present, artifacts were identified in the locations nearest previously recorded archaeological resources. Archaeological testing was not intended to evaluate the frequencies or distribution of archaeological materials and deposits within the Project site. However, general results indicate artifact frequencies were highest in the central (near CA-NAP-406) and northern (CA-NAP-1008) portions of the Project site. One artifact was also identified in the southern portion of the Project site (near CA-NAP-843). The majority of cultural material was recovered from the lower, darker stratum (20-60 cmbs). Artifacts consisted predominantly of small obsidian tertiary flakes. These findings are generally consistent with results documented for Phase II excavations completed for the Flood Control Project along the western side of the central portion of the Project site (Bartoy et al. 2005). This study suggested that previous agricultural activities may have extended as deep as 60 cmbs in some areas, below which artifact frequencies decreased until encountering a gray clay sterile soil sub-stratum at approximately 1.5 meters below the surface (Schneider et al. 2013: 27). It is quite likely that this pattern extends into the Project site.

Phase II Testing and Ground Penetrating Radar

Based on the finding of the Phase I testing and the potential for unknown subsurface resources to be present within the site, further excavations were necessary to fully understand the extent of disturbances resulting from the previous Flood Protection Project and the changes in the soils. Dudek archeologists conducted the Phase II testing starting on January 20, 2020 through January 24, 2020. The intent of the Phase II survey was to build upon the Phase I survey and XPI investigation work. Results of these excavations are provided in Table 3.5-1.

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
AT-01	0-20	Negative	None	2.5Y 5/3 Light olive brown clay silt with gravel, compact
	20-40	Positive	1 obsidian shatter	2.5Y 5/3 Light olive brown clay silt with gravel, compact: 1 obsidian shatter fragment
	40-60	Negative	None	2.5Y 6/2 Light brown gray clay silt with gravel, compact. Rock impasses at 60 cmbs
AT-02	0-20	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
	20-40	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
	40-60	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
AT-03	0-20	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
	20-40	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
	40-60	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with gravel, compact
AT-04	0-20	Positive	1 green bottle glass fragment	10YR 4/1 Dark gray silty clay, no gravels: 1 fragment green bottle glass
	20-40	Negative	None	10YR 4/1 Dark gray clay, < 2% angular gravels
	40-60	Negative	None	10 YR 4/1 Dark gray clay < 5% angular gravels
	60-80	Negative	4 obsidian debitage	10 YR 4/1 Dark gray clay < 5% angular gravels. Rock impasse at 75 cmbs
AT-05	0-20	Negative	None	2.5 YR 3/2 Very dark grayish brown clay loam
	20-40	Positive	2 obsidian debitage	10YR 3/2 Very dark grayish brown silty loam with increased sand content
	40-60	Positive	2 obsidian debitage	10YR 3/2 Very dark grayish brown silty loam with increased sand content
	60-80	Positive	1 obsidian debitage	10YR 2/2 Very dark brown silty loam with increased grit, moderately compact. Rock impasse at 80 cmbs
AT-06	0-20	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	20-40	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	40-60	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	60-80	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	80-100	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	100-120	Negative	None	10YR 3/2 Very dark grayish brown silty loam
	120-140	Negative	None	2.5Y 4/3 Olive brown sandy silt, with 20% gravel.
	140-160	Negative	None	2.5Y 4/3 Olive brown sandy silt, with 20% gravel.
	160-180	Negative	None	2.5Y 4/3 Olive brown sandy silt, with 20% gravel.
	180-200	Negative	None	2.5Y 4/3 Olive brown sandy silt, with 20% gravel. Auger terminated at 187 cmbs

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
AT-07	0-20	Negative	None	10YR 3/2 Very dark grayish brown silty loam, gradual increase in sand content with depth
	20-40	Negative	None	10YR 3/2 Very dark grayish brown silty loam, gradual increase in sand content with depth
	40-60	Negative	None	10YR 4/2 Dark grayish brown sandy loam
	60-80	Negative	None	10YR 4/2 Dark grayish brown sandy loam
	80-100	Negative	None	10YR 5/3 Brown sandy clay, coarse sand with 15% angular gravels. Rock impasse at 90 cmbs
AT-08	0-20	Negative	None	10YR 3/2 Very dark grayish brown clay loam
	20-40	Negative	None	2.5Y 3/2 Very dark gray brown clay loam, increased sand, <5% small cobbles and gravel
	40-60	Negative	None	2.5Y 3/2 Very dark gray brown clay loam, increased sand, <5% small cobbles and gravel
	60-80	Negative	None	2.5Y 4/3 Olive brown sandy silt, some oxidation present
	80-100	Negative	None	2.5Y 4/4 Olive brown sandy silt, some oxidation present
AT-09	0-20	Negative	None	10YR 3/3 Dark brown silt loam
	20-40	Negative	None	10YR 3/3 Dark brown silty loam
	40-60	Negative	None	10 YR 3/2 Very dark gray brown silty clay loam. Rock impasse at 55 cmbs
AT-10	0-20	Negative	None	10YR 3/2 Very dark grayish brown silty loam with coarse sand
	20-40	Negative	None	10YR 3/3 Dark brown silty clay loam
	40-60	Negative	None	10YR 3/3 Dark brown silty clay loam. Rock impasse at 53 cmbs
AT-11	0-20	Negative	None	10YR 3/1 Very dark gray clay silt
	20-40	Negative	None	2.5Y 3/3 dark olive brown silty clay
	40-60	Negative	None	2.5Y 3/3 dark olive brown silty clay
	60-80	Negative	None	2.5Y 3/3 dark olive brown silty clay
	80-100	Negative	None	2.5Y 2.5/1 Black silty clay
	100-120	Negative	None	2.5Y 2.5/1 Black silty clay
	120-140	Negative	None	2.5Y 2.5/1 Black silty clay
	140-160	Negative	None	2.5Y 2.5/1 Black silty clay
AT-12	0-20	Positive	1 obsidian debitage	2.5Y 3/2 Very dark gray brown clay loam
	20-40	Positive	2 obsidian debitage	2.5Y 3/2 Very dark gray brown clay loam
	40-60	Negative	None	2.5Y 3/2 Very dark gray brown clay loam
	60-80	Negative	None	2.5Y 3/2 Very dark gray brown sandy clay loam, with 20% small-medihm gravels and cobbles. Rock impasse at 70 cmbs
AT-13	0-20	Positive	1 obsidian flake	2.5Y 3/2 Very dark gray brown silty loam
	20-40	Negative	None	2.5Y 3/2 Very dark gray brown silty loam
	40-60	Negative	None	2.5Y 4/1 dark geay silty clay loam with oxidation throughout

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
	60-80	Negative	None	2.5Y 2.5/1 black silty clay loam, compact
	80-100	Negative	None	2.5Y 2.5/1 black silty clay loam, compact
	100-120	Negative	None	2.5Y 2.5/1 black silty clay loam, compact
	120-140	Negative	None	10YR 4/1 dark gray mottled with 10YR 4/3 brown clay loam, compact
	140-160	Negative	None	2.5Y 5/2 grayish brown sandy clay loam
	160-180	Negative	None	2.5Y 5/2 grayish brown sandy clay loam
	180-200	Negative	None	2.5Y 5/2 grayish brown sandy clay loam
	200-220	Negative	None	2.5Y 4/2 Dark grayish brown sandy clay loam
	220-240	Negative	None	2.5Y 4/2 Dark grayish brown sandy clay loam
	240-260	Negative	None	2.5Y 4/2 Dark grayish brown sandy clay loam
	260-280	Negative	None	2.5Y 4/2 Dark grayish brown sandy loam, water table at 280 cmbs
STP-01	0-20	Positive	21 obsidian flakes, 1 retouched obsidian flake	10YR 3/2 very dark gray brown loamy clay with gravel, compact
	20-40	Positive	45 obsidian flakes	10YR 3/2 Very dark gray brown clay silt, compact
STP-02	0-20	Positive	9 obsidian flakes	2.5Y 5/3 Light olive brown clay silt with gravel, compact
	20-40	Positive	44 obsidian flakes	10YR 3/2 Very dark gray brown clay silt, compact
STP-03	0-20	Positive	3 obsidian flakes, 1 chert flake	2.5Y 5/3 Light olive brown clay silt with gravel, compact
	20-40	Positive	3 obsidian flakes	10YR 3/2 Very dark gray brown clay silt, compact
STP-04	0-20	Positive	14 obsidian flakes	10YR 3/3 Dark Brown sandy clay silt with gravel, compact
	20-40	Positive	8 obsidian flakes	10YR 3/2 Very dark gray brown clay silt, compact
STP-05	0-20	Positive	34 obsidian flakes	10YR 4/2 Dark grayish brown loamy clay with gravel, compact
	20-40	Positive	63 obsidian flakes, 1 obsidian chopper/scraper	10YR 3/2 Very dark gray brown clay silt, compact
STP-08	0-20	Positive	50 obsidian debitage	10YR 3/2 very dark gray brown loamy clay, lightly compacted, with <5% small rounded gravels
	20-40	Positive	44 obsidian debitage	10YR 3/2 very dark gray brown loamy clay, lightly compacted, with <5% small rounded gravels
	40-60	Positive	4 obsidian debitage	10YR 3/2 very dark gray brown loamy clay, lightly compacted, with <2% small rounded gravels
	60-80	Negative	None	10YR 4/3 Brown clay with <2% small angular and rounded gravels
	80-100	Negative	None	10YR 4/4 Dark yellowish-brown sandy clay, <5% gravel and cobbles
	100-120	Negative	None	10YR 4/4 Dark yellowish-brown sandy clay, <5% gravel and cobbles. Terminated at 105 cmbs due to water table

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
STP-09	0-20	Positive	21 obsidian debitage	2.5Y 3/1 Very dark gray silty clay with <10% angular gravel
	20-40	Positive	14 obsidan debitage, modern plastic	2.5Y 3/1 Very dark gray silty clay with <10% angular gravel
	40-60	Positive	21 obsidian debitage, brick fragment, wooden lathe fragment, and modern plastic	2.5Y 3/1 Very dark gray silty clay with <10% angular gravel
	60-80	Positive	21 obsidian debitage, 1 obsidian retouched edge tool, brick fragment	2.5Y 3/2 very dark gray brown sandy silt with <15% angular gravel, very compact
	80-100	Positive	22 obsidian debitage, brick fragment	2.5Y 3/2 very dark gray brown sandy silt with <15% angular gravel, very compact
	100-120	Positive	1 obsidian debitage	Auger - 2.5Y 3/2 very dark gray brown clay loam with <15% angular gravel, slightly compact. Rock impase at 120 cmbs
STP-10	0-20	Positive	1 obsidian biface, 17 obsidian debitage	2.5Y 3/2 Very dark gray brown silty clay loam
	20-40	Positive	3 obsidian debitage, 2 glass fragments, plastic, and aluminum	2.5Y 3/2 Very dark gray brown silty clay loam, increasing clay content and compaction with depth
	40-60	Positive	1 obsidian debitage	2.5Y 3/2 Very dark gray brown sandy silty clay loam
	60-80	Negative	None	Auger - 2.5Y 3/2 Very dark gray brown sandy silt
	80-100	Negative	None	Auger - 2.5Y 3/2 Very dark gray brown sandy silt
	100-120	Negative	None	Auger - 2.5Y 3/2 Very dark gray brown sandy silt
	120-140	Negative	None	Auger - 2.5Y 3/1 Very dark gray sandy clay
	140-160	Negative	None	Auger - 2.5Y 3/2 Very dark gray coarse sand. Terminated at 160 cmbs
STP-11	0-20	Positive	6 obsidian debitage	7.5YR 3/2 dark brown loamy clay with <5% rounded gravel
	20-40	Positive	3 obsidian debitage	7.5YR 3/2 dark brown loamy clay with <5% rounded gravel
	40-60	Positive	3+ pieces of plastic	10YR 3/2 dark grayish brown loam with <5% rounded gravel
	60-80	Negative	None	7.5YR 3/4 dark brown loam
	80-100	Negative	None	80-90 cmbs: 7.5YR 3/4 dark brown loam 90-100 cmbs: coarse gray sand
STP-12	0-20	Positive	3 obsidian debitage	10YR 3/3 Dark brown sandy silt
	20-40	Positive	6 obsidian debitage	10YR 3/3 Dark brown sandy silt
	40-60	Positive	13 obsidian debitage	40-50 cmbs: 10YR 3/3 Dark brown sandy silt 50-60: 10YR 3/2 Very dark grayish brown sandy silt with ~50% cobbles

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
	60-80	Negative	None	10YR 3/2 Very dark grayish brown sandy silt with ~50% cobbles. Terminated at 75 cmbs due to rock impasse
STP-14	0-20	Negative	None	10YR 4/3 Brown sandy loam with <5% gravel
	20-40	Negative	None	10YR 3/3 Dark brown sandy loam with <5% gravel
	40-60	Negative	None	10YR 3/3 Dark brown sandy loam with <5% gravel, cobbles at 55 cmbs
STP-16	0-20	Negative	None	10YR 3/2 Very dark grayish brown loamy clay
	20-40	Negative	None	10YR 3/2 Very dark grayish brown loamy clay
	40-60	Negative	None	10YR 3/2 Very dark grayish brown loamy clay, 55cmbs increased cobbles (5-10 cm diam.)
STP-17	0-20	Positive	1 obsidian debitage	10YR 3/2 Very dark grayish brown sandy loam with angular cobbles (5-15 cm diam.)
	20-40	Negative	None	10YR 3/2 Very dark grayish brown sandy loam with angular cobbles (5-15 cm diam.)
	40-60	Negative	None	10YR 3/2 Very dark grayish brown sandy loam with angular cobbles (5-15 cm diam.)
STP-18	0-20	Negative	None	10YR 3/2 Very dark grayish brown sandy loam with <5% angular gravels. Angular cobbles (4-8 cm diam.) at 15 cmbs
	20-40	Negative	None	10YR 4/1 Dark gray loamy clay, < 2% angular gravels, clobbles (~10 cm diam.)
	40-60	Negative	None	10YR 4/1 Dark gray loamy clay, < 2% angular gravels, clobbles (~10 cm diam.)
STP-19	0-20	Negative	None	10YR 3/2 Very dark grayish brown loamy clay
	20-40	Negative	None	10YR 3/3 Dark brown loamy clay with cobbles (4-8 cm diam.)
	40-60	Negative	None	10YR 3/3 Dark brown loamy clay with cobbles (4-8 cm diam.)
STP-21	0-20	Positive	1 obsidian debitage	10YR 3/2 Very dark grayish brown loamy clay with <5% angular gravels
	20-40	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with <5% angular gravels
	40-60	Negative	None	10YR 3/2 Very dark grayish brown loamy clay with <5% angular gravels
STP-22	0-20	Negative	None	10YR 3/3 Dark brown sandy loam with <5% gravel
	20-40	Negative	None	10YR 3/3 Dark brown sandy loam with <5% gravel
	40-60	Negative	None	10YR 3/3 Dark brown sandy loam with >50% cobbles (4-10 cm diam.)
STP-23	0-20	Positive	1 obsidian debitage	2.5Y 3/2 Dark Brown clay silt
	20-40	Negative	None	2.5Y 3/2 Dark Brown clay silt
	40-60	Negative	None	2.5Y 3/2 Dark Brown clay silt
	60-80	Negative	None	Auger - 60-70 cmbs: 2.5Y 3/2 Dark brown clay silt 70-80 cmbs: 2.5Y 2.5/1 Black silty clay

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
	80-100	Negative	None	Auger - 2.5Y 2.5/1 black silty clay
	100-120	Negative	None	Auger - 2.5Y 2.5/1 black silty clay
	120-140	Negative	None	Auger - 2.5Y 2.5/1 black silty clay
	140-160	Negative	None	Auger - 2.5Y 2.5/1 black silty clay
STP-24	0-20	Negative	None	10YR 3/3 Dark brown sandy silt
	20-40	Negative	None	10YR 3/3 Dark brown sandy silt
	40-60	Negative	None	10YR 3/3 Dark brown sandy silt
STP-25	0-20	Positive	1 obsidian debitage	7.5YR 3/2 Dark brown sandy loam with 5% large cobbles (5-15 cm diam.)
	20-40	Positive	1 historic ceramic	7.5YR 3/2 Dark brown sandy loam with 70% large cobbles (5-15 cm diam.)
STP-26	0-20	Negative	None	7.5YR 3/2 Dark brown silty sandy loam
	20-40	Negative	None	7.5YR 3/2 Dark brown silty sandy loam
	40-60	Negative	None	7.5YR 3/2 Dark brown silty sandy loam with 50% cobbles (5-15 cm diam.)
STP-27	0-20	Negative	None	10YR 4/2 Dark grayish brown loamy clay with ~50% gravel
	20-40	Negative	None	10YR 3/2 Very dark gray sandy clay with ~50% gravel
	40-60	Positive	12 obsidian debitage	10YR 3/2 Very dark grayish brown clay with 10% gravels: 12 obsidian debitage
	60-80	Negative	None	10YR 3/2 Very dark grayish brown sandy loam with 10% gravels
	80-100	Negative	None	10YR 2/2 Very dark brown sandy loam
	100-120	Negative	None	10YR 2/2 Very dark brown sandy loam
	120-140	Negative	None	10YR 2/2 Very dark brown sandy loam. Terminated at 130 cmbs
STP-28	0-20	Positive	6 obsidian debitage	10YR 4/2 Dark grayish brown silty clay
	20-40	Negative	None	10YR 3/2 Very dark grayish brown clay
	40-60	Negative	None	2.5YR 3/1 Very dark grayish brown
	60-80	Negative	None	Auger - 2.5YR 4/1 Very dark gray sandy clay
	80-100	Negative	None	Auger - 2.5YR 4/1 Very dark gray sandy clay
	100-120	Negative	None	Auger - 2.5YR 4/1 Very dark gray sandy clay
	120-140	Negative	None	Auger - 2.5YR 4/1 Very dark gray sandy clay
	140-160	Negative	None	Auger - 2.5YR 4/1 Very dark gray sandy clay
STP-29	0-20	Positive	6 obsidian debitage	10YR 2/2 Very dark brown clay
	20-40	Positive	3 obsidian debitage	10YR 2/2 Very dark brown clay
	40-60	Positive	4 obsidian debitage	10YR 3/2 Very dark grayish brown silty clay
	60-80	Positive	1 obsidian debitage, 3 glass fragments	10YR 3/2 Very dark grayish brown silty clay
	80-100	Negative	None	10YR 3/2 Very dark grayish brown silty clay
	100-120	Negative	None	10YR 3/2 Very dark grayish brown silty clay

Table 3.5-1
Extended Phase I and Phase II Testing Results

Unit ID	Depth (cmbs)	Results	Artifacts Recovered	Soil Description
	120-140	Negative	None	10YR 3/2 Very dark grayish brown silty clay
	140-160	Negative	None	5Y 3/1 Very dark gray silty clay. Terminated at 150 cmbs.
STP-30	0-20	Positive	2 obsidian debitage	2.5Y 3/2 Dark brown sandy loam
	20-40	Positive	1 obsidian debitage	2.5Y 3/2 Dark brown sandy loam
	40-60	Negative	None	2.5Y 3/1 Very dark grayish brown sandy loam
	60-80	Negative	None	2.5Y 4/2 Dark grayish brown sandy silt with 40% large cobbles
	80-100	Negative	None	2.5Y 4/2 Dark grayish brown sandy silt
	100-120	Negative	None	2.5Y 4/2 Dark grayish brown sandy silt

Source: Appendix E.
Notes: cmbs = centimeters below the surface; STP = shovel test pit

Ground-penetrating radar (GPR) was used in transects and blocks to locate any subsurface anomalies. The GPR was set up to record data to a maximum depth of 8 meters (approximately 26 feet). The GPR was useful in assessing the level of previous subsurface disturbance and presence and depth of fill within the Project site, and the potential for soils to support the presence of cultural material and deposits associated with the three previously recorded sites in the vicinity: CA-NAP-406, CA-NAP-843, and CA-NAP-1008.

Phase II testing for the Proposed Project included an additional 10 augers and 25 shovel test probes. Archaeological testing did not result in the identification of intact cultural deposits. Results indicate artifact frequencies were highest in the central (near CA-NAP-406) and northern (CA-NAP-1008) portions of the Proposed Project APE. Most cultural material was recovered from shallower contexts, above 60 cmbs. Modern debris was encountered to 100 cmbs, confirming clear disturbances to this depth. Artifacts consisted predominantly of small obsidian tertiary flakes. These findings are generally consistent with the assemblage documented by aerial imagery and Phase II excavations completed for the Flood Control Project along the western side of the central portion of the Proposed Project APE (Bartoy et al. 2005). This study suggested that a gray sandy clay sterile soil sub-stratum was present approximately 1.5 m below the surface (Schneider et al. 2013).

The portion of the Project site occupied by the vineyard, while previously disturbed through agricultural activities, was not capped by redistributed soils during the Flood Protection Project. As such, these areas would have the highest potential for intact cultural deposits to persist. The total assemblage of artifacts recovered from all XPI investigations and Phase II excavation units within this area included four fragments of obsidian debitage and one possibly historical-era

ceramic fragment. It is most likely that soils within the vineyard area are likely representative of the native soils underlying fill to the north of the Project site.

Tribal Cultural Resources and Tribal Consultation

A tribal cultural resource (TCR) is a site, feature, place, cultural landscape, sacred place, or object with cultural value to a tribe that is included or determined to be eligible for inclusion in the California Register of Historic Resources, included in a local register of historical resources, or otherwise determined to be significant by the lead agency of an environmental review process.

On September 28, 2018, a sacred lands file search request and a request for the Native American contact list for the area was sent to the Native American Heritage Commission (NAHC). On October 10, 2018, the NAHC responded with results from the sacred lands file search request. The sacred lands search failed to indicate the presence of recorded Native American cultural resources on the Project site or in the vicinity. The NAHC additionally provided a list of Native American tribes and individuals/organizations that might have knowledge of cultural resources in this area.

The Proposed Project is subject to compliance with AB 52 (PRC Section 21074), which requires consideration of impacts to "tribal cultural resources" as part of the California Environmental Quality Act (CEQA) process, and requires the CEQA lead agency to notify any groups (who have requested notification) of the Proposed Project who are traditionally or culturally affiliated with the geographic area of the Project site. The City sent six letters (two were sent to the Federated Indians of Graton Rancheria to two different people) dated April 23, 2018, to tribes that have requested to be notified. The City received responses from the Federated Indians of Graton Rancheria and the Yocha Dehe Wintun Nation, but neither Tribe requested formal consultation with the City. Because AB 52 is a government-to-government process, all records of correspondence related to AB 52 notification and any subsequent consultation are on file with the City.

3.5.3 Regulatory Setting

The treatment of cultural resources is governed by federal, state, and local laws and guidelines. There are specific criteria for determining whether prehistoric and historic sites or objects are significant and/or protected by law. Federal and state significance criteria generally focus on the resource's integrity and uniqueness, its relationship to similar resources, and its potential to contribute important information to scholarly research. Some resources that do not meet federal significance criteria may be considered significant by state criteria. The laws and regulations seek to mitigate impacts on significant prehistoric or historic resources. The federal, state, and local laws and guidelines for protecting historic resources are summarized below.

Federal Regulations

National Historic Preservation Act

The National Historic Preservation Act of 1966 established the 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 Code of Federal Regulations (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 generally evaluated under Criterion D, which concerns the potential to yield information important in prehistory or history.

The Section 106 review process is typically undertaken between USACE as part of issuing a Section 404 permit and the SHPO, 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 CEQA Guidelines (14 CCR 15000 et seq.). Because it is not a federal agency, the City of St. Helena is not subject to the National Historical Preservation Act, including Section 106.

State Regulations

California Environmental Quality Act

Under CEQA, public agencies must consider the effects of their actions on both "historical resources" and "unique archaeological resources." Pursuant to California Public Resources Code (PRC) 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." PRC 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 PRC Section 21084.1 and CEQA Guidelines, Sections 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 (PRC Section 5024.1 and 14 CCR Section 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 prior to making a finding as to a proposed project's impacts to historical resources (PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a)(3)). In general, a historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that (CEQA Guidelines Section 15064.5(a)(3)):

Is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California; and

A. Meets any of the following criteria:

    1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
    2. Is associated with the lives of persons important in our past;
    3. 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; or
    4. Has yielded, or may be likely to yield, information important in prehistory or history.

These factors are known as "Criteria 1, 2, 3, and 4" and parallel Criteria A, B, C, and D under the National Historic Preservation Act. 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 (PRC Section 21084.1 and CEQA Guidelines, Section 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 above, and "unique archaeological resources." Under CEQA, an archaeological resource is considered "unique" if it (PRC 21083.2(g)):

- 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.

CEQA Guidelines 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 Environmental Impact Report (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 (Section 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 PRC Section 21083.2.

CEQA Guidelines Section 15126.4(b) sets forth principles relevant to means of mitigating impacts on historical resources. It provides as follows:

(1) Where maintenance, repair, stabilization, rehabilitation, restoration, preservation, conservation or reconstruction of the historical resource will be conducted in a manner consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (1995), Weeks and Grimmer, the project’s impact on the historical resource shall generally be considered mitigated below a level of significance and thus is not significant.

(2) In some circumstances, documentation of an historical resource, by way of historic narrative, photographs or architectural drawings, as mitigation for the effects of demolition of the resource will not mitigate the effects to a point where clearly no significant effect on the environment would occur.

(3) Public agencies should, whenever feasible, seek to avoid damaging effects on any historical resource of an archaeological nature. The following factors shall be considered and discussed in an EIR for a project involving such an archaeological site:

(A) Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archaeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site.
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken. Such studies shall be deposited with the California Historical Resources Regional Information Center. Archaeological sites known to contain human remains shall be treated in accordance with the provisions of Section 7050.5 Health and Safety Code. If an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.

(D) Data recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historical resource, provided that the determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center.

CEQA and the California Public Records Act restrict the amount of information regarding cultural resources that can be disclosed in an EIR in order to avoid the possibility that such resources could be subject to vandalism or other damage (*Clover Valley Foundation v. City of Rocklin* (2011) 197 Cal.App.4th 200, 219). The State CEQA Guidelines prohibit an EIR from including "information about the location of archaeological sites and sacred lands, or any other information that is subject to the disclosure restrictions of Section 6254 of the Government Code [(part of the California Public Records Act)]" (Section 15120(d)). In turn, California Government Code Section 2654 of the California Public Records Act lists as exempt from public disclosure any records "of Native American graves, cemeteries, and sacred places and records of Native American places, features, and objects described in Sections 5097.9 and 5097.933 of the [California] Public Resources Code maintained by, or in the possession of, the Native American Heritage Commission, another state agency, or a local agency" (Cal. Gov. Code, Section 6254(r)).

PRC Section 21074 defines tribal cultural resources and Sections 5097.9 and 5097.993 of the Code list the Native American places, features, and objects, the records of which are not to be publicly disclosed under the California Public Records Act: "any Native American sanctified cemetery, places of worship, religious or ceremonial site, or sacred shrine located on public property (Section 5097.9) and any "Native American historic, cultural, or sacred site, that is listed or may be eligible for listing in the California Register of Historic Resources…, including any historic or prehistoric ruins, any burial ground, any archaeological or historic site, any inscriptions made by Native Americans at such a site, any archaeological or historic Native American rock art, or any archaeological or historic feature of a Native American historic, cultural, or sacred site" (Section 5097.993(a)(1)).

The Public Resources Act also generally prohibits disclosure of archaeological records. Government Code Section 6254.10 provides: "Nothing in [the California Public Records Act] requires disclosure of records that relate to archaeological site information and reports maintained by, or in the possession of … a local agency, including the records that the agency obtains through a consultation process between a California Native American tribe and a state or local agency."

CEQA Guidelines Section 15064.5(e), require 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 Native American Heritage Commission 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 Native American Heritage Commission. 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 297

This law 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 Native American Heritage Commission to resolve disputes regarding the disposition of such remains (Senate Bill 297). It has been incorporated into Section 15064.5(e) of the CEQA Guidelines.

Assembly Bill 52

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. The Proposed Project is subject to AB 52 and the City sent letters to all tribes requesting notification.

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 the following:

> 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

The following local/regional regulations pertaining to cultural and historic resources would apply to the Proposed Project.

City of St. Helena 1993 General Plan

The Historic Resources Element of the St. Helena 1993 General Plan provides objectives, policies, and programs regarding cultural resources, including the following:

> **Policy 7.5.1:** Preserve the City's historic and cultural resources as they contribute to the special character and quality of the City and help support its economic base.
>
> **Policy 7.5.4:** Include the preservation of the City's historic resources in all future planning decisions where identified historic resources may be affected.
>
> **Policy 7.5.5:** Recognize the Historic Resources Inventory as the City's official list of historic resources.
>
> **Policy 7.5.6:** Use the Historic Resources Inventory in future planning decisions.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Historic Resources Element of the City's adopted General Plan provides objectives, policies, and programs regarding cultural resources, including the following that are relevant to the Proposed Project:

Historic Resources Element

Policy HR1.1: Preserve the City's historic and cultural resources, so that they may contribute to the special character and quality of the City and support its economic base.

Policy HR1.5: For development and redevelopment proposals in archaeologically, tribal cultural, and paleontologically sensitive areas of St. Helena, require an assessment of the potential presence of archaeological, tribal cultural and paleontological resources, including a site survey and a records search of the California Historical Resources Information System at the Northwest Information Center (NWIC). As warranted by the results of the assessment, require additional studies to identify and address project-specific impacts on archaeological, tribal cultural, and paleontological resources. The City shall incorporate the study recommendations as project conditions of approval to ensure that impacts on archaeological, tribal cultural, and/or paleontological resources are mitigated to the extent possible. Studies shall be prepared according to National Register Bulletin 24: Guidelines for Local Surveys: A Basis for Preservation Planning and the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation.

3.5.4 Impacts

Methods of Analysis

As described above, a Cultural Resources Inventory and Extended Phase I and Phase II Report was prepared for the Proposed Project in March 2020 (Appendix E). The inventory included a review of the CHRIS records search provided by the NWIC, NAHC sacred lands file search, Native American coordination, historic research, an intensive pedestrian survey, XPI investigations, Phase II excavation, and ground penetrating radar. The study also reviewed historical aerials and topographic maps. The CHRIS records search included a review of their collection of mapped prehistoric, historical and built-environment resources, Department of Parks and Recreation (DPR) Site Records, technical reports, archival resources, and ethnographic references. Additional consulted sources included the NRHP, California Inventory of Historical Resources/CRHR and listed Office of Historic Preservation Archaeological Determinations of Eligibility, California Points of Historical Interest, California Historical Landmarks, and Caltrans Bridge Survey information.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
    - Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
    - A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Impacts and Mitigation Measures

3.5-1: Would the Proposed Project cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5? This impact would be potentially significant.

The City is the lead agency responsible for compliance with CEQA. The Proposed Project is also assumed to be subject to Section 106 compliance due to future review by USACE to authorize fill of existing wetlands prior to issuance of a grading permit for the Proposed Project (see Section 3.4, Biological Resources). According to CEQA (PRC Section 5024.1, Title 14 CCR, Section 4852), a project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect (adverse effect) on the environment and the cultural resource itself. A substantial adverse change in the significance of an historical resource would be constituted by 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.

Effects on historic properties under Section 106 of the NHPA are defined in the assessment of adverse effects in 36 CFR Section 800.5(a)(1). An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative. To comply with Section 106, the criteria of adverse effect are applied to historic properties, if any exist in the Project site. If no historic properties are identified in the Project site, a finding of "no historic properties affected" would be made for the Proposed Project. If there are historic properties in the Project site, application of the criteria of adverse effect would result in Proposed Project–related findings of either "no adverse effect" or of "adverse effect". There are no historic buildings present on the Project site that could be affected by construction activities. However, archaeological resource CA-NAP-406 which intersects the Project site has been determined to be eligible for CRHR and NRHP listing.

Consistent with 1993 General Plan Policies 7.5.5 and 7.5.6, and 2019 General Plan Policy HR1.5, a records search was conducted and in-depth testing was done on the Project site to determine the sensitivity of the site to contain subsurface resources. Inventory efforts associated with the Cultural Inventory and Extended Phase I and II Report (Appendix E) conducted for the Proposed Project identified three previously identified archaeological sites within the Project site (CA-NAP-406, CA-NAP-843, and CA-NAP-1008). An additional five archaeological sites have been identified in the immediate vicinity of the Project site. One recorded site within the Project site has been determined NRHP/CRHR eligible. CA-NAP-406 has been determined with SHPO occurrence to be eligible for listing in the NRHP listing under Criterion D. Resources CA-NAP-843 and CA-NAP-1008 were determined with SHPO concurrence to lack sufficient data potential and integrity to meet the criteria for NRHP/CRHR eligibility.

Resources CA-NAP-843 and CA-NAP-1008 have been subject to previous evaluation efforts as part of the prior Flood Protection Project and are not NRHP/CRHR eligible. Therefore, the Cultural Inventory and Extended Phase I and Phase II Report determined that impacts to CA-NAP-843 and CA-NAP-1008 would not represent a significant effect, although appropriate mitigation to account for unanticipated impacts would be required.

Resource CA-NAP-406 has been determined to be eligible for CRHR (Criterion 4) and NRHP (Criterion D) listing. However, previous investigations evaluating this resource were restricted to portions of this resource located immediately west of the Project site. Based on the results of the Phase I and Phase II archaeological excavations and a GPR investigation no intact deposits or

features associated with CA-NAP-406 appear to extend to within the Project site. It is likely that this upper layer of fill present on a majority of the site is comprised largely of redeposited and otherwise disturbed cultural deposits associated with CA-NAP-406. Soils identified below the fill were not found to contain cultural deposits or substantial frequencies of cultural material. However, because there is the potential to unearth unknown resources during Proposed Project construction and due to the presence of recorded resources nearby the impact is considered **potentially significant.**

Mitigation Measures

Compliance with Mitigation Measure CUL-1 would ensure the proper procedures and protocol are in place in the event a resource is identified. The procedures require work to stop in the event a resource is discovered and an archaeologist and/or Native American representative contacted to determine the appropriate course of action depending on the resource. Compliance with this measure, along with PRC Section 5097.98, Section 7050.5 of the California Health and Safety Code, and Section 15064.5(e) of the CEQA Guidelines. Adherence to this mitigation measure would ensure impacts would be reduced to less than significant.

CUL-1: The City shall require that an archaeological monitor is present during all ground-disturbing activities with the potential to impact previously identified cultural resources or to encounter unanticipated cultural deposits including tribal cultural resources. The determination for a Native American monitor to be present shall be made by the City, in consultation with the appropriate Native American tribe prior to the initiation of ground disturbing activities. In addition, prior to the initiation of ground-disturbing work, construction crews shall be made aware of the potential to encounter cultural resources and the requirement for cultural monitors to be present during these activities. Areas observed to have potential to contain yet-identified subsurface cultural material or deposits are located throughout the Project site, but primarily would be in the western portion of the site where the existing vineyard is located. It is anticipated resources would not be present in depths of more than 10 feet below the surface. Archaeological and Native American monitoring may be adjusted at the recommendation of the qualified archaeological principal investigator, meeting the Secretary of the Interior Professional Qualifications for Archaeology, and in consultation with the City, based on inspection of exposed subsurface soils and their observed potential to contain intact cultural deposits or material.

The archaeological and tribal monitors shall be provided a copy of technical reports prepared for the Project and pertinent appendices to inform their monitoring efforts. The archaeological and tribal monitors shall have the authority

to temporarily halt work to inspect areas as needed for potential cultural material or deposits. In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities, all construction work occurring within 100 feet of the find shall immediately stop until the qualified archaeological principal investigator, that meets the Secretary of the Interior Professional Qualifications for Archaeology, can evaluate the significance of the find and determine whether or not additional study is warranted, in consultation with the Tribe. Should it be determined by the Tribe and the archeologist, temporary flagging may be installed around this resource in order to avoid any disturbances from construction equipment. As approved by the City, in consultation with the Tribe this buffer may be adjusted by the Tribe and the archaeological principal investigator to a distance that maintains a protective perimeter around the unanticipated resource, while still allowing for construction to continue in the surrounding area.

3.5-2: Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5? This impact would be potentially significant.

As described in Impact 3.4-1, the Cultural Inventory and Extended Phase I and Phase II Report (Appendix E) conducted for the Proposed Project three archeological sites were previously identified within the Project site (CA-NAP-406, CA-NAP-843, and CA-NAP-1008), two of which (CA-NAP-843 and CA-NAP-1008) were determined not to be NRHP/CRHR eligible. The Cultural Inventory Report determined that impacts to CA-NAP-843 and CA-NAP-1008 would not represent a significant effect, although appropriate mitigation to account for unanticipated impacts would be required. Resource CA-NAP-406 has been determined to be eligible for CRHR (Criterion 4) and NRHP (Criterion D) listing.

As discussed above under Impact 3.5-1, the Phase I and Phase II archaeological excavations and GPR investigation did not identify any intact deposits or features associated with CA-NAP-406 within the Project site. However, the report notes that such deposits have the highest potential to be present beneath redeposited and disturbed fill areas located north of the planned Starr Avenue expansion, as well as portions of the Project site to the south, presently occupied by vineyards, have a higher potential to contain intact cultural deposits at shallower depths. Due to the sensitivity of the site for unknown archeological resources that may be present subsurface that could be unearthed during construction activities this is considered a **potentially significant impact.**

Mitigation Measure

Implementation of Mitigation Measure CUL-1 provides specific procedures to follow in the event a resource is identified. The procedures require work to stop in the event a resource is discovered and an archaeologist and/or Native American representative contacted to determine the appropriate course of action depending on the resource. Compliance with this measure, along with PRC Section 5097.98, Section 7050.5 of the California Health and Safety Code, and Section 15064.5(e) of the CEQA Guidelines, would ensure that potential impacts to previously unidentified subsurface resources are mitigated to less than significant and no additional mitigation is required.

3.5-3: Would the Proposed Project disturb human remains, including those interred outside of formal cemeteries? This impact would be less than significant.

The NWIC records search conducted for the Cultural Inventory and Extended Phase I and Phase II Report indicated that thirty cultural resources have been recorded within the records search area (Appendix E). As described above, work for the Flood Protection Project resulted in a substantial level of previous archaeological investigation work along the western and northern portions of the Project site. This work has demonstrated the area to contain significant and highly sensitive archaeological resources. As part of the Flood Protection Project a total of 163 human burials were recovered from one site (CA-NAP-399), the largest number of burials recovered from a single site in Napa Valley to date (Schneider et al. 2013: 44). Human remains were not documented within archaeological resources intersecting the Project site. The Phase II testing conducted for the Proposed Project by Dudek included GPR which looks for any subsurface anomalies to a depth of approximately 26 feet below the surface. Any potentially sensitive GPR anomaly was ground-truthed and no cultural features were identified as a result of these efforts. Nevertheless, due to the high archeological sensitivity of the area around the Project site, it is possible to inadvertently uncover human remains during ground-disturbing Proposed Project activities, such as grading and excavation. This is considered a **potentially significant impact.**

Mitigation Measures

Implementation of Mitigation Measure CUL-2 provides specific procedures to follow in the event human remains are identified. The procedures require work to stop and the County Coroner contacted to determine the origins of the remains. Compliance with this measure, along with PRC Section 7050.5 of the California Health and Safety Code would ensure that potential impacts to any human remains are mitigated to a less-than-significant level.

CUL-2: In the event any human remains are unearthed during site disturbing activities, Section 7050.5(b) of the California Health and Safety Code and Section 15064.5(e) of the CEQA Guidelines specifies protocols to follow in the event

human remains are discovered. The Code mandates stopping work within 100 feet of the find and contacting the County Coroner to determine the origin of the remains. If the remains are determined to be Native American the Coroner shall contact the Native American Heritage Commission within 24 hours to request that the Commission determine the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent shall be provided with the opportunity to make recommendations regarding the means of treating or disposing of the remains with appropriate dignity. Project-related ground disturbance in the vicinity of the find shall not resume until all statutory requirements have been met and evidence of completion has been submitted to the City, in consultation with the Tribe.

3.5-4: Would the Proposed Project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined by the lead agency to be significant? This impact is potentially significant.

Dudek contacted the NAHC to request a review of the sacred lands file. The NAHC responded to Dudek's request, stating that the sacred lands file search was conducted with "negative results." The City sent letters to all California Native American tribes traditionally and culturally affiliated with the Proposed Project area requesting notification pursuant to AB 52. None of the tribes contacted requested consultation pursuant to PRC Section 21080.3.1. The Yocha Dehe Wintun Nation requested to review a copy of the Cultural Report which was provided to the Tribe by the City for their review on May 18, 2020.

Based on a review of the Cultural Resources evaluation conducted for the Project site and letters provided by the Tribes in response to letters sent by the City pursuant to AB 52, there are no known TCRs present, as defined in PRC Section 21074, on the Project site or in its immediate vicinity. The general area was previously documented to be of importance to traditionally geographically affiliated tribes through the Flood Protection Project, and active outreach with these parties should continue into the future. The Project site is undeveloped, although has been subject to substantial previous disturbance and has historically been used for agriculture. The CHRIS records search conducted for the Proposed Project area did not identify any previously recorded TCRs on the Project site (Appendix E).

As previously stated, archaeological sites have been identified on the Project site and in the immediate vicinity during the records search and verified during the intensive Phase I and Phase II testing conducted on the Project site. Resource CA-NAP-406 was determined to be eligible for CRHR and NRHP listing, although this resource is not identified as a TCR. Due to the sensitivity

of the site for unknown archeological resources that could be unearthed during construction activities, it was determined there would be a potentially significant impact to archaeological resources. Given the sensitivity of the site for cultural resources, the potential for unknown tribal cultural resources to be encountered during Proposed Project ground-disturbing activities also exists. Therefore, this is considered a **potentially significant impact**.

Mitigation Measures

While no known TCRs have been identified that may be affected by the Proposed Project, implementation of Mitigation Measure CUL-1 would require construction work to stop and a Native American representative contacted (if not already conducting on-site monitoring) if any TCRs are unearthed and appropriate measures to be implemented to evaluate the significance of the find. Compliance with Mitigation Measure CUL-1 would ensure potential impacts would be less than significant and no additional mitigation is required.

3.5.5 Cumulative Impacts

The geographic scope of the cumulative impact analysis for the evaluation of potential cumulative impacts on cultural resources is the City of St. Helena.

3.5-5: Would the Proposed Project contribute to cumulative impacts to cultural resources, including historical and archeological resources as defined in CEQA Guidelines Section 15064.5 and human remains? The Project's contribution would be considered potentially significant.

Several historical resources and prehistoric and archeological sites have been recorded within the City, including both on and adjacent to the Project site. Development in the region could result in the damage or destruction of known and unknown archaeological and historical resources, as well as any existing undiscovered subsurface artifacts. The cumulative impact from past, present, and probable future projects, as well as the Proposed Project, is potentially significant.

The 1993 General Plan EIR concluded that the 1993 General Plan could result in substantial adverse changes in the significance of historical resources, and would have a significant and unavoidable impact to prehistoric archaeological sites that may contain human remains with religious significance to local Native American groups (City of St. Helena 2010). The 1993 General Plan states that there are a number of historic resources in the City (dating from the mid-nineteenth to mid-twentieth century) vulnerable to incompatible alterations and demolition. However, the Proposed Project does not include any known historic resources from this time period. The 2019 General Plan EIR concluded that impacts on cultural resources, including historic, archeological and prehistoric associated with buildout of the city would not result in a significant impact (City of St. Helena 2018). The EIR notes that compliance with 2019 General

Plan Policy HR1.5 would minimize or avoid potential impacts on any resources known or not known at this time and that may be encountered in the future. In addition, there are numerous laws, regulations, and statutes, on both the federal and state levels, that seek to protect cultural resources. These would apply to development within and outside the city. However, because the Project site contains a high likelihood for the discovery of unknown subsurface historical or prehistoric resources, the Proposed Project's contribution to the cumulative loss of cultural resources is considered **potentially significant.**

Mitigation Measures

Implementation of Mitigation Measure CUL-1 provides specific procedures to follow in the event a resource is identified. The procedures require work to stop in the event a resource is discovered and an archaeologist and/or Native American representative contacted to determine the appropriate course of action depending on the resource. Compliance with this measure, along with PRC Section 5097.98, Section 7050.5 of the California Health and Safety Code, and Section 15064.5(e) of the CEQA Guidelines, would ensure that potential impacts to previously unidentified subsurface resources are mitigated to a less-than-significant level and the Proposed Project's incremental contribution would be reduced to less than significant and no additional mitigation is required.

3.5-6: Would the Proposed Project contribute to cumulative impacts to tribal cultural resources, currently listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined by the lead agency to be significant? The Project's contribution would be potentially significant.

As stated previously, the 1993 General Plan EIR determined that there would be a significant and unavoidable impact to prehistoric archaeological sites that may contain human remains with religious significance to local Native American groups (City of St. Helena 2010). However, the City of St. Helena General Plan Update EIR identified that development under the City's 2019 General Plan would result in less-than-significant impacts to TCRs. Policy HR1.5 in the 2019 General Plan would minimize or avoid potential impacts on any resources known or not known at this time that may be encountered in the future and would promote coordination with Native American tribes if any tribal resources are discovered at development sites. The impact on Native American tribal cultural resources was therefore determined to be less than significant.

Numerous laws, regulations, and statutes, on both the federal and state levels, seek to protect cultural resources. These would apply to development within and outside the city. In addition, General Plan policies are designed to safeguard cultural resources from unnecessary impacts. Because all significant tribal cultural resources are unique and non-renewable members of finite

classes, all adverse effects or negative impacts erode a dwindling resource base. Although unlikely, there is the potential the Proposed Project could adversely affect significant tribal cultural resources that are unique and non-renewable members of finite classes if discovered contributing to a potentially considerable contribution. Therefore, the Proposed Project's incremental contribution to the cumulative loss of cultural resources is considered **potentially significant.**

Mitigation Measures

Implementation of Mitigation Measure CUL-1 provides specific procedures to follow in the event a TCR is identified. The procedures require work to stop in the event a resource is discovered and an archaeologist and/or Native American representative contacted to determine the appropriate course of action depending on the resource. Compliance with this measure, along with PRC Section 5097.98, Section 7050.5 of the California Health and Safety Code, and Section 15064.5(e) of the CEQA Guidelines, would ensure that potential impacts to TCRs are mitigated to a less-than-significant level and the Proposed Project's incremental contribution would be reduced to less than significant and no additional mitigation is required.

3.5.6 References

City of St. Helena. 1993. City of St. Helena 1993 General Plan. September 28, 1993.

City of St. Helena. 2010. St. Helena General Plan Update. Prepared by ESA. August 2010.

City of St. Helena. 2018. St. Helena General Plan Update 2040 Draft Environmental Impact Report SCH# 2010042001. October 23, 2018.

City of St. Helena. 2019. St. Helena General Plan Update 2040. June 2019.

Dudek. 2020. Cultural Resources Inventory, Extended Phase I and Phase II Report for the Hunter Subdivision Project, Napa County, California (Confidential Report). May 2020.

3.6 GEOLOGY AND SOILS

3.6.1 Introduction

This section evaluates the potential effects on geologic and soil resources as well as paleontological resources associated with development of the proposed Hunter Subdivision Project (Proposed Project). This section describes the geologic setting and soil resources located on the Project site and within the Proposed Project's surrounding area, as well as the applicable federal, state, and regional regulations pertaining to geologic and soil resources.

There were no comments received in response to the Notice of Preparation specifically related to geological impacts. A copy of the Notice of Preparation and comments received is included in Appendix A. Comments related to conversion of prime agricultural farmland and excess runoff and erosion are addressed in Section 3.2, Agriculture and Forestry Resources, and Section 3.9, Hydrology and Water Quality, respectively.

Information contained in this section is based on Project site plans, City of St. Helena (City) planning documents (including the 1993 General Plan, the 2019 General Plan, and the 2019 General Plan Draft Environmental Impact Report), geotechnical engineering reports prepared for the Proposed Project, and publicly available maps, data and reports from the U.S. Geological Survey (USGS), U.S. Department of Agriculture, and the California Geological Survey. Other sources consulted are listed in Section 3.6.6, References. Copies of the geotechnical reports prepared for the Project site are included in Appendix F.

3.6.2 Environmental Setting

This section describes the existing environmental setting of the region and Project site and identifies the resources that could be affected by the Proposed Project, or which could affect the Proposed Project.

Regional Physiography

The Project site is located within California's Coast Ranges Geomorphic Province, a geologically young and seismically active region. A conspicuous characteristic of this province, including Napa County, is the general northwest-southeast orientation of physiographic features such as valleys and ridgelines. The City of St. Helena is situated within the Napa Valley floor, bounded by the Mayacamas Mountain Range on the western and northern sides and the Vaca Mountains on the eastern side. These ranges consist of Sonoma Volcanics (Pliocene rhyolite, dacite, tuff, and pyroclastic rocks) overlying Franciscan Complex mélange (sandstone, shale, chert, conglomerate, and greenstone). The region is located within the Napa Valley American Viticultural Area and is known for the agriculture that characterizes the valley. The Napa River bisects the valley and flows through the eastern portion of the city. The City's terrain ranges from flat agricultural areas to gently rolling foothills.

Site Setting

The northern edge of the Project site is located approximately 500 feet southwest of the southeasterly flowing Napa River, on a flat alluvial floodplain formed by the river and its tributaries. Important tributaries to the Napa River in the city include York Creek, which discharges into the Napa River approximately one mile further upstream from the Project site, and Sulphur Creek, which discharges into the Napa River approximately a quarter-mile further downstream. The geology of the site is dominated by unconsolidated Quaternary age[1] alluvium, with the northern half of the site consisting of an alluvial terrace deposits formed by the Napa River, and the southern half of the site consisting of the distal end of alluvial fans formed by the northeasterly-flowing streams coming out of the Mayacamas Mountains.

Topography

Based on the Proposed Project's grading plan, the elevation across the Proposed Project's development footprint ranges from approximately 230 feet above mean sea level on its southern edge to approximately 212 feet above mean sea level on its northern edge. The average slope gradient across the development footprint is less than 1.5% toward the north and east. There is a slight break in slope near the center of the site, where a gentle (nearly imperceptible) slope transitions to a flat surface. This slight break in slope is coincident with the historical extent of the Napa River floodplain that existed prior to the completion of the City's Flood Protection Project that constructed a levee along the Napa River in 2010 that now provides a 200-year level of flood protection. Prior to 2010, the topography of the site was slightly different, as mass grading associated with construction of the off-site levee and detention basin resulted in filling in a former pond and placement of a thin layer of engineered fill over portions of the Project site.

The portion of the site planned for the extension of Adams Street ranges from 243 feet to 230 feet above mean sea level, with a gradual slope of 1.5%.

Geology

The Project site is underlain by unconsolidated Holocene[2] age alluvial deposits. These deposits consist of alluvial fan and fluvial deposits, which are typically composed of varying mixtures of clay, silt, sand, gravel and cobbles, depending on location. As mapped by the U.S. Geological Survey (USGS 2007), the Project site is underlain by the following two geologic units, shown in Figure 3.6-1, Geologic Map:

[1] The Quaternary is a geologic period representing the last 2.5 million years and consists of the Pleistocene epoch and the more recent Holocene epoch.

[2] The Holocene is a geologic epoch lasting from 11,700 years ago (+/- 100 years) to the present day.

- Terrace deposits (Qht): Terrace deposits consist of moderately well sorted sand, silt, gravel, and minor clay deposited in point bar and overbank settings. Mostly undissected[3] by later erosion.
- Alluvial fan deposits (Qhf): Alluvial fan deposits consist of moderately to poorly sorted and moderately to poorly bedded sand, gravel, silt and clay deposited where streams emanate from upland regions onto valley floors or plains. The alluvial fans deposits are mostly undissected by later erosion. In places, Holocene deposits may only form a thin layer over Pleistocene and older deposits.

The surface boundary between these two geologic units, shown in Figure 3.6-1, is coincident with the aforementioned topographic break in slope. Based on regional work in reconstructing the subsurface geology exposed in water well driller logs, it is estimated that the Quaternary age alluvium extends to a depth of between 50 and 100 feet below the ground surface (bgs), with Tertiary age[4] sedimentary and volcanic rocks (e.g., Sonoma Volcanics) extending below that to over 500 feet bgs (LSCE and MBK 2013).

Geologic units can contain several types of soils that generally have similar properties or are from the same time period and formed in similar ways. Below is a description of the soils present on the Project site.

Soils

The top 5 feet of the geologic units described above is characterized by a mantle of soil that varies in thickness and character. In general, soil characteristics are strongly governed by slope, relief, climate, vegetation, and the geologic unit upon which they form. Soil types are important in describing engineering constraints such as susceptibility to soil erosion (from both water and wind), corrosion risks, and various behaviors that affect structures, such as expansion and settlement. The type, aerial extent, and some key physical and hydrological characteristics of soils within the Project site were identified based on a review of a soil survey of Napa County completed by the U.S. Department of Agriculture's Natural Resources Conservation Service (USDA 2019). Soil units are described in Table 3.6-1 and shown in Figure 3.6-2, Soils.

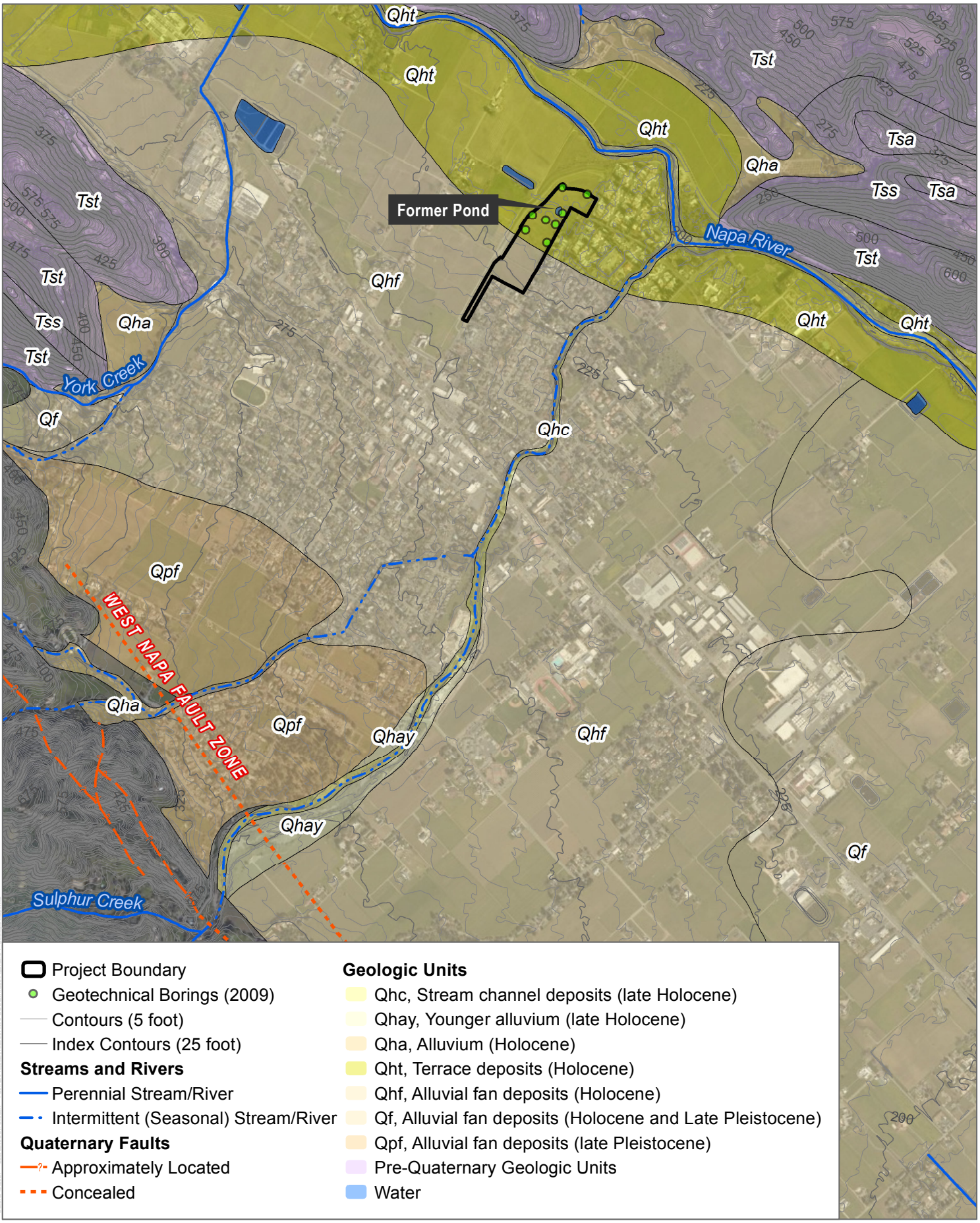
[3] This term refers to the degree to which streams have incised into the surface.
[4] Teriary is a geologic period between 2.5 million and 65 million years ago.

Table 3.6-1
Soil Map Units Within the Project Site

Soil Unit	Acres / Percent of Project Area	Depth (inches)	Shrink/Swell Potential1	Corrosion Risk2		Erosion and Runoff	
				Uncoated Steel	*Concrete*	*Hydrologic Soil Group3*	*Erosion Factor (Kf)4*
Bale clay loam, 0% - 2% slope	3.6 / 22%	60	Low (0% – 2.9%) to Moderate (3% – 5.9%)	High	Low	B	0.2
Bale clay loam, 2% - 5% slope	8.5 / 53%	60	Low (0% – 2.9%) to Moderate (3% – 5.9%)	High	Low	B	0.2
Cole silt loam, 0% - 2% slope	3.5 / 22%	64	Low (2.3% – 4.1%) to High (5.7% – 8.3%)	High	Low	C	0.37
Cortina very gravelly loam, 0% - 5% slope	0.6 / 3%	60	Low (0% – 2%)	Low	Low	A	0.43

Source: USDA 2019.
Notes:
1 "Shink/Swell potential" of soils pertains to the volume change experience by soils, particularly clays, under cycles of wet and dry conditions. This is measured by the linear extensibility of soils, or the volume change between the water content of the clod at 1/3- or 1/10-bar tension (33kPa or 10kPa tension) and oven dryness. The shrink/swell potential is low if the soil has a linear extensibility of less than 3%; moderate if 3% to 6%; high if 6% to 9%; and very high if more than 9%. The ratings reported in this table refer to the range of soil horizons present within the soil map unit.
2 "Risk of corrosion" pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete.
3 Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups (A through D) according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms. Soils in Group B have a moderate infiltration rate and a moderate rate of water transmission. Soils in Group C have a slow infiltration and transmission rates and consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. Soils in Group D have high runoff potential when thoroughly wet. Water movement through the soil is restricted or very restricted.
4 Erosion factor Kf indicates the susceptibility of a soil to sheet and rill erosion by water. Values of Kf are provided for the surface soil horizon. Values range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Geotechnical exploration of the Project site was completed by Miller Pacific Engineering Group, which provides site-specific details about shallow subsurface conditions (see Appendix F for the reports). The geotechnical exploration consisted of ten shallow exploratory borings drilled in 2009 using a 4-inch manual bucket auger and associated laboratory testing of selected soil samples (Appendix F). The location of the exploratory borings are shown in Figure 3.6-1. In late 2010, to update site conditions following completion of the City's Flood Protection Project, Miller Pacific Engineering Group conducted and reviewed field density testing to determine the relative compaction of recently placed fill. More recently, Miller Pacific Engineering Group provided a review of the liquefaction potential on the Project site (Appendix F).



SOURCE: Bing Maps 2019, USGS 2019 (National Hydrography Dataset), USGS 2007

DUDEK

0 800 1,600 Feet

FIGURE 3.6-1

Geologic Map

Hunter Subdivision Project

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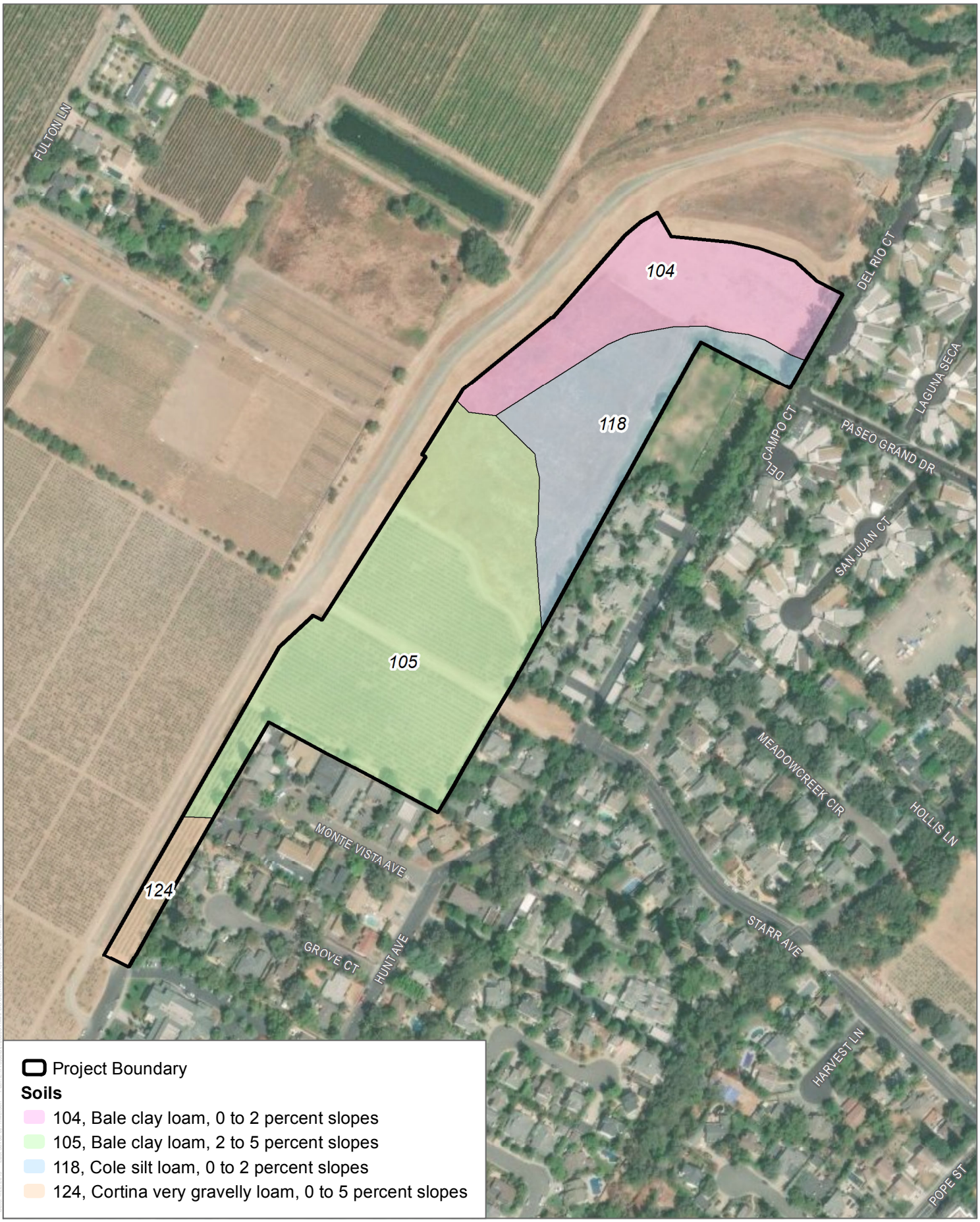

SOURCE: Bing Maps 2019, USDA 2019

DUDEK

0 250 500 Feet

FIGURE 3.6-2

Soils

Hunter Subdivision Project

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Based on geotechnical exploration, the subsurface consists of clayey silts with varying character (e.g., stiffness, color, moisture, grain size distribution). There is a 1–4-foot thick mantle of recent, compacted fill that was placed over much of the site, with deeper fill extending up to 10 feet bgs where the former pond was filled (the former pond location is shown on Figure 3.6-1). This occurred in 2010 when the City's Flood Protection Project was completed. Below the compacted fill is a 0.5–1.5-foot layer of stiff, relatively dry light brown clayey silt with some sand underlain by soft to medium stiff dark brown clayey silt to a depth of 4–7 feet. Based on laboratory testing of soil samples, there is an approximately three-foot thick layer of soft, weak natural soil that remains beneath the recently placed and compacted fill layer that does not meet American Society of Testing and Materials (ASTM) standards for optimum soil moisture and compaction (Appendix F).

Paleontological Resources

The City recently approved a new General Plan in June 2019 and certified the 2019 General Plan Environmental Impact Report. That Environmental Impact Report provides a description of the paleontological resources for each geologic unit mapped within the City's planning area (City of St. Helena 2018). The City's 1993 General Plan did not include any discussion pertaining to paleontological resources. Although there have been no recorded fossil finds within the City's boundaries (including a search of the University of California Museum of Paleontology specimen database), Pleistocene[5] age Quaternary deposits are described as potentially fossil bearing, possibly containing significant Rancholabrean fossils (126,000 to 10,000 years B.P.). Fossils found in alluvium of this age include, but are not limited to, bison, mammoth, ground sloths, sabertoothed cats, dire wolves, horses, cave bears, rodents, birds, reptiles, and amphibians. Older Pleistocene deposits typically occur as terraces incised by Holocene fluvial drainages. Due to their young age, Holocene alluvium is not considered potentially fossil bearing, since insufficient time has passed to result in fossilization of buried flora and fauna.

Although the Proposed Project is mapped at the surface as consisting of Holocene alluvium, which has a low paleontological potential, it may be underlain at unknown depths by Pleistocene alluvial fan deposits. Subsurface logs completed for geotechnical work or well drilling purposes do not typically differentiate between Holocene and Pleistocene age sediments, as they are mainly concerned with soil texture, and because both units are similar in that they consist of various layers of unconsolidated sediment (i.e., sand, gravel, silt and clay). However, Holocene alluvium extends down to at least 4 feet, as evidenced by the discovery of archeological resources down to that depth (see Section 3.5, Cultural Resources for additional information on the excavations conducted for the presence of subsurface archeological resources).

[5] The Pleisticene is a geologic epoch lasting from 11,700 years ago (+/- 100 years) to 2.5 million years ago.

Furthermore, based on the distance to the closest surface expressions of Pleistocene alluvium, which occur over a mile to the southwest (USGS 2007) and the proximity of the Napa River, the Holocene alluvium mapped within the Project site is likely of considerable thickness. However, because the subsurface boundary between Holocene and Pleistocene units has not been confirmed/verified, it is assumed for the purpose of the analysis that deeper excavations (beyond 4 feet in depth) could encounter older Pleistocene age alluvium.

Geologic Hazards and/or Soil Constraints

The following describes the potential geologic hazards and/or soil constraints potentially applicable to the site, based on the mapped soils and subsurface geotechnical investigation.

Slope Failures and/or Mudflows

The Napa Valley floor, including the majority of the City is mapped by the U.S. Geological Survey as being stable in terms of slope stability; for example, areas of less than 5% slope that are not underlain by landslide deposits (City of St. Helena 2018). The Project site is on flat to gentle slopes and therefore is not at risk of experiencing landslides. The eastern flank of the Mayacamas Mountains to the west may be the source of landslide or mudflows; however, as it is more than a mile away, the site is not subject to landslide or mudslide runout. The hills on the east side of the valley are closer (0.3–0.5 miles to the northeast), but the Project site is protected by a levee and thus would not be subject to mudslide runout from the east either.

Expansive and/or Corrosive Soils

Expansion and contraction of soil volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to building and infrastructure may occur if the potentially expansive soils were not considered in building design and during construction. Corrosivity is a function of the chemical composition of the soils, and the materials from which it is derived. If not addressed by design measures and proper selection of building materials, corrosive soils could cause substantial damage to building foundations, pavements, utilities, and/or other improvements.

The northern part of the Project site is underlain by the Bale clay loam, which has low to medium shrink/swell potential, as shown in Table 3.6-1. The southern part of the site is underlain by the Cole silt loam which has a low to high shrink/swell potential (generally increasing with depth). The Cortina very gravelly loam underlies the southernmost portion of the site and has a low shrink/swell potential. The Bale and Cole soils generally have a high corrosion potential to steel, and low corrosion potential for concrete. The Cortina very gravelly loam has a low corrosion potential for both steel and concrete (Table 3.6-1).

Soil Settlement and/or Collapse

Soil settlement or differential settlement could occur if buildings or other improvements were built on low-strength foundation materials (including imported fill) or if improvements straddle the boundary between different types of subsurface materials (e.g., a boundary between native material and fill). Although differential settlement generally occurs slowly enough that its effects are not dangerous to site inhabitants, it can cause significant building damage over time. Settlement or collapse has the potential to occur if buildings or other improvements were built on materials which are not suited for foundations of structures. As discussed above, the subsurface investigation of the site found that there is an approximately 3-foot-thick layer of clayey silts under recently placed and compacted fill that may be prone to soil settlement or differential settlement. Based on the findings of the geotechnical investigation, the settlement risk at the Project site presents a potentially significant hazard (Appendix F).

Collapsible soils consist of loose, dry, low-density materials that collapse and compact under the addition of water or excessive loading. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits. Since collapsible soils occur in arid desert environments, it is not a concern for the Project site or more generally in Napa County.

Land Subsidence

Subsidence is the lowering of the land-surface elevation. The mechanism for subsidence is generally related to groundwater pumping and subsequent consolidation of loose aquifer sediments. The primary hazards associated with subsidence are increased flooding hazards and damage to underground utilities. Other effects of subsidence include changes in the gradients of stormwater and sanitary sewer drainage systems in which the flow is gravity-driven. As further discussed in Section 3.9, Hydrology and Water Quality, regional groundwater levels are reportedly stable. Furthermore, an extensive analysis of the groundwater basin associated with compliance with the 2014 Sustainable Groundwater Management Act found that land subsidence is not an issue in Napa County (LSCE 2016).

Seismic Hazards

Seismic hazards include surface rupture, ground shaking, liquefaction, lateral spreading, and landslides. These potential hazards are further described below.

Regional Seismicity

The Project site is located in the seismically active northern San Francisco Bay area. The main cause of seismic activity in the area results from the tectonic right-lateral strike-slip boundary of the North American plate and the Pacific plate. This boundary and area is named the San Andreas Fault Zone, which includes the San Andreas Fault, and numerous other active faults.

Numerous moderate and occasional large magnitude earthquakes have historically affected the Northern San Francisco Bay region. Notable earthquakes that have caused major damage to Napa County include the magnitude 7.9 California Earthquake of 1906 on the San Andreas fault and the 1969 Santa Rosa earthquakes on the Rodgers Creek fault. The 1906 and 1969 earthquakes were of moderate magnitude with earthquake epicenters located near downtown Santa Rosa. On August 24, 2014, the South Napa Earthquake, which consisted of a magnitude 6.0 earthquake along the West Napa Fault, caused strong to very strong ground shaking in the southern Napa region with significant damage, though it is estimated to have caused moderate perceived ground shaking in the City, with only light (non-structural) damage (USGS 2014). Prior to the South Napa Earthquake, the portion of the fault that ruptured in that quake was not widely known to be Holocene-active, nor was it zoned under the Alquist–Priolo Earthquake Fault Zoning Act. In addition to the San Andreas, Rodgers Creek, and West Napa faults, several other faults in the region, including the Green Valley and Rodgers Creek faults, are considered capable of generating moderate to large earthquakes.

Surface Rupture

Surface rupture occurs when the ground surface is broken and separates due to fault movement during an earthquake. Geologists commonly use the age of offset rocks as evidence of fault activity—the younger the displaced rocks, the more recently earthquakes have occurred. To evaluate the likelihood that a fault will produce an earthquake, geologists examine the magnitude and frequency of recorded earthquakes and evidence of past displacement along a fault. Under the Alquist-Priolo Earthquake Fault Zoning Act (AP Act), an *active* fault is defined by the State of California as a fault that has had surface displacement within Holocene time (last 11,000 years). Earthquake fault zones are designated by the California Geological Survey where concrete evidence (e.g., geologic offsets, geomorphic features, trench studies) demonstrates surface fault rupture has occurred within the past 11,000 years. A *potentially active* fault is a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years). Because the age of many potentially active faults are poorly constrained, and due to the sheer number of such faults in the state, the location and trace of both active and potentially active faults should be identified to examine potential for surface rupture.

The Project site is not crossed by an active earthquake fault zone designated under the AP Act, nor is it crossed by any potentially active fault mapped by the USGS or California Geological Survey (USGS and CGS 2019, DOC 2019). The closest earthquake fault zone designated under the AP Act is the Rodgers Creek Fault, located about 15 miles to the southwest of the Project site. In addition, the southern part of the West Napa Fault, located approximately 17 miles southeast of the Project site, was recently designated as an active fault zone, following the 2014 South Napa Earthquake. The northern segment of the West Napa Fault with evidence of displacement in Quaternary time, shown on Figure 3.6-1, is located approximately 1.2 miles

southwest of the Project site. However, there is no evidence of Holocene or late-Holocene movement on the northern branch of the West Napa Fault (City of St. Helena 2017). A Quaternary segment of the Green Valley Fault is located approximately 4 miles east of the Project site and the closest active portion of this fault is located approximately 17 miles southeast (USGS and CGS 2019).

Because the Project site is not crossed by an active or potentially active fault, it would not be affected by fault-related ground offset (i.e., primary fault rupture).

Ground Shaking

When an earthquake occurs along a fault, a characteristic way to measure its size is to measure the energy released during the event. When an earthquake occurs, a network of seismographs records the amplitude and frequency of the seismic waves it generates. The Richter Magnitude (M) for an earthquake represents the highest amplitude measured by the seismograph at a distance of 100 kilometers from the epicenter. Richter magnitudes vary logarithmically with each whole number step representing a 10-fold increase in the amplitude of the recorded seismic waves. While Richter Magnitude was historically the primary measure of earthquake magnitude, seismologists now use Moment Magnitude as the preferred way to measure earthquakes. The Moment Magnitude scale (Mw) is related to the physical characteristics of a fault, including the rigidity of the rock, the size of fault rupture, and the style of movement or displacement across the fault. Although the formulae of the scales are different, they both contain a similar continuum of magnitude values, except that Mw can reliably measure larger earthquakes and can do so from greater distances.

The third California earthquake rupture forecast by the "Working Group on California Earthquake Probabilities" cites a 72% chance that the greater San Francisco Bay Area will experience one or more earthquakes of M6.7 or larger at some point in the next 30 years (USGS 2015). Based on the number of active and potentially active faults in the North Bay, the Project site will likely be subject to an earthquake on near or distant faults producing moderate to strong perceived seismic ground shaking at least once over the course of a 30 year mortgage.

A primary tool that seismologists use to describe ground-shaking hazard is a probabilistic seismic hazard assessment (PSHA). The PSHA for the State of California takes into consideration the range of possible earthquake sources and estimates their characteristic magnitudes to generate a probability map for ground-shaking. The PSHA maps depict values of peak ground acceleration (PGA)[6] that have a 10% probability of being exceeded in 50 years (1

[6] The peak ground acceleration (PGA) for a given component of motion is the largest value of horizontal acceleration obtained from a seismograph. PGA is expressed as the percentage of the acceleration due to gravity (g), which is approximately 980 centimeters per second squared. In terms of automobile accelerations, one "g" of acceleration is equivalent to the motion of a car traveling 328 feet from rest in 4.5 seconds.

in 475 chance). This probability level allows engineers to design buildings for ground motions that have a 90% chance of NOT occurring in the next 50 years, making buildings safer than if they were simply designed for the most likely events. Based on the PSHA, the Project site is expected to have a 10% probability of exceeding a PGA of 0.416g (very strong perceived shaking), and a 2% probability of exceeding a PGA of 0.633g (severe perceived shaking) in the next 50 years (DOC 2019; USGS 2014). A 2% probability of exceedance in 50 years is about the same as a 2,500-year average repeat time and is a design standard used for essential services buildings or highly vulnerable occupancies. For comparison purposes, the maximum PGA value recorded during the Loma Prieta earthquake was in the vicinity of the epicenter, near Santa Cruz, at 0.64g. During low-probability events, the PGAs expected at the site range from very strong to severe, resulting in moderate to heavy damage to structures and buildings.

Liquefaction and Lateral Spreading

Liquefaction is a temporary state of loose, saturated granular sediments from a solid state to a "liquefied" state as a result of ground shaking. In the process, the soil and sediment loses stability and cohesion, which causes ground displacement and structural failure of the ground. Localities most susceptible to liquefaction-induced damage are underlain by loose, water-saturated, granular sediment within 40 feet of the ground surface (DOC 2008). The California Geological Survey determines zones of required investigation for liquefaction based on liquefaction susceptibility (which consist of a combination of the character of sediment and highest recorded groundwater level) and liquefaction opportunity (which is based on the PSHA) (DOC 2008). Although the California Geological Survey has not mapped the Napa Valley for the purpose of designating zones of required investigation under the Seismic Hazards Mapping Act (see Section 3.6.3 for a description), the Project site may be subject to liquefaction based on the combination of soil and groundwater conditions potentially present on-site.

The Project site is mapped as having a moderate liquefaction susceptibility, based on the Quaternary geologic units described above (USGS 2006). Off-site, the active river channel deposits along the Napa River are mapped as having a very high liquefaction susceptibility (USGS 2006). The Project site's proximity to the Napa River means that groundwater levels on-site are likely to be relatively shallow. As discussed in Section 3.9, Hydrology and Water Quality, groundwater levels measured at the Stonebridge Well operated by the City have fluctuated between 18 and 25 feet between 2015 and 2018. Given the proximity and similar setting, groundwater levels are expected to be similar or possibly shallower beneath the Project site. According to the well completion report for the on-site well, the static water level was recorded as being 11 feet bgs in 1992 (DWR 1992). Given these factors, there is a potentially significant risk for liquefaction at the Project site.

Lateral spreading, which is the horizontal displacement of soil toward an open channel or free face, such as an excavation boundary, is not considered to be a significant concern on-site because the site is flat and the only slope immediately adjacent to the Project site is the levee along the Napa River. Based on the Proposed Project's grading plan, the portion of the levee adjacent to the Project site is roughly 8–10 feet high with slopes 4:1 (horizontal:vertical). Since the levee was constructed in 2010 in accordance with U.S. Army Corps of Engineers and Department of Water Resources standards, it is designed to avoid saturation under normal conditions, and meet earthwork standards necessary to avoid seismic damage. Under very specific conditions, the banks of the Napa River may experience lateral spread in a strong earthquake; however, such an occurrence would not affect the Project site, since earth displacements from lateral spread would be into the river channel, not the Project site.

Seismically Induced Landslides

Because the Proposed Project is on flat to nearly flat land, there is no appreciable risk of seismically induced landslide. In the event an earthquake results in off-site slope instabilities, such as along the levee or on the southern bank of the Napa River (e.g., through lateral spread or shallow soil slumps), the impact would be highly localized to the base of the slope, and would not place the Project site or its residents at risk.

3.6.3 Regulatory Setting

Federal Regulations

The following federal regulations pertaining to geology and soils would apply to the Proposed Project.

Occupational Safety and Health Administration Regulations

Excavation and trenching are among the most hazardous construction activities. The Occupational Safety and Health Administration's Excavation and Trenching standard, Title 29 of the Code of Federal Regulations, Part 1926.650, covers requirements for excavation and trenching operations. The Occupational Safety and Health Administration requires that all excavations in which employees could potentially be exposed to cave-ins be protected by sloping or benching the sides of the excavation, supporting the sides of the excavation, or placing a shield between the side of the excavation and the work area.

State Regulations

The statewide minimum public safety standard for mitigation of earthquake hazards (as established through the California Building Code [CBC], AP Act, and the Seismic Hazards Mapping Act) is that the minimum level of mitigation for a project should reduce the risk of

ground failure during an earthquake to a level that does not cause the collapse of buildings for human occupancy, but in most cases, is not required to prevent or avoid the ground failure itself. It is not feasible to design all structures to completely avoid damage in worst-case earthquake scenarios. Accordingly, regulatory agencies have generally defined an "acceptable level" of risk as that which provides reasonable protection of the public safety, although it does not necessarily ensure continued structural integrity and functionality of a project (14 CCR 3721(a)). Nothing in these acts, however, precludes lead agencies from enacting more stringent requirements, requiring a higher level of performance, or applying these requirements to developments other than those that meet the acts' definitions of "project."

Alquist–Priolo Earthquake Fault Zoning Act

The AP Act was passed in 1972 to mitigate the hazard of surface faulting to structures for human occupancy. In accordance with this act, the state geologist established regulatory zones, called "earthquake fault zones," around the surface traces of active faults and has published maps showing these zones. 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. Construction within these zones cannot be permitted until a geologic investigation has been conducted to prove that a building planned for human occupancy will not be constructed across an active fault. These types of site evaluations address the precise location and recency of rupture along traces of the faults and are typically based on observations made in trenches excavated across fault traces.

The Proposed Project is not within an Alquist–Priolo Earthquake Fault Zone and therefore is not subject to the requirements of the AP Act.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (Public Resources Code, Chapter 7.8, Section 2690–2699.6) directs the California Department of Conservation to protect the public from earthquake-induced liquefaction and landslide hazards (note that these hazards are distinct from fault surface rupture hazard regulated by the AP Act of 1972). This act requires the state geologist to delineate various seismic hazard zones, and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones (i.e., zones of required investigation). Before a development permit may be granted for a site within a Seismic Hazard Zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. Evaluation and mitigation of potential risks from seismic hazards within zones of required investigation must be conducted in accordance with the California Geological Survey, Special Publication 117A, adopted March 13, 1997, by the State Mining and Geology Board as updated in 2008 (DOC 2008).

To date, Seismic Hazard Zone Maps have been prepared for portions of Southern California and the San Francisco Bay Area; however, no seismic hazard zones have yet been delineated for the City including the Proposed Project area (i.e., the Saint Helena USGS 7.5' Quadrangle). As a result, the provisions of the Seismic Hazards Mapping Act would not apply to the Proposed Project.

California Building Code

The CBC has been codified in the California Code of Regulations (CCR) as Title 24, Part 2. Title 24 is administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 to be enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within its jurisdiction.

The 2019 edition of the CBC is based on the 2015 International Building Code published by the International Code Conference. The 2019 CBC contains California amendments based on the American Society of Civil Engineers Minimum Design Standards 7-16, which provides requirements for general structural design and includes means for determining earthquake loads as well as other loads (such as wind loads) for inclusion into building codes. The provisions of the CBC apply to the construction, alteration, movement, replacement, and demolition of every building or structure or any appurtenances connected or attached to such buildings or structures throughout California.

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

Paleontological Resources

Paleontological resources are limited, nonrenewable resources of scientific, cultural, and educational value and are afforded protection under state laws and regulations, namely California Public Resources Code Section 21000 et seq. and Public Resources Code Section 5097.5. Paleontological resources are explicitly afforded protection by the California Environmental Quality Act (CEQA), specifically in Section VII(f) of CEQA Guidelines Appendix G, the Environmental Checklist Form, which addresses the potential for adverse impacts to “unique paleontological resource[s] or site[s] or . . . unique geological feature[s]” (14 CCR 15000

et seq.). This provision covers fossils of signal importance—remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group—as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. Further, CEQA provides that, generally, a resource shall be considered "historically significant" if it has yielded or may be likely to yield information important in prehistory (14 CCR 15064.5 [a][3][D]). Paleontological resources would fall within this category. The California Public Resources Code, Chapter 1.7, Sections 5097.5 and 30244, also regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

Local Regulations

Local regulations relevant to geology, soils, and seismicity are discussed below.

City of St. Helena 1993 General Plan

The following goals, objectives, and policies from the City of St. Helena 1993 General Plan, Public Health and Safety element are relevant to geology, soils, and seismicity issues in the Project site.

> **Policy 8.4.1:** Restrict the intensity of development and the level of land form alteration in the hillside areas in order to minimize the potential for slope failure.
>
> **Implementing Policy 8.4.2**: Require a soils and geologic report to be submitted for new construction prior to the issuance of grading and building permits and the submission of final maps.
>
> **Implementing Policy 8.4.3**: Prohibit any development—including any land alteration, grading for roads and structural development—in areas of slope instability or other geologic concerns until mitigating measures are taken to limit potential damage to levels of acceptable risk.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The following policies from the City of St. Helena 2019 General Plan, Public Health and Safety element are relevant to geology, soils, and seismicity issues in the Project site.

> **Policy PS3.1:** Minimize risk of injury, loss of life and property damage from seismically induced and other known geologic hazards.
>
> **Policy PS3.2**: Restrict the intensity of development and the level of landform alteration in the hillside areas in order to minimize the potential for slope failure

Policy PS3.3: The required soils and geologic reports for new development shall include geotechnical analysis for construction in areas with potential geological hazards and/or for purposes of environmental analysis. The analysis shall investigate all potential geo-hazard issues for the site where there is substantial evidence of a potential risk.

Policy PS3.4: Geologic reports for new development shall describe hazards and include mitigation measures to reduce risks to acceptable levels. Where appropriate, an engineer's or geologist's certification shall be required stating that risks have been mitigated to an acceptable level.

3.6.4 Impacts

Methods of Analysis

Impacts with respect to geology, soils and seismicity are assessed by comparing conditions expected under implementation of the Proposed Project to the existing environmental setting described in Section 3.6.2. The California Supreme Court has recently confirmed that "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents." However, an agency must "evaluate existing conditions in order to assess whether a project could exacerbate hazards that are already present." The analysis evaluates if the Proposed Project would directly or indirectly place people, structures, or the general public at increased exposure to health and/or safety risks associated with soil, geologic or seismic hazards.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Directly or indirectly cause 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. Refer to Division of Mines and Geology Special Publication 42;
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction;
    - Landslides.
- Result in substantial soil erosion or the loss of topsoil.

- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property.
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this document.

Fault Rupture

As discussed in Section 3.6.2, Environmental Setting, the Proposed Project is not located within a fault rupture hazard zone. This includes both earthquake fault zones designated under the AP Act, as well as potentially active faults of Quaternary age. Because the Project site is not crossed by any known active or potentially active fault, there would be no impact and this issue (first significance threshold listed above) is not further addressed.

Landslides

As discussed in Section 3.6.2, Environmental Setting, the Proposed Project is not at risk of landslides because it is nearly flat, and because there are no substantial slopes or hillside areas in the immediate vicinity. Therefore, there would be no impact and this issue (first significance threshold listed above) is not further addressed.

Soil Erosion and Loss of Topsoil

Potential impacts of erosion on water quality are discussed in Section 3.9, Hydrology and Water Quality and impacts with regard to agricultural resources (e.g., prime soils) are addressed in Section 3.2, Agriculture and Forestry Resources. In the context of this section, a substantial impact would occur if accelerated and significant soil erosion were to be sufficient in magnitude to undermine structures or compromise slope stability. Examples of this style of erosion are rills (small narrow channel) and gullies, whereby storm runoff produces deep incisions into the soils and slopes. Because the Project site is on flat land, and would be developed into a residential

subdivision, there is no reasonable potential for any rills and/or gullies to develop. Runoff would be managed and discharged into an existing detention basin, as described in more detail in Section 3.9. Therefore, this issue (second significance threshold listed above) is not applicable to the Proposed Project and is not further addressed.

Alternative Wastewater Systems

The Proposed Project would connect to the City's sewer system to provide conveyance of wastewater to the treatment plant. Therefore, this issue (fifth significance threshold listed above) is not applicable to the Proposed Project and is not further addressed.

Unique Geologic Features

The Project site is undeveloped and has been disturbed due to the placement of fill associated with the City's Flood Control Project. The Project site does not contain any unique geologic features, such as a landform or rock outcrop of scientific, cultural or aesthetic interest. Therefore, implementation of the Proposed Project would not directly or indirectly destroy a unique geologic feature. Therefore, there would be no impact and this issue (last significance threshold listed above) is not further addressed.

Impacts and Mitigation Measures

3.6-1: Would the Proposed Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and/or liquefaction? This impact would be potentially significant.

Seismic ground shaking is an unavoidable hazard for nearly all man-made facilities (buildings and structures) in the region. The geologic setting means proposed facilities are likely to experience ground shaking from at least one major earthquake (e.g., greater than moment magnitude 6.7) sometime during the operational life of a project. Based on the most recent PSHA for the State of California, the Project site would have an approximately 10% chance of exceeding a PGA of 0.416g, and a 2% probability of exceeding a PGA of 0.633g in the next 50 years (DOC 2019). These levels of ground shaking, while relatively improbable, are very strong to severe, and capable of producing extensive non-structural damage and limited structural damage in buildings at the site. The amount of ground shaking that actually occurs depends on the magnitude of the earthquake, the distance from the epicenter, and the type of earth materials between the receptor and the epicenter. The Project site is also underlain by soils that if not properly engineered during construction site preparation, could be subject to secondary effects such as seismically induced liquefaction, differential settlement or compression.

If future development of the site is not constructed in a manner that protects residents from geologic and seismic hazards, the Proposed Project could have a significant impact. However,

the 1993 General Plan policies implemented by the City require that any geologic or seismic risks be mitigated to an acceptable level as a condition of project approval (Implementing Policy 8.4.3). These General Plan policies (listed in Section 3.6.3) are enforced as part of the tentative subdivision map submittal process, as described under Municipal Code Section 16.32.220 (Soils Investigation and Geotechnical Report Requirements). Furthermore, Municipal Code Chapter 15 (Building and Construction) incorporates the CBC and thus enforces the structural design requirements associated with seismic loads. As part of this process, a design-level geotechnical investigation would be completed (in addition to the existing geotechnical investigation already completed) to assess site conditions at a greater level of detail and make geotechnical recommendations to be incorporated into the site development plan, grading plan and building plan. The City requires that such geotechnical recommendations be verified at time of grading and building construction prior to issuance of a certificate of occupancy.

The initial geotechnical work completed for the Proposed Project by Miller Pacific Engineering Group (Appendix F) identifies a potential issue associated with soft soils occurring under a layer of compacted fills. Specifically, it notes the following (Appendix F):

> It is not acceptable to place compacted, engineered fill (designed to support future development) on the Hunter Parcel without first over excavating and recompacting the existing weak surface layer, due to the anticipated settlement of the weak soil layer as a result of the loads imposed by the new fill, as well as future building loads. Settlement of the weak soil layer, if left in place beneath the recently placed compacted fill, could lead to damage to new residential structures, streets, utilities, and concrete flatwork supported over the weak soil layer.

It is this observation that leads to the recommendation to over excavate to an average depth of 4.5 feet (and up to 10 feet in the location of the former pond). Furthermore, the Project site has the potential to be subject to seismically induced liquefaction and/or differential settlement, as discussed in the environmental setting. Because the geotechnical borings completed on-site in 2009 lacks coverage in the southern portion of the site (see Figure 3.6-1), and it occurred prior to fill placement from the Flood Protection Project, the data may no longer adequately represent shallow soil conditions. Because of this, and due to the potential for liquefaction and/or settlement of weak soils, the Proposed Project could potentially expose residences to significant impacts from a major earthquake. This is considered a **potentially significant impact.**

Mitigation Measures

Implementation of Mitigation Measure GEO-1 would ensure design-level geotechnical reports have the appropriate scope and include recommendations necessary to mitigate potential seismic hazards to a less-than-significant level. Implementation of Mitigation Measure GEO-1

expands upon the typical steps completed as part of standard building and grading permit approvals in order to ensure the identified impacts (i.e., weak/compressible soils and liquefaction risk) are mitigated. In particular, the requirement to comply with the California Department of Conservation Special Publication 117A (Guidelines for Evaluating and Mitigating Seismic Hazards in California) ensures that the site is treated in the same way as if it were designated as a zone of required investigation for liquefaction under the Seismic Hazards Mapping Act.

GEO-1: Prior to the issuance of any site-specific grading or building permits, the Project applicant shall have a design-level geotechnical report prepared and submitted to the City of St. Helena Building Department for review and approval in accordance with adopted City standards. The structural designs shall adhere to the currently adopted version of the California Building Code. The report shall identify specific site preparation methods, grading practices, foundation designs, and other recommendations appropriate for minimizing damage from weak soils, expansive soils, differential settlement, and seismic hazards, including liquefaction. Specifically, the following requirements for the geotechnical and soils report shall be met:

- Analysis presented in the geotechnical report shall conduct a detailed evaluation of liquefaction in accordance with California Department of Conservation Special Publication 117A: *Guidelines for Evaluating and Mitigating Seismic Hazards in California*.
- Additional subsurface soil borings shall be completed as necessary to represent the full range of site conditions, including the southern portion of the parcel mapped as alluvial fan.
- Analysis presented in the geotechnical report shall include recommendations for building foundations and improvements, including sidewalks, parking lots, and subsurface utilities, that take into consideration the potential effects of settlement, collapse, and expansive or corrosive soils. This includes the recommendation to over excavate to an average depth of 4.5 feet (and up to 10 feet in the location of the former pond) due to anticipated settlement.
- All design criteria and specifications set forth in the design-level geotechnical report shall be implemented as a condition of project approval. This report shall be completed as a condition of approval of the final tentative map.

3.6-2: Would implementation of the Proposed Project occur on weak, compressible, and/or expansive soils that could result in adverse impacts on habitable structures? This impact is potentially significant.

Construction on un-compacted and loose fill, if present, would be subject to varying rates of settlement. If the settlement is not uniform, or if collapse occurs, structural damage may result. Underground utilities may also experience differential settlement along their alignments. The preliminary geotechnical report prepared for the Proposed Project indicated that engineered fill was placed on top of a 3-foot layer of soft, weak natural soil with high moisture content across the Project site, and above uncompacted fill in a former pond area. These unconsolidated fills and soils with high moisture content were deemed unsuitable for supporting future development. Over-excavation, moisture-conditioning, and recompaction of the recent fill and the underlying weak soils was recommended to avoid future settlement after development. It is anticipated that placement of engineered fill for use as structural building pads, roads, and within utility trenches (including) over excavation and recompaction would remove and/or otherwise address the preexisting potential for expansive or corrosive soils. Therefore, compliance with standard conditions of approval, which include standard site preparation practices and compliance with ASTM standards during grading would reduce the potential impacts of expansive or corrosive soils to a less-than-significant level. However, because the Project site includes weak compressible soils which could result in structural damage, this is a **potentially significant impact**.

Mitigation Measures

Implementation of Mitigation Measure GEO-1 would ensure a design-level geotechnical report be prepared that would address any weak/compressible soils. The Proposed Project is required to comply with the California Department of Conservation Special Publication 117A (Guidelines for Evaluating and Mitigating Seismic Hazards in California) which ensures that unstable soils would be addressed and the impact would be less than significant. Compliance with Mitigation Measure GEO-1 mitigates this impact and no additional mitigation is necessary.

3.6-3: Would implementation of the Proposed Project directly or indirectly destroy a unique paleontological resource or site? This impact would be potentially significant.

Future development of the Proposed Project could result in direct or indirect impacts on paleontological resources. As described in the setting, there are no records of fossil finds within the City, and the Holocene alluvium mapped at the surface has a low potential for paleontological resources. However, there is a slight chance deeper excavations on-site for underground utilities, for example, could encounter Pleistocene age alluvium with the potential for fossils. Excavation for building foundations utilities and streets is expected to be on average 4.5 feet bgs, except up to 10 feet bgs in the area of the former pond, shown in Figure 3.6-1.

Although the thickness of Holocene age alluvium is likely to exceed the maximum excavation depths on the Project site, the boundary between Holocene and Pleistocene alluvium has not been confirmed. Therefore, destruction of a unique fossil is a **potentially significant impact.**

Mitigation Measures

In the event any paleontological resources are uncovered during site disturbance Mitigation Measure GEO-2 outlines the steps to follow. Compliance with this measure would ensure impacts are reduced to less than significant.

GEO-2: In the event that known or suspected paleontological resources (e.g., fossils) are unearthed during grading or trenching, the area of discovery shall be roped off by the construction contractor to include a 50-foot radius buffer and remain off-limits until cleared by a qualified paleontologist. The Project applicant shall retain a qualified paleontologist per the Society of Vertebrate Paleontology (SVP) (2010) guidelines, who shall be tasked with assessing the significance of the fossil find, including documenting the nature, location, and taxa of the find. The qualified paleontologist shall use his/her professional judgement as to the significance of the find, and whether the find should be preserved in a museum repository. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. Documentation of the fossil find, including appropriate salvage and recovery of fossil specimens and of transfer of to an appropriate repository (e.g., University of California Museum of Paleontology) shall be submitted to the City of St. Helena as evidence of compliance with this mitigation measure.

3.6.5 Cumulative Impacts

The geographic scope for the analysis of cumulative geologic and soils-related impacts consists of the Project site, as these impacts depend on the site-specific conditions and features on the Project site, such as soil composition and topography. These site-specific impacts would not combine to create cumulative impacts with other projects occurring elsewhere in the City. Therefore, the Proposed Project would not have the potential to contribute to an existing cumulative impact.

The geographic scope for the analysis of cumulative paleontological impacts consists of development slated to occur within the City or Napa County on Pleistocene age alluvium. Cumulative impacts on paleontological resources consider whether the impacts of the Proposed Project together with other related projects substantially diminish the number of paleontological resources within the same or similar context or property type.

3.6-4: Would the Proposed Project contribute to cumulative impacts related to loss of paleontological resources? This would be a less than considerable contribution.

As discussed under Impact 3.6-3, the chance of encountering paleontological resources at the site is considered low because there are no records of fossil finds within the City, and the Holocene alluvium mapped at the surface has a low potential for paleontological resources. However, there is a slight chance deeper excavations on-site for underground utilities could encounter Pleistocene age alluvium with the potential for fossils. It is possible that construction of the Proposed Project in combination with other cumulative projects in undeveloped areas in the City and County underlain by Pleistocene age alluvium could disturb multiple unknown unique paleontological resources, although unlikely to occur. Due to the size of the Project site and the low likelihood of unearthing any fossils, the Proposed Project's contribution would not be considerable resulting in a less-than-significant incremental contribution.

Mitigation Measures

None required.

3.6.6 References

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3.7 GREENHOUSE GAS EMISSIONS

3.7.1 Introduction

This section presents potential impacts regarding greenhouse gas (GHG) emissions of the proposed Hunter Subdivision Project (Proposed Project) and includes the environmental setting, regulatory framework, and impacts of the Proposed Project on the environment. The analysis and findings are based on the emissions modeling, which can be found in Appendix C.

Comments received in response to the Notice of Preparation included concerns regarding the number of trees that would be planted to accommodate for the increase in GHG emissions and a comment regarding the need for the Proposed Project to develop bicycle and pedestrian infrastructure to provide alternative transportation methods within the community. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information contained in this section is based on Proposed Project plans, the California Emissions Estimator Model (CalEEMod) (used to estimate Proposed Project emissions), the Bay Area Air Quality Management District (BAAQMD) California Environmental Quality Act Air Quality Guidelines (BAAQMD 2017), the California Air Resources Board (CARB) Climate Change Scoping Plan (CARB 2008) and The 2017 Climate Change Scoping Plan Update: The Proposed Strategy for Achieving California's 2030 Greenhouse Gas Target (CARB 2017a), and the Association of Bay Area Governments (ABAG) and Metropolitan Transportation Commission Plan Bay Area: Regional Transportation Plan and Sustainable Communities Strategy for the San Francisco Bay Area 2017–2040 (Plan Bay Area) (ABAG and MTC 2017). Other sources consulted are listed in Section 3.7.6, References.

3.7.2 Environmental Setting

Climate Change Overview

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-20th 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.

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), and nitrous oxide (N_2O) (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.[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 (1995), IPCC's Fourth Assessment Report (2007), California Air Resources Board's "Glossary of Terms Used in GHG Inventories" (CARB 2017b), 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 are synthetic, powerful GHGs that are emitted from a variety of industrial processes. Several prevalent fluorinated gases include the following:

- *Hydrofluorocarbons*: HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals that are used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.
- *Hydrochlorofluorocarbons*: HCFCs are compounds containing hydrogen, fluorine, chlorine, and carbon atoms. HFCs are synthetic chemicals that are used as alternatives to ozone depleting substances (chlorofluorocarbons).
- *Perfluorocarbons*: PFCs are a group of human-made chemicals composed of carbon and fluorine only. These chemicals were introduced as alternatives, along with HFCs, to the ozone depleting substances. The two main sources of PFCs are primarily 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 that is soluble in alcohol and ether and slightly soluble in water. SF6 is used for insulation in electric power transmission and

distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.

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 CalEEMod (Version 2016.3.2; CAPCOA 2017) 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 Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007). The GWP values identified in CalEEMod were applied to the Proposed Project.

Sources of GHG Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2017 (the most recent year for which data is available) totaled approximately 50,860 million metric tons (MMT) of CO_2e, excluding land use change and forestry (PBL 2018). Six countries—China, the United States, the Russian Federation, India, Japan, and Brazil—and the European community accounted for approximately 65% of the total global emissions, or approximately 33,290 MMT CO_2e (PBL 2018). Table 3.7-1 presents the top GHG emissions–producing countries.

Table 3.7-1
Top Six Greenhouse Gas–Producing Countries and the European Union

Emitting Countries (listed in order of emissions)	GHG Emissions (MMT CO_2e)
China	13,530
United States	6,640
European Union	4,560

Table 3.7-1
Top Six Greenhouse Gas–Producing Countries and the European Union

Emitting Countries (listed in order of emissions)	GHG Emissions (MMT CO_2e)
India	3,650
Russian Federation	2,220
Japan	1,490
Brazil	1,200
Total	33,290

Source: PBL 2018.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.

National and State Inventories

Per the U.S. Environmental Protection Agency's (EPA) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990–2018, total U.S. GHG emissions were approximately 6,676.6 MMT CO_2e in 2018. The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.3% of total GHG emissions (5,428.1 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 92.8% of CO_2 emissions in 2018 (5,031.8 MMT CO_2e). Relative to 1990, gross United States GHG emissions in 2018 are higher by 3.7%, down from a high of 15.2% above 1990 levels in 2007. GHG emissions decreased from 2017 to 2018 by 2.9% (188.4 MMT CO_2e) and overall, net emissions in 2018 were 10% below 2005 levels (EPA 2020).

According to California's 2000–2017 GHG emissions inventory (2019 edition), California emitted 424.1 MMT CO_2e in 2017, including emissions resulting from out-of-state electrical generation (CARB 2019). 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 2017 are presented in Table 3.7-2.

Table 3.7-2
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[1]
Transportation	169.86	40%
Industrial uses	89.40	21%
Electricity (in state)	38.45	9%
Electricity (imports)	23.94	6%
Agriculture	32.42	8%
Residential	26.00	6%

Table 3.7-2
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[1]
Commercial	15.14	4%
High GWP substances	19.99	5%
Recycling and waste	8.89	2%
Totals	**429.40**	**100%**

Source: CARB 2019.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2016 California GHG inventory.
1 Percentage of total has been rounded and total may not sum due to rounding.

Between 2000 and 2017, per-capita GHG emissions in California have dropped from a peak of 14.1 MT per person in 2001 to 14.1 MT per person in 2017, representing a 24% decrease. In addition, total GHG emissions in 2017 were approximately 5 MMT CO_2e less than 2016 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California is just below the 2020 target of 431 MMT CO_2e (CARB 2019).

Local Inventory

Total GHG emissions for the City of St. Helena (City) in 2018 were estimated at approximately 76,012 MT CO_2e (City of St. Helena 2018). As shown in Table 3.7-3, transportation emissions constituted 59% of the GHG emissions while electricity and natural gas use from the commercial/industrial sectors and residential sector accounts for 17% and 13%, respectively. Other sources including solid waste, off-road transportation equipment, wastewater treatment, water conveyance, public lighting, and agriculture account for the remaining 11% (St. Helena 2018).

Table 3.7-3
Greenhouse Gas Emissions Sources in St. Helena

Source Category	Annual GHG Emissions (MT CO_2e)	Percent of Total
Residential uses	9,890	13.0%
Commercial and industrial uses	12,773	16.8%
Transportation	44,531	58.6%
Solid waste	3,734	4.9%
Water transport, distribution, and treatment	138	0.2%
Wastewater	181	0.2%
Off-road equipment	4,631	6.1%
Public lighting	37	>0.1%
Agriculture	97	0.1%
Totals	**76,012**	**100%**

Source: St. Helena 2018.
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent.

Potential Effects of 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 (IPCC 2014) 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, rising sea levels, and ocean acidification (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, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a 0.2°C (0.36°F) 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 above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of approximately 0.2°C 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).

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 21st century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest that 30-year average precipitation will decline by more than 10% below the historical average (CCCC 2012).

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 below.

Agriculture. 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.

Biodiversity and Habitat. 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).

Energy. Specific climate change challenges for the energy sector include temperature, fluctuating precipitation patterns, increasing extreme weather events and sea level rise.

Forestry. 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.

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.

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 are 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.

Transportation. While the transportation industry is a source of GHG emissions it is also vulnerable to climate change risks. 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.

Water. 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 months. 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. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality.

In March 2016, the California Natural Resources Agency (CNRA) released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, the CNRA released Safeguarding California Plan: 2018 Update in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses the following: acceleration of warming across the state, more intense and frequent heat waves, greater riverine flows, accelerating sea level rise, more intense and frequent drought, more severe and frequent wildfires, more severe storms and extreme weather events, shrinking snowpack and less overall precipitation, and ocean acidification, hypoxia, and warming.

3.7.3 Regulatory Setting

Federal Regulations

Massachusetts v. EPA

In *Massachusetts v. EPA* (April 2007), the U.S. 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 December 2009, the administrator signed a final rule with the following two distinct findings regarding GHGs under Section 202(a) of the federal Clean Air Act:

- 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 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 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 Clean Air Act.

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 discussed above, 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 described above, in 2011, the EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014–2018. The standards for 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).

In August 2018, EPA and NHTSA proposed to amend certain fuel economy and GHG standards for passenger cars and light trucks and establish new standards for model years 2021 through 2026. Compared to maintaining the post-2020 standards now in place, the 2018 proposal would increase U.S. fuel consumption by about half a million barrels per day (2%–3% of total daily consumption, according to the Energy Information Administration) and would impact the global climate by 3/1000th of one degree Celsius by 2100 (EPA and NHTSA 2018). California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. Thus, the timing and consequences of the 2018 federal proposal are speculative at this time.

On September 27, 2019, EPA and NHTSA published the “Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program” (84 FR 51,310), which became effective November 26, 2019. The Part One Rule revokes California’s authority to set its own

GHG emissions standards and set zero-emission vehicle mandates in California (EPA and NHTSA 2019). The Part One Rule impacts some of the underlying assumptions in the CARB EMFAC2014 and EMFAC2017 models for criteria air pollutant emissions from gasoline light-duty vehicles, which CARB released off-model adjustment factors for on November 20, 2019, primarily for use in federal Clean Air Act conformity demonstration analyses. California expects Part Two of these regulations to be adopted later in the fall of 2019. Because CARB does not know the full impacts of these rules until Part Two is released, no off-model adjustments factors are available for GHG emissions at this time. In addition, the EMFAC off-model adjustments have not yet been incorporated into CalEEMod. This issue is evolving as California and 22 other states, as well as the District of Columbia and two cities, filed suit against the EPA over the vehicle waiver revocation on November 15, 2019 and a petition for reconsideration of the rule was filed on November 26, 2019, by California and 22 other states, the District of Columbia, and four cities.

State Regulations

The statewide GHG emissions regulatory framework is summarized below 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 EOs, Assembly Bills (ABs), Senate Bills (SBs), and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

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% below 1990 levels by 2050.

AB 32. In furtherance of the goals established in EO S-3-05, the legislature enacted AB 32. The bill is referred to as the California Global Warming Solutions Act of 2006 (September 27, 2006). AB 32 provided initial direction on creating a comprehensive multi-year program to limit California's GHG emissions at 1990 levels by 2020 and initiate the transformations required to achieve the state's long-range climate objectives.

CARB's 2007 Statewide Limit. In 2007, in accordance with California Health and Safety Code, Section 38550, CARB approved a statewide limit on the GHG emissions level for 2020 consistent with the determined 1990 baseline (427 MMT CO_2e).

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 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):

- Expanding and strengthening existing energy efficiency programs and building and appliance standards.
- Achieving a statewide renewable energy mix of 33%.
- 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.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- 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.
- 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% below 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% below 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 Intergovernmental Panel on Climate Change. 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 2017a). This update presents CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below), 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 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 2017a). 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% below 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% below 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 EO 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% below 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 short-lived climate pollutants 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 short-lived climate pollutants (40% below 2013 levels by 2030 for CH_4 and HFCs, and 50% below 2013 levels by 2030 for anthropogenic black carbon) and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, 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.

EO B-55-18. EO B-55-18 (September 2018) establishes a statewide policy for the state to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter. The goal is an addition to the existing statewide targets of reducing the state's GHG emissions. CARB will work with relevant state agencies to ensure that future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal.

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 current Title 24 standards are the 2019 Title 24 Building Energy Efficiency Standards, which became effective on January 1, 2020. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards would use approximately 53% less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards due mainly to lighting upgrades (CEC 2018).

Title 24, Part 11. In addition to the CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code (Part 11 of Title 24) is commonly referred to as California's Green Building Standards (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. 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 2019 standards, which are the current standards, became effective January 1, 2020.

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 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 California Public Utilities Commission. 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 California Public Utilities Commission, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024, 52% by December 31, 2027, and 60% by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the State that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

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 are then responsible for preparing a Sustainable Communities Strategy (SCS) within their Regional Transportation Plan. 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, a Metropolitan Planning Organization 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.

On September 23, 2010, CARB adopted the SB 375 targets for the regional Metropolitan Planning Organizations. CARB set a target of 7% per capita reduction by 2020 and a 15% per capita reduction by 2035 for the Bay Area. The ABAG and the Metropolitan Transportation Commission, which is the Metropolitan Planning Organization for the Bay Area, adopted the Plan Bay Area in July 2017 (ABAG and MTC 2017). The Plan Bay Area is a long-range plan for transportation projects within the planning area and established 13 performance targets to achieve the following goals/outcomes: Climate Protection, Adequate Housing, Healthy and Safe Communities, Open Space and Agricultural Preservation, Equitable Access, Economic Vitality, and Transportation System Effectiveness. Two of these targets are mandatory to comply with SB 375, and the Plan Bay Area exceeds the 15% reduction per capita in GHG emissions from light-trucks and cars by 2035 (Climate Protection Goal), and plans to house 100% of the region's projected growth (from a 2010 baseline year) by income level without displacing current low-income residents and with no increase in in-commuters (Adequate Housing Goal).

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.

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.

EO B-37-16. Issued May 2016, EO B-37-16 directed the State Water Resources Control Board to adjust emergency water conservation regulations through the end of January 2017 to reflect differing water supply conditions across the state. The State Water Resources Control Board also developed a proposal to achieve a mandatory reduction of potable urban water usage that builds off the mandatory 25% reduction called for in EO B-29-15. The State Water Resources Control Board and Department of Water Resources will develop new, permanent water use targets that build upon the existing state law requirements that the state achieve 20% reduction in urban water usage by 2020. EO B-37-16 also specifies that the State Water Resources Control Board permanently prohibit water-wasting practices such as hosing off sidewalks, driveways, and other hardscapes; washing automobiles with hoses not equipped with a shut-off nozzle; using non-recirculated water in a fountain or other decorative water feature; watering lawns in a manner that causes runoff, or within 48 hours after measurable precipitation; and irrigating ornamental turf on public street medians.

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 offsite 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 2009a).

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 (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 2009a), 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 updated Safeguarding California plans followed in March 2016 (CNRA 2016) and in January 2018 (CNRA 2018).

2015 State of the State Address and the 2016 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. 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% to 95% below 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). As of 2019, Governor Newsom has not enacted any such changes to the state's GHG reduction goals.

Local Regulations

City of St. Helena 1993 General Plan

The Land Use and Growth Management, Transportation, Public Health and Safety, and Public Facilities and Services Elements of the City of St. Helena 1993 General Plan (City of St. Helena 1993) provides the following guiding policies related to reducing GHG emissions:

> **Policy 2.6.21:** Require new residential projects to be designed to facilitate non-automobile modes of travel (i.e., walking, biking, transit, etc.).
>
> **Policy 5.8.1:** All new development on collector streets shall provide sidewalks or walkways to be located with the City's right-of-way for the collector street. Further,

unless exempted or deferred by the City Council, all residential developments shall provide sidewalks on all local streets within the development.

- It is a goal of the City that it continue to remain at a size where the majority of development is within a 10 minute walk of the downtown. Sidewalks or walkways will reinforce the pedestrian orientation of the City.

Policy 8.2.5: Support a population and employment growth policy which will not exceed ABAG population and employment projections. This includes balancing the ratio of employment to population to protect, preserve and enhance the air quality within the area.

Policy 9.2.3: Adopt and implement water conservation measures as a means of extending the capabilities of the City's water supply.

- Adoption of a Toilet Retrofit Ordinance to convert high-use fixtures to low-flow fixtures and a Water-Efficient Landscape Ordinance to require water-conserving xeriscapes could increase the number of available water connections. It is estimated that 1600 residential units could be converted to low-flow fixtures saving about 50 acre-feet of water per year which could service 125 units.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Land Use and Growth Management, Public Health and Safety, and Climate Change Elements of the City of St. Helena 2019 General Plan (City of St. Helena 2019) provide policies regarding GHG emissions, including the following:

Policy LU2.7: Ensure safe, walkable, and bikeable residential neighborhoods and vibrant, livable streets.

Policy PS1.3: Encourage effective regulation of those sources of air pollution, both inside and outside of St. Helena, which affect air quality, by implementing as many of the recommendations of the Napa County Congestion Management Plan as is feasible.

Policy CC1.1: Promote a "walkable" and "bikeable" city.

Policy CC2.1: Encourage measures to reduce energy demand through conservation and efficiency.

Policy CC2.2: Support local efforts to improve the energy supply by switching from fossil fuels to renewables.

Policy CC4.3: Strengthen water conservation measures that result in significant reductions in local water use and the protection of local water resources.

3.7.4 Impacts

Methods of Analysis

GHG emissions from construction and operation of the Proposed Project were calculated using CalEEMod Version 2016.3.2. Details relevant to the modeling assumptions is described below.

Construction

Construction model inputs are described in more detail in Section 3.3, Air Quality, of this Environmental Impact Report. In summary, the Proposed Project was assumed to be constructed over a 6-year buildout.

Operations

Operational GHG emissions were estimated for buildout of the Proposed Project. The first full year of operation was assumed to be 2029, which is based on the completion of all construction activities.

Area Sources

CalEEMod was used to estimate GHG emissions from the Proposed Project's area sources, including operation of landscape maintenance equipment, which produces minimal GHG emissions. See Section 3.3, Air Quality, for a discussion of landscaping equipment emissions calculations. Consumer product use and architectural coatings result in volatile organic compound emissions, which are analyzed as part of the air quality analysis.

Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). The estimation of operational energy emissions was based on CalEEMod land use defaults and units or total area (i.e., square footage) of the proposed residential land use**.** The 2019 Title 24 standards were approved and adopted by the California Building Standards Commission in December 2018. The 2019 standards became effective January 1, 2020. CalEEMod uses the 2016 version of Title 24 as a basis for energy modeling, however this analysis reflects compliance with the 2019 standards. Per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed single-family residences, are 596 gigawatt hours of electricity, 50.4 megawatts of demand, and 4.42

million therms of gas, representing reductions from the 2016 Title 24 standard of 4% of electricity, 15% of demand, and 9% of natural gas, respectively. The first-year savings for low-rise multifamily buildings are 91 gigawatt hours, 4.1 megawatts of demand, and 0.25 million therms of gas. On a percent savings basis compared to the 2016 standards, the multifamily, savings are 2% of electricity, 8% of demand and 5% of gas.

Emissions were calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs. Annual natural gas (non-hearth) and electricity emissions were estimated in CalEEMod using the default emissions factors for the proposed land uses.

Two electricity service providers would be available to provide service to the Proposed Project. The Marin Clean Energy, which is a community choice aggregation program and Pacific Gas & Electric (PG&E). While residents within the City are automatically enrolled into Marin Clean Energy, an individual can opt out and choose PG&E for electricity service. As discussed under the Regulatory Setting in Section 3.3, SB X1 2 established a target of 33% from renewable energy sources for all electricity providers in California by 2020. Marin Clean Energy provides a higher percentage of electricity from renewable sources than PG&E; however, this analysis is based on the lower RPS or conservative estimate in order to estimate the Proposed Project's GHG emissions. Therefore, the CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with the PG&E 2020 Corporate Responsibility and Sustainability Report, which reported that PG&E has delivered 30% of the electricity from RPS eligible resources and has emissions rate of 206 pounds of CO_2 per megawatt-hour (PG&E 2020).

Mobile Sources

Mobile sources for the Proposed Project would primarily be motor vehicles traveling to and from the Project site. The anticipated trip generation, including the trip rates and total trips, are based on the Proposed Project's Traffic Impact Study prepared by Dudek (see Appendix K). CalEEMod was used to calculate the emissions resulting from on-road mobile sources associated with residents traveling to and from the proposed land use types.

Default trip generation rates included in CalEEMod for each analyzed proposed land uses were adjusted to match the Proposed Project's trip generation. In addition, Saturday and Sunday trip rates were adjusted based on the CalEEMod default trip rates and the Proposed-Project-specific trip rates presented in the traffic study. The CalEEMod default and assumed trip rates are depicted in Table 3.7-4.

Table 3.7-4
CalEEMod Default and Adjusted Trip Rates

Land Use Type	Size Metric	CalEEMod Default Vehicle Trip Rates			Proposed Project Vehicle Trip Rates[1]		
		Weekday Trip Rate	Saturday Trip Rate	Sunday Trip Rate	Weekday Trip Rate	Saturday Trip Rate	Sunday Trip Rate
Single-Family Residential	Dwelling Unit	9.52	9.91	8.62	9.44	9.56	8.31
Accessory Dwelling Units	Dwelling Unit	6.59	7.16	6.07	7.36	8.18	6.94
Multi-Family Units	Dwelling Unit	5.81	5.67	4.84	9.44	9.56	8.31

Note:

1 Weekday trip rates were provided in the Proposed Project's Traffic Impact Study. Proposed Project Saturday and Sunday trips rates were adjusted based on the ratio of the CalEEMod default Saturday and Sunday trip rates to the CalEEMod default weekday trip rate.

Sources: CAPCOA 2017; Dudek 2020.

Solid Waste

The Proposed Project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste.

Water and Wastewater

Supply, conveyance, treatment, and distribution of water to serve the Proposed Project requires the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the Proposed Project requires the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. Water consumption estimates for indoor use were based on data provided within the Preliminary Water Calculations Technical Memorandum (RSA 2019). The total water demand for each land use type as provided in the memorandum were allocated based on the default proportions from CalEEMod's indoor water use. Water consumption for outdoor water use were estimated for the Proposed Project using CalEEMod default values.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- 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 emissions of greenhouse gases.

Regarding impacts from GHGs, both BAAQMD and the California Air Pollution Control Officers Association consider GHG impacts to be exclusively cumulative impacts (BAAQMD 2017; CAPCOA 2008); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. This analysis uses both a quantitative and a qualitative approach. The quantitative approach is used to address the first significance criterion: "Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?" This analysis considers that, because the quantifiable thresholds developed by BAAQMD were formulated based on AB 32 and California Climate Change Scoping Plan reduction targets for which its set of strategies were developed to reduce GHG emissions statewide, a project cannot exceed a numeric BAAQMD threshold without also conflicting with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, if a project exceeds a numeric threshold and results in a significant cumulative impact, it would also result in a significant cumulative impact with respect to plan, policy, or regulation consistency, even though the project may incorporate measures and have features that would reduce its contribution to cumulative GHG emissions.

Separate thresholds of significance have been established by the BAAQMD for operational emissions from stationary sources (such as generators, furnaces, and boilers) and nonstationary sources (such as on-road vehicles) (BAAQMD 2017). The threshold for stationary sources is 10,000 MT CO_2e per year (i.e., emissions above this level may be considered significant). For nonstationary sources, the following three separate thresholds have been established:

- Compliance with a Qualified Greenhouse Gas Reduction Strategy (i.e., if a project is found to be out of compliance with a Qualified Greenhouse Gas Reduction Strategy, its GHG emissions may be considered significant).
- 1,100 MT CO_2e per year (i.e., emissions above this level may be considered significant).
- 4.6 MT CO_2e per service population per year (i.e., emissions above this level may be considered significant). (Service population is the sum of residents plus employees expected for a development project.)

The quantitative threshold of 1,100 MT CO_2e annually adopted by BAAQMD is applied to this analysis. If a proposed project's GHG emissions would exceed this threshold then, consistent with BAAQMD Guidelines, it would be considered to have a cumulatively considerable contribution of GHG emissions and a cumulatively significant impact on climate change.

Impacts and Mitigation Measures

3.7-1: Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? This impact would be less than significant.

Construction

Construction of the proposed residences along with site clearing, grading and installation of utilities would result in GHG emissions, which are primarily associated with use of off-road construction equipment, vendor trucks, and worker vehicles. Since the BAAQMD has not established construction-phase GHG thresholds, construction GHG emissions were amortized assuming a 30-year development life after completion of construction and were compared to the BAAQMD operational GHG threshold. Amortized GHG emissions associated with Proposed Project construction would result in annualized generation of 17 MT CO_2e.

A detailed depiction of the construction schedule—including information regarding phasing, equipment used during each phase, trucks, and worker vehicles—is included in Appendix C. The estimated Proposed-Project-generated GHG emissions from construction activities assuming a 6-year buildout are shown in Table 3.7-5. The 6-year buildout assumes that building construction activities would be spread out over a 6-year period, occurring on average for approximately 7 months per year. Although, the construction duration could be spread out over a 6-year period, site preparation/grading/utility work would occur during the first phase of construction.

Table 3.7-5
Estimated Annual Construction Greenhouse Gas Emissions – 6-Year Buildout

Emission Source/Year	CO_2e (MT/yr)
2023	287.9
2024	225.1
2025	302.9
2026	255.0
2027	219.4
2028	200.1
Total	**1,490.4**
Amortized Construction Emissions	**49.7**

Notes: Total emissions may not sum due to rounding.
CO_2e = carbon dioxide-equivalent; MT/year = metric tons per year
Source: See Appendix C for detailed results.

Operations

Following the completion of construction activities, the Proposed Project would generate GHG emissions from mobile sources (vehicle trips), area sources (landscaping equipment), energy

sources (natural gas and electricity consumption), solid waste generation, water supply, and wastewater treatment. The estimated operational Proposed-Project-generated GHG these sources are shown in Table 3.7-6.

Table 3.7-6
Estimated Annual Operational Greenhouse Gas Emissions

Proposed Project Emission Source	CO_2e (MT/yr)
Area	12.0
Energy	158.3
Mobile	549.2
Solid Waste	34.9
Water Supply and Wastewater	10.6
Total	**765.0**
Amortized Construction Emissions	49.7
Operation + Amortized Construction Total	**814.7**
BAAQMD GHG Threshold	*1,100*
Significant (Yes or No)?	*No*

Note: CO_2e = carbon dioxide-equivalent; MT/year = metric tons per year
Source: See Appendix C for detailed results.

Table 3.7-6 indicates that the GHG emissions associated with development of the Proposed Project would be below BAAQMD's GHG threshold of 1,100 MT CO_2e per year. Therefore, the Proposed Project would not generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment, and this would represent a cumulatively **less-than-significant** GHG impact.

Mitigation Measures

None required.

3.7-2: Would the Proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? This impact would be less than significant.

The City is currently in the process of developing a GHG Reduction Plan and a Climate Action Plan, which would include various GHG reduction measures that would help the City reduce communitywide GHG emissions. Thus, the City does not have an adopted plan that would be applicable to the Proposed Project. However, consistency with other plans including the Plan Bay Area, Scoping Plan, and future GHG reduction goals are described below***.***

ABAG and Metropolitan Transportation Commission's Plan Bay Area

The Plan Bay Area is a regional growth management strategy that targets per capita GHG reduction from passenger vehicles and light-duty trucks for the San Francisco Bay Area (ABAG and MTC 2017). The Plan Bay Area is not directly applicable to the Proposed Project because the underlying purpose of the Plan Bay Area is to provide direction and guidance on future regional growth (i.e., the location of new residential and non-residential land uses) and transportation patterns throughout the region, as stipulated under SB 375. Within the Plan Bay Area, the core strategy includes "focused growth" in existing communities along existing transportation networks. The key to implementing the focused growth strategy are Priority Development Areas and Priority Conservative Areas. In addition, the Metropolitan Transportation Commission and the ABAG Executive Board established seven goals and 13 performance targets to measure Plan Bay Area 2040's effectiveness in addressing the major challenges facing the region. Development of the Project site would support the overarching intent of the Plan Bay Area through developing residential land uses including a component dedicated for affordable housing, which would help the region attain its adequate housing targets. Therefore, the Proposed Project would generally be considered consistent with applicable goals and strategies set forth in the Plan Bay Area.

CARB's Scoping Plan

As discussed above in Section 3.7.3, the Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) 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. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[3] 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.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 3.7-7 highlights measures that have been, or will be, developed under the Scoping Plan and the Proposed Project's consistency with Scoping Plan

[3] The Final Statement of Reasons for the amendments to the State CEQA Guidelines reiterates the statement in the Initial Statement of Reasons 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 2009b).

measures. To the extent that these regulations are applicable to the Proposed Project, its inhabitants, or uses, the Proposed Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

Table 3.7-7
Proposed Project Consistency with Scoping Plan
Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	Consistent. Proposed Project residents and visitors would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low-Carbon Fuel Standard	T-2	Consistent. Motor vehicles driven by Proposed Project residents and visitors would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	Consistent. The Project site is located near transit services (VINE Transit) which would reduce dependence on passenger vehicle trips and shorter trip lengths, which would reduce GHG emissions.
Advanced Clean Transit	Proposed	Not applicable.
Last-Mile Delivery	Proposed	Not applicable.
Reduction in VMT	Proposed	Not applicable.
Vehicle Efficiency Measures Tire Pressure Fuel Efficiency Tire Program Low-Friction Oil Solar-Reflective Automotive Paint and Window Glazing	T-4	Consistent. It is assumed motor vehicles driven by Proposed Project residents and visitors would maintain proper tire pressure when their vehicles are serviced. Replacement tires and low-friction oil would be used in compliance with CARB vehicle standards that are in effect at the time of vehicle or tire purchase.
Ship Electrification at Ports (Shore Power)	T-5	Not applicable.
Goods Movement Efficiency Measures Port Drayage Trucks Transport Refrigeration Units Cold Storage Prohibition Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification Goods Movement Systemwide Efficiency Improvements Commercial Harbor Craft Maintenance and Design Efficiency Clean Ships Vessel Speed Reduction	T-6	Not applicable.
Heavy-Duty Vehicle GHG Emission Reduction Tractor-Trailer GHG Regulation Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	Not applicable.

Table 3.7-7
Proposed Project Consistency with Scoping Plan
Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	Not applicable.
Medium and Heavy-Duty GHG Phase 2	Proposed	Not applicable.
High-Speed Rail	T-9	Not applicable.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	Consistent. The Proposed Project will comply with current Title 24, Part 6, of the California Code of Regulations energy efficiency standards.
Energy Efficiency (Natural Gas)	CR-1	Not applicable.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	Not applicable.
Combined Heat and Power	E-2	Not applicable.
Renewable Portfolios Standard (33% by 2020)	E-3	Consistent. The electricity used by the Proposed Project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewable Portfolios Standard (50% by 2050)	Proposed	Consistent. The electricity used by the Proposed Project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	Consistent. The Proposed Project would be required to implement on-site generation of renewable energy using solar panels on available rooftop space to offset a portion of the Proposed Project's electricity consumption as mandated by the California Building Standards Commission. However, specifications regarding the size of rooftop solar is currently unknown.
Water Sector		
Water Use Efficiency	W-1	Consistent. The Proposed Project would be required to comply with statewide water conservation requirements reducing water usage by 20%. Furthermore, low-flow plumbing equipment would be installed including waterless urinals, two flush toilets, and automated restroom faucets, in compliance with state building codes.
Water Recycling	W-2	Not applicable. Recycled water is not available to the site.
Water System Energy Efficiency	W-3	Not applicable. This is applicable for the transmission and treatment of water but is not applicable to the Proposed Project.
Reuse Urban Runoff	W-4	Not applicable. The Proposed Project would not reuse urban water on-site.
Renewable Energy Production	W-5	Not applicable. This is applicable for wastewater treatment systems but is not applicable to the Proposed Project.

Table 3.7-7
Proposed Project Consistency with Scoping Plan
Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Green Buildings		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	Not applicable.
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Consistent. The Proposed Project would be required to meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Consistent. The Proposed Project would be required to be constructed in compliance with local green building standards in effect at the time of building construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	Not applicable. This is applicable for existing buildings only. It is not applicable for the Proposed Project except as future standards may become applicable to existing buildings.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	Not applicable.
Oil and Gas Extraction GHG Emission Reduction	I-2	Not applicable.
Reduce GHG Emissions by 20% in Oil Refinery Sector	Proposed	Not applicable.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	Not applicable.
Refinery Flare Recovery Process Improvements	I-4	Not applicable.
Work with the local air districts to evaluate amendments to their existing leak detection and repair rules for industrial facilities to include methane leaks	I-5	Not applicable.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	Not applicable.
Increasing the Efficiency of Landfill Methane Capture	RW-2	Not applicable.
Mandatory Commercial Recycling	RW-3	Consistent. During both construction and operation, the Proposed Project would be required to comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.
Increase Production and Markets for Compost and Other Organics	RW-3	Not applicable.
Anaerobic/Aerobic Digestion	RW-3	Not applicable.
Extended Producer Responsibility	RW-3	Not applicable (applicable to product designer and producers).

Table 3.7-7
Proposed Project Consistency with Scoping Plan
Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Proposed Project Consistency
Environmentally Preferable Purchasing	RW-3	Not applicable (applicable to product designer and producers).
Forests Sector		
Sustainable Forest Target	F-1	Not applicable.
High GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	Consistent. Proposed Project residents would be prohibited from performing air conditioning repairs and would be required to use professional servicing.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	Not applicable.
Reduction of Perfluorocarbons (PFCs in Semiconductor Manufacturing	H-3	Not applicable.
Limit High GWP Use in Consumer Products	H-4	Consistent. The Proposed Project would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Consistent. It is assumed motor vehicles driven by Proposed Project residents would comply with the leak test requirements during smog checks.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	Not applicable.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	Not applicable.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	Not applicable.
40% reduction in methane and hydrofluorocarbon (HFC) emissions	Proposed	Not applicable.
50% reduction in black carbon emissions	Proposed	Not applicable.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	Not applicable. The Proposed Project would not prevent CARB from implementing this measure.

Notes: CARB = California Air Resources Board; CCR = California Code of Regulations; GHG = greenhouse gas; GWP = global warming potential; SB = Senate Bill; SF_6 = sulfur hexafluoride
Sources: CARB 2008, 2017a.

Based on the analysis in Table 3.7-7, the Proposed Project would be considered consistent with the applicable strategies and measures in the CARB Scoping Plan.

SB 32 and EO S-3-05

Regarding consistency with SB 32 (goal of reducing GHG emissions to 40% below 1990 levels by 2030) and EO S-3-05 (goal of reducing GHG emissions to 80% below 1990 levels by 2050),

there are no established protocols or thresholds of significance for that future-year analysis. However, CARB has expressed optimism regarding the 2030 and 2050 goals. It states in the First Update 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). Regarding the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update 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 Assembly Bill 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.

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 the Second Update, which states, "[t]his 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 2017a). 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% below 1990 levels). In developing this Scoping Plan, we considered what policies are needed to meet our mid-term and long-term goals" (CARB 2017a).

As discussed previously, the Proposed Project would be considered consistent with the Plan Bay Area and CARB's 2017 Scoping Plan and would not conflict with the state's trajectory toward meeting future GHG reductions. Since the specific path to compliance for the state in regards to the long-term goals would likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the Proposed Project would be speculative and cannot be identified at this time. With respect to future GHG targets under SB 32 and EO S-3-05, CARB made clear in its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations would be adopted to continue the state on its trajectory toward meeting these future GHG targets.

Based on the preceding considerations, the Proposed Project would not conflict with an applicable plan, policy, or regulation adopted to reduce the emissions of GHGs, and no mitigation is required. This impact would be **less than significant**.

Mitigation Measures

None required.

3.7.5 Cumulative Impacts

The geographic context for analyzing cumulative impacts is the San Francisco Bay Area Air Basin.

3.7-3: Would the Proposed Project contribute to cumulative GHG emissions within the region. The Project's contribution would not be considerable.

GHG impacts are cumulative impacts (BAAQMD 2017; CAPCOA 2008); therefore, assessment of significance is based on a determination of whether the GHG emissions from a project represent a cumulatively considerable contribution to the global atmosphere. If a project exceeds the identified significance thresholds, its contribution of GHG emissions would be cumulatively considerable, resulting in a cumulatively significant impact on climate change. As discussed in Impact 3.7-1, the Proposed Project would not result in GHG emissions in exceedance of the BAAQMD significance threshold. Therefore, the Proposed Project's GHG emissions would not be considered cumulatively considerable and the Proposed Project's contribution would be **less than significant.**

Mitigation Measures

None required.

3.7.6 References

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3.8 HAZARDS AND HAZARDOUS MATERIALS

3.8.1 Introduction

This section provides an overview of the potential presence of hazards and hazardous materials and other public health hazards on and near the proposed Hunter Subdivision Project (Proposed Project) site and evaluates the potential impact to public health and safety and the environment that could result from the development and operation of the Proposed Project.

Comments received in response to the Notice of Preparation included concerns regarding flooding hazards, hazardous materials, fire hazards, and emergency access. A copy of the Notice of Preparation and comments received is included in Appendix A. Comments regarding the potential for flooding are addressed in Section 3.9, Hydrology and Water Quality, while hazardous materials released during a flood are discussed within this section. Hazardous materials, fire hazards, and emergency access are addressed in this section.

The evaluation is based on a review of Project site plans, City of St. Helena (City) planning documents, a review of historical land use documents and regulatory agency information, a Phase I Environmental Site Assessment (ESA) included in Appendix G, and a review of other available materials from state and federal agencies and databases. Other sources consulted are listed in Section 3.8.6, References.

3.8.2 Environmental Setting

This section describes the existing hazardous materials setting on and near the Project site, the existing regulatory framework for hazardous materials and hazardous waste and applicable worker health and safety requirements, and local policies related to public health and safety.

Existing Conditions

Hazardous materials, as defined by the California Health and Safety Code, may be present in the subsurface of any site as a result of past and present land uses. Exposure to hazardous materials could adversely affect the health of construction workers or the public during construction, as well as residents, or visitors to a site during operation if the hazardous materials are not contained, removed, or remediated.

Site Description and History

As stated in Chapter 2, Project Description, the Project site consists of approximately 17 acres with a small vineyard located in the southwestern and along the northwestern “panhandle” portion of the site. There are no structures or buildings located on the Project site. An existing groundwater well is located near the southeastern portion of the site. A stormwater detention

basin, as part of a previous City Flood Protection Project, is located to the north-northeast of the Project site. Historically the site has been used primarily for agricultural cultivation; likely vineyards and orchards, discussed in more detail below.

Historic Land Uses

As noted in Appendix G, past potential hazardous materials issues associated with historic land uses at and adjacent to the Project site were evaluated by reviewing historical aerial photographs from 1947, 1953, 1958, 1968, 1973, 1982, 1993, 2006, 2010, and 2014. Historic photographs indicate that the majority of the Project site was used for agricultural cultivation, likely vineyards and orchards. As shown in the photographs from 1947 through 1968, five ponds are visible outside of the Project site boundaries generally adjacent to the south and southeast. It appears these ponds were removed after 1968 to construct the road and the adjacent Vineyard Valley Mobile Home Park. The Project site has remained as mostly agriculture with limited development.

The first development of the Project site appears to be prior to 1947 based on a review of aerial photographs, which shows an orchard in the northeast portion of the site while the remainder is visible as undeveloped grasslands. Holding ponds are visible along the southeastern border of the Project site and the surrounding areas consist of low-density residential development to the southeast and agriculture towards the north and west.

From 1953 through 1968, historic photos indicate no significant changes, other than the removal of the orchard. In 1973, vineyards appear on the southwest portion of the Project site and it appears the holding ponds were removed, and the initial stages of residential development are visible to the south and east.

Significant residential development surrounding the Project site first appears in 1982 as well as the presence of a small holding pond on the northeast portion of the Project site. The 1993 and 2006 photographs have little to no change to the site but indicate significant development of residences surrounding the site.

In the 2010 photograph, significant changes to the northern portion of the Project site are indicated. On the west, extending from the southern border, adjacent to the western boundary of the site, to the northern boundary of the site, a gravel access road appears. Grading on the Project site and to the north of the site, including the construction of a levee next to the riparian area north of the Project site is shown. In a more recent 2014 photograph, areas of fill has been covered with grasslands, the levee is completed, and an access maintenance road is shown along the northwestern boundary of the Project site extending from the southern end to north of the Project site.

Sensitive Receptors

The Project site is bordered by residential development to the south and east. The closest schools to the Project site include the public Robert Louis Stevenson Middle School (0.67 miles west), the private St. Helena Montessori School (0.61 miles east), and the public St. Helena Elementary School (0.53 miles southwest). The Santa Rosa Memorial Hospital is located approximately 15 miles west of the Project site.

The Angwin-Parrett Field airport is the closest airport to the Project site and is located approximately 4.5 miles to the north-northeast.

Previous Site Investigations

In accordance with the American Society for Testing and Materials (ASTM) Standard E-1527, a Phase I ESA (Appendix G) was prepared by EBA Engineering on March 6, 2018.

Hazardous material issues at the Project site were evaluated by a thorough review of historical land use information, regulatory agency hazardous materials records and databases, and a site reconnaissance as part of the Phase I ESA.

The Project site was not identified in any regulatory agency files or databases as having recognized environmental concerns. The Phase I ESA determined that there was no indication of the historic use, generation, or disposal of hazardous materials and/or waste. There was no indication of the presence of any underground storage tanks on the Project site.

Agricultural chemicals have been recorded for use on the onsite vineyard from the Napa County Agricultural Commissioner's Office (Appendix G). Agricultural chemicals recorded included herbicides, fungicides, and miticides. All chemicals used on the site were overseen by the Napa County Agricultural Commissioner's Office in accordance with Title 3 of the California Code of Regulations. No agricultural chemicals were stored or mixed onsite. Historic aerial photographs of the site indicate an orchard was present dating from the 1940s; an era where it was common to use organochlorines and arsenic as pesticides; however, no record of use was found and no further subsurface investigation was identified (Appendix G).

A search of nearby areas in the Phase I ESA determined that no open or active sites were within 1,000 feet of the Project site. Based on a one-mile search radius (required by ASTM Standard 1527-13), three sites were identified as open/active for generation or handling of hazardous materials and/or wastes that are regulated for such use and disposal. The Phase 1 ESA notes 20 sites were found to be closed with regulatory oversight. Other open sites included seven sites that either were in the process of remediation, or on a list for being an active business such as an automotive shop. Due to their status, distance from the Project site, and

listing type (listed for generation and not for large spills), it was determined that these sites would not pose an environmental threat to the Proposed Project and therefore were not considered a recognized environmental concern. A complete list of sites can be found in Appendix G.

Additional Database Review

In addition to the Phase I ESA, the Department of Toxic Substances Control's (DTSC) online database system, EnviroStor, was reviewed for recorded hazardous materials sites near the Project site. The Project site is not listed as a hazardous materials spill site, cleanup site, handler of hazardous materials, or facility which transports, stores, or produces hazardous materials (DTSC 2019).

Two sites are listed on the EnviroStor database, Klass Cleaners and Pacific Gas & Electric (PG&E), which are located approximately 2,440 feet and 2,700 feet south of the Project site, respectively. Klass Cleaners is an active voluntary cleanup site. The site has been a dry cleaning facility for the past 40+ years, which included the use, storage, and handling of hazardous materials including acetone, benzene, chloroform, tetrachloroethylene (PCE) and trichloroethylene (TCE) (EnviroStor 2019a). The business occupied the southern third of the building located at 1141 Main Street, approximately 2,440 feet south of the Project site. The site has been confirmed to have contaminated groundwater directly to the north (under a current gas station), and to the southeast of the building. Soil vapor contamination has been found directly under the building but has not been identified off the property. The complete lateral and vertical extent of contamination has not been determined (EnviroStor 2019a). The site became active through a Request for Agency Oversight Application on June 29, 2018. In August of 2018, PCE was detected through a site characterization report. Due to the site's location, groundwater movement, contamination characteristics, and type of contamination, it is unlikely that this site would have an impact on the Proposed Project.

The PG&E site is a certified, operation and maintenance defined site as of July 18, 2017. This site was a manufactured gas plant which operated from 1883 until 1926. The site was purchased by PG&E in 1930 and was dismantled upon introduction of natural gas to the region in 1931. The site is located at 1301 Mitchell Drive, approximately 2,700 feet south of the Project site. During a standard site screening subsurface investigation at the site in 1987, it was discovered that polycyclic aromatic hydrocarbons, petroleum hydrocarbons, arsenic, and lead were detected. Remedial actions of the site were conducted in two phases. The first phase, excavation, was completed in 2007 and a dual phase soil vapor/ groundwater extraction system was installed. This system was operated for approximately 5 years. The second phase was completed in 2014 and included excavating and removing potentially contaminated soils up to 8 feet below the ground surface (EnviroStor 2019b). Groundwater was sampled and monitored

throughout remediation. A long-term operation and maintenance plan includes continuous groundwater monitoring and site inspections to ensure compliance with property use restrictions. In addition, land use restrictions between PG&E and DTSC dated March 17, 2017, include the prohibition of a residence, hospital, public or private schools, or a day care. Due to this site's characteristics, location from the Project site, and groundwater sampling which has not peaked above remediation goals, this site is unlikely to pose a hazardous risk to the Proposed Project.

Wildland Fire Hazards

In accordance with California Public Resource Code Section 4201-4201 and Government Code Sections 51175–51189, the California Department of Forestry and Fire Protection (CAL FIRE) has mapped areas of significant fire hazards based on available fuels, terrain, weather patterns, and other relevant factors associated with wildland fire risks. These mapped zones, referred to as Fire Hazard Severity Zones, represent the risks associated with wildland fires. Under state law Government Code Section 511182, areas within very high fire hazard risk zones must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life within these areas. There are two responsible designated areas, Local Responsibility Areas and State Responsibility Areas, which are in control of wildland fires within their respective areas. These are mapped through CAL FIRE.

On August 17, 2020, a series of overnight lighting strikes started fires that burned over 300,000 acres across five counties including Napa County. The LNU Lighting Complex fire was fully contained by early October. In late September 2020, the Glass Fire started and burned over 67,484 acres and destroyed over 1,800 structures in Napa County and Sonoma County. The fire was fully contained on October 20, 2020. The hills visible from the Project site experienced fire damage. The Project site is located within a Local Responsibility Area that is rated as a Non Very High fire Hazard Safety Zone (Non-VHFHSZ) (CalFire 2019).

3.8.3 Regulatory Setting

The U.S. Environmental Protection Agency (EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (CalEPA) for issues within the state. In turn, the local agency, Napa County Department of Environmental Management has been granted responsibility for implementation and enforcement of many hazardous materials regulations within the City under the Certified Unified Program Agency (CUPA) Program.

Federal Regulations

Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984

Federal hazardous waste laws are generally promulgated under the Resource Conservation and Recovery Act (RCRA). The RCRA establishes a framework for national programs to achieve environmentally sound management of hazardous and non-hazardous wastes. The RCRA was designed to protect human health and the environment, reduce or eliminate the generation of hazardous waste, and conserve energy and natural resources. The RCRA also promotes resource recovery techniques. The Hazardous and Solid Waste Amendments of 1984 expanded the scope of the RCRA and increased the level of detail in many of its provisions. The Hazardous Waste Management subchapter of the RCRA deals with a variety of issues regarding the management of hazardous materials, including the export of hazardous waste, state programs, inspections of hazardous waste disposal facilities, enforcement, and the identification and listing of hazardous waste. In California, the EPA has authorized the DTSC to administer the RCRA program, pursuant to the State's Hazardous Waste Control Law.

Comprehensive Environmental Response, Compensation, and Liability Act and the Superfund Amendments and Reauthorization Act of 1986

Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, on December 11, 1980. CERCLA 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. The Superfund Amendments and Reauthorization Act amended CERCLA on October 17, 1986. The Superfund Amendments and Reauthorization Act stresses the importance of permanent remedies and innovative treatment technologies in cleaning up hazardous waste sites, requires Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations, provided new enforcement authorities and settlement tools, increased state involvement in every phase of the Superfund program, increased the focus on human health problems posed by hazardous waste sites, encouraged greater citizen participation in making decisions on how sites should be cleaned up, and increased the size of the trust fund.

Hazardous Materials Transportation Act

The U.S. Department of Transportation regulates hazardous materials transportation under Code of Federal Regulations (CFR) Title 49. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation

emergencies are the California Highway Patrol and the California Department of Transportation. These agencies also govern permitting for hazardous materials transportation.

EPA Regional Screening Levels

Regional Screening Levels are tools for evaluating and cleaning up contaminated sites. Regional Screening Levels for the Superfund programs provide comparison values for residential and commercial/industrial exposures to soil, air, and tap water. These values are risk-based concentrations, derived from standardized equations combining exposure information assumptions with EPA toxicity data. They are considered to be protective for humans (including sensitive groups) over a lifetime.

State Regulations

Routine hazardous materials management in California is administered under the CUPA program. The CUPA program was established under the 1993 California Senate Bill 1082 to reduce the cost and improve the efficiency of enforcement of hazardous materials laws and regulations.

California Government Code Section 65962.5(a), Cortese List

The Hazardous Waste and Substance Sites (Cortese) List is a planning document used by state and local agencies and developers to comply with California Environmental Quality Act (CEQA) requirements to provide information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires the CalEPA to develop, at least annually, an updated Cortese List. The DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List. The Project site is not listed on the Cortese List database.

Title 22 of the California Code of Regulations and Hazardous Waste Control Law, Chapter 6.5

The DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the RCRA and the California Hazardous Waste Control Law. Both laws impose “cradle-to-grave” regulatory systems for handling hazardous waste in a manner that protects human health and the environment. CalEPA has delegated some of its authority under the Hazardous Waste Control Law to county health departments and other Certified Unified Program Agencies, including the Napa County Environmental Health Division. In California, the EPA has authorized the DTSC to administer the RCRA program, pursuant to the state’s Hazardous Waste Control Law.

California Human Health Screening Levels

California Human Health Screening Levels (CHHSLs or "Chisels") are concentrations of 54 hazardous chemicals in soil or soil gas that CalEPA considers to be below thresholds of concern for risks to human health. The CHHSLs were developed by the Office of Environmental Health Hazard Assessment on behalf of CalEPA. The CHHSLs were developed using standard exposure assumptions and chemical toxicity values published by the EPA and CalEPA. The CHHSLs can be used to screen sites for potential human health concerns where releases of hazardous chemicals to soils have occurred. Under most circumstances, the presence of a chemical in soil, soil gas, or indoor air at concentrations below the corresponding CHHSL can be assumed to not pose a significant health risk to people who may live or work at the site. There are separate CHHSLs for residential and commercial/industrial sites.

California Emergency Services Act

The California Emergency Services Act was adopted to establish the state's roles and responsibilities during human-caused or natural emergencies that result in conditions of disaster and/or extreme peril to life, property, or resources of the state. This act is intended to protect health and safety by preserving the lives and property of the people of the state.

California Natural Disaster Assistance Act

The California Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The California Natural Disaster Assistance Act is activated after the following occurs: a local declaration of emergency and the California Emergency Management Agency gives concurrence with the local declaration, or the governor issues a proclamation of a state emergency. Once the act is activated, local government is eligible for certain types of assistance, depending on the specific declaration or proclamation issued.

Title 14 Division 1.5 of the California Code of Regulations

Title 14 of the California Code of Regulations, Division 1.5, establishes the regulations for CAL FIRE and is applicable in all State Responsibility Areas—areas where CAL FIRE is responsible for wildfire protection. Most of the unincorporated area of Napa County is a State Responsibility Area, and any development in a State Responsibility Area must comply with these regulations. The City is not within the unincorporated area of Napa County and is not within a State Responsibility Area. Among other things, Title 14, Section 1270 et seq. establishes minimum standards for emergency access, fuel modification, setback to property lines, signage, and water supply.

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.

Building, Fire and Residential Code

The State Fire Marshal's Building, Fire and Residential Code went into effect on January 1, 2011. This code incorporated the requirement of residential fire sprinklers in all new one-and two-family dwellings and townhouse construction statewide into the 2010 California Building Standards Codes. Fire sprinkler systems are also required in office buildings and multi-family dwellings (i.e. apartments).

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.

Local Regulations

Napa County Agricultural Commissioner's Office

The Napa County Agricultural Commissioner and staff are responsible for the implementation of federal, state, and local regulatory programs within Napa County. Specifically, these programs are designated to protect people and the environment and promote agriculture within Napa County. Agriculture in and around St. Helena uses a variety of hazardous materials, including fuels and maintenance fluids for farm equipment, fertilizers, and pesticides (including herbicides, fungicides, and insecticides).

Pesticides are regulated under the federal Insecticide, Fungicides and Rodenticide Act by the EPA. This includes labeling and registration of pesticides as to how they may be used. The EPA delegates pesticide enforcement activities in California to the California Department of Pesticide Regulation, under Title 3 of the California Code of Regulations and the California Food and Agriculture Code. The California Department of Pesticide

Regulation register pesticides for use in California, and licenses pesticide applicators and pilots, advisors, dealers, brokers, and businesses.

As stated above, the City of St. Helena's hazardous materials programs are administered and enforced by the Napa County Department of Environmental Management under the CUPA program.

Napa County Operational Area Hazard Management Plan

The City participated in the Napa County Operational Area Hazard Management Plan, which was adopted in 2013 and satisfies the requirements of the Disaster Mitigation Act of 2000. The plan includes a risk assessment that resulted in the profiling of hazards that pose risk to Napa County (including the incorporated cities), assessment of Napa County's vulnerability to those hazards, and examined the capabilities in place to mitigate them. Vulnerabilities identified, profiled, and analyzed in this plan include flooding, earthquakes, and wildland/urban interface fires. The plan also identifies goals for reducing risks from hazards. Objectives of the plan are to protect life and property; ensure emergency services; increase public awareness and understanding of hazard mitigation; protect critical facilities properties, infrastructure and other community assets from the impacts of hazards; and continue to strengthen communication and build on the collaborative success already achieved. In addition to county-wide risk assessment, the plan includes city-specific risk assessments.

Napa County Emergency Operations Plans

The Napa County's Concept of Operations Base Plans include the Napa County's Public Health Division Health and Human Services Agency Concept of Operations Base Plan; Crisis Emergency Risk Communication Plan, Strategic National Stockpile Plan, Countermeasure Distribution Plan, Outbreak/Epidemiologic Response Plan; Medical Surge Plan; Mass Care and Shelter Plan; Campus Response Plan; Local Assistance Center Plan; Excessive Heat emergencies Response Plan; Fatality Management Plan; and a Healthcare Evacuation Plan (Napa County 2019).

The Base Plans establish the Napa County Public Health Division Health and Human Services Agency's emergency organization, assigns task, specifies policies and general procedures, and provides for coordination of planning efforts using the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS). The primary threats to Napa County include earthquakes, floods, landslides, fires, disease outbreaks, hazardous materials releases, transportation accidents, and national security incidents (Napa County 2019).

The Base Plans include a system of operations with scenarios and procedures in the event of an emergency. Each plan listed above provides detailed training guidance for staff and volunteers- including clear and concise roles and responsibilities within each department and organization; risk communication media and outreach goals, methods, and policies; public outreach, and public health division spokesperson to deliver approved information to the public during a crisis.

Napa County Draft 2019 Multi-Jurisdictional Hazard Mitigation Plan Update

Napa County, along with other jurisdictions, is planning to develop, but has not yet adopted, an update to the Napa County Operational Area Hazard Mitigation Plan of 2013.

Hazard mitigation is the use of long-term actions to reduce the loss of life, personal injury, and property damage that can result from a disaster. Planning efforts could include capital projects and other pragmatic activities that can mitigate the impacts of hazards. The draft 2019 Multi-Jurisdictional Hazard Mitigation Plan update would cover each of the major natural hazards that pose risks to Napa County infrastructure and residents.

The 2019 draft Multi-Jurisdictional Hazard Mitigation Plan update would include, at a minimum, the jurisdictions listed below. It is understood that Napa County also encompasses areas of land controlled by federal and state land management agencies including the California Department of Forest and Fire Protection, Bureau of Land Management, and Bureau of Reclamation. The following jurisdictions would meet Federal Emergency Management Agency guidelines and requirements as a formal participating agency, City of American Canyon, City of Calistoga, City of St. Helena, Town of Yountville, Napa County Flood Control and Water Conservation District, Napa County Office of Education, and Napa Valley College (Dynamic Planning and Science 2016).

The 2019 Multi-Jurisdictional Hazard Mitigation Plan update would include a comprehensive plan for flood damage reduction, additional mapping of properties which sustain repetitive losses due to flooding, and detailed inundation mapping technology. The plan would also include updated preparedness controls for wildfire mitigation, and earthquake mitigation.

City of St. Helena 1993 General Plan

The existing 1993 General Plan does not contain policies related to hazardous materials. However, it does contain the following implementing policies regarding emergency response included in the Public Health and Safety Element:

> **Policy 8.5.2**: Protect St. Helena residents from health and safety impacts related to the use, storage, manufacture or transport of hazardous materials.

Policy 8.5.6: Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

Policy 8.5.7: Ensure that all streets and roads are adequate in terms of width, turning radius, and grade to facilitate access by City firefighting apparatus, and to provide alternative emergency ingress and egress.

Policy 8.5.9: Review all new development proposals for their potential to introduce the production, use, storage, and/or transport of hazardous materials, and require reasonable controls on such hazardous materials

Policy 8.7.2: Maintain and periodically update the City's Emergency Response Plan.

Policy 8.7.3: Conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The 2019 General Plan contains the following policies regarding hazardous materials, emergency response and best practices included in the Public Health and Safety Element:

Policy PS4.3: Protect St. Helena residents from health and safety impacts related to the use, storage, manufacture, and transport of hazardous materials.

Policy PS4.4: Discourage new uses that rely extensively on the use of hazardous materials.

Policy PS4.5: Facilitate communication and education about fire safety, non-point source pollution, household hazardous waste disposal, and recycling opportunities.

Policy PS4.6: Ensure that all streets and roads are adequate in terms of width, turning radius, and grade in order to facilitate access by City firefighting apparatus, and to provide alternative emergency routes of ingress and egress.

Policy PS4.D: Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

St. Helena Municipal Code

Chapter 15.36 of the City's Municipal Code adopted the 2010 California Fire Code for all buildings and construction within the city. Chapter 2.64 aims to provide for the preparation and carrying out of plans for the protection of persons and property within the city in the event of an emergency; the direction of the emergency organization; and the coordination of the emergency

functions with all other public agencies, corporations, organizations, and affected private persons. This chapter also establishes responsibilities for carrying out the City's emergency plan, which the City has not yet adopted.

The St. Helena emergency council is responsible for the development of the City's emergency plan, which shall provide for the effective mobilization of all City resources, both public and private. The council is to meet any condition constituting a local emergency, state of emergency, or state of war emergency; and provides for the organization, powers and duties, services, and staff of the emergency organization. The plan takes effect upon adoption by resolution of the City Council.

3.8.4 Impacts

Methods of Analysis

The analysis of the potential public safety and hazardous materials impacts is based on information from the Phase I ESA prepared for the Proposed Project (Appendix G), a review of City planning documents, historical land use documents, regulatory agency literature/database review, and other existing documentation used to establish existing conditions and to identify potential environmental effects based on the standards of significance presented in this section. In determining the level of significance, the analysis assumes that the Proposed Project would comply with all applicable state and local ordinances and regulations (summarized above).

As noted above, potential hazards and associated impacts related to hazards associated with flooding or a levee break and emergency procedures in the event of a flood are discussed in Section 3.9, Hydrology and Water Quality.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

- Be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Threshold Criteria not Applicable to the Proposed Project

Due to the characteristics and location of the Proposed Project, certain criteria thresholds listed above are not applicable and therefore would not be considered potential impacts. These criteria are addressed below and not discussed further in this Environmental Impact Report (EIR).

Nearby Schools

The Project site is not located within one-quarter mile of an existing or proposed school. The closest schools to the Project site include Robert Louis Stevenson Middle School (0.67 miles west), St. Helena Montessori School (0.61 miles east), and St. Helena Elementary School (0.53 miles southwest). Because no existing or proposed school is within one-quarter mile of the Project site, and Proposed Project residences would not be expected to use or handle acutely hazardous materials, substances, or waste there would be no impacts and this issue (third significance threshold listed above) is not further evaluated.

Previously Listed Hazardous Site

As stated above, a Phase I ESA (Appendix G) was prepared for the Project site and included a search of databases pursuant to Government Code Section 65962.5. The Phase I ESA also included historic aerial photographs of the Project site to determine prior, un-documented land uses and the surrounding properties. The Proposed Project is not located on a site which is included on a list of hazardous materials and would therefore not create a significant hazard to the public or the environment. There would be no impact and this issue (fourth significance threshold listed above) is not further discussed.

Airports

The Project site is not located within an airport land use plan or within 2 miles of an airport. The closest airport to the Project site is the Angwin-Parrett Field airport located approximately 4.5 miles north-northeast of the site. Proposed Project residents would not be impacted by excessive noise from an airport and the Proposed Project does not include towers or other tall obstructions that could interfere with air travel. There would be no impact and this issue (fifth significance threshold listed above) is not further discussed.

Impacts and Mitigation Measures

3.8-1: Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? This impact would be less than significant.

Construction

During construction activities, hazardous materials, such as petroleum (fuels, motor oil, lubricants), would be used for equipment. In general, small amounts of these materials would be on site at any one time. No acutely hazardous materials would be used during construction of the Proposed Project. In addition, materials handled would not pose a significant risk to off-site residents or construction workers because they would be used and stored in accordance with existing laws and regulations. Development of the Proposed Project would be subject to existing regulatory requirements for hazardous materials, including requirements under the National Pollutant Discharge Elimination System permit through the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), discussed in Section 3.9, Hydrology and Water Quality. The SWPPP would require implementation of control measures for hazardous material storage, soil stockpiles, inspections, maintenance, training of employees, and containment of releases to prevent contaminated runoff into nearby stormwater collection systems or waterways. Included within the SWPPP, best management practices would be required to contain hazardous materials and minimize the contact of hazardous materials with stormwater. As part of the SWPPP, spill prevention measures would be described for each chemical type and secondary containment of those chemicals would be used to ensure that spills can be managed and limited to the containment areas. Although not anticipated, if quantities of fuel or oil greater than or equal to 1,320 gallons are stored on the Project site during construction, then a Spill Prevention Control and Countermeasure Plan must be prepared in accordance with 40 CFR 112.

With the implementation of the SWPPP, and proper handling methods for each chemical type, impacts to the public or environment through the routing transport, use, and disposal of hazardous materials would be **less than significant.**

Operation

During Proposed Project operation, residents would be expected to use and store typical household hazards such as house paint, cleaning products, herbicides, and pesticides. The amounts of hazardous materials that residents store or use is negligible and not considered sufficient to create a significant safety hazard to the public, or otherwise pose a significant risk to human health or the environment. Napa County handles the disposal of household hazardous waste at their collection facility located at 889A Devlin Road in south Napa; approximately 30 miles south of the Project site.

Implementation of local hazardous materials programs and requirements as stated above, in addition to compliance with state and federal laws and regulations, would ensure that the Proposed Project would not create a significant hazard to the environment through routine transport, storage, use, and disposal of hazardous materials. Based on information provided above, this potential impact would be **less than significant.**

Mitigation Measures

None required.

3.8-2: Would the Proposed Project 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? This impact would be potentially significant.

Construction

During construction activities, hazardous materials such as solvents, petroleum (lubricants and fuels), and other typical construction equipment would be used. Amounts would be negligible and a hazardous spill plan would be implemented as part of the construction contractor's SWPPP (discussed under Impact 3.8-1, above). Best management practices would also be implemented as part of the SWPPP in order to reduce the likelihood of hazardous materials spills. Secondary containment containers would be used as part of storing fuels or hazardous materials on the Project site. In the event of a spill of hazardous materials, most, if not all, chemicals would be limited to the Project site or immediate vicinity as the amounts stored, used, or transported on the site would be minimal and unlikely to cause a significant impact on the public and environment. This impact is **less than significant.**

Due to the historic use of a portion of the site for agricultural uses, specifically an orchard in the late 1940s, there is a potential for contaminated soils to be encountered during construction activities. Potentially contaminated soils would include the past application of unregulated

pesticides. Prior agricultural activities may have used organochlorine pesticides (OCPs), such as DDT, toxaphene, dieldrin, etc., as well as arsenic in the form of arsenical herbicides, which has a history of use on many agricultural properties. Organochlorine pesticides were first introduced into California agriculture in 1944 and reached peak usage in the 1960s. In 1974, the use of the DDT was banned for agricultural purposes, and the elimination of remaining OCPs in California agriculture quickly followed. OCPs are biopersistent and bioaccumulate in the environment, whereas other types of pesticides have a short half-life (i.e., they degrade fairly quickly with time). Today, pesticides are required to demonstrate a lack of persistence in the environment considerably beyond their intended period of use in order to obtain EPA approval. Furthermore, when pesticides are used properly and in accordance with label specifications, potential impacts on the surrounding environment and receiving waters (surface water and groundwater) are minimized. Therefore, the primary concern from a human health perspective is the potential for residual levels of OCPs and/or arsenical herbicides which were in common use in the mid-1900s.

The Phase I ESA prepared for the Project site (Appendix G) concluded that the site is not subject to any recognized environmental concerns. Under ASTM Standard E1527-13, a recognized environmental concern means the presence or likely presence of hazardous substances or petroleum products in, on, or at a property, due to any release to the environment, under any conditions indicative of a release to the environment, or under conditions that pose a material threat of a future release to the environment. The conclusion is based on an extensive review of regulatory agency records pertaining to the storage, use and/or potential release of hazardous materials, including pesticide use records from the Napa County Agricultural Commissioner's Office; as well as owner/operator interviews, site reconnaissance, and review of historical aerials and topographic maps. Regarding the potential for past use of OCPs, such as DDT, toxaphene, dieldrin, etc., the Phase I ESA concluded that it is unlikely that any significant concentrations would be present onsite, based on the fact that no agricultural chemicals have been stored or mixed onsite and because if such chemicals were historically used, they would have likely degraded to the point where their concentrations no longer pose a threat to human health or the environment. While the Phase I ESA concludes that it is unlikely that residual levels of pesticides would be present in significant concentrations, the absence of contaminants of concern such as OCPs and arsenic has not been confirmed through on-site soils testing. This is an issue of concern that was brought up in comments in response to Notice of Preparation. The impact to human health and the environmental from residual concentrations of OCPs and/or arsenic is considered a **potentially significant impact** because the Proposed Project includes sensitive receptors (residents), and because the finding of the Phase I ESA has not been confirmed through on-site soils testing.

In the event of a flood during construction, hazardous materials associated with construction activities may be released into flood waters and expose people or the environment to hazardous

conditions. However, as further discussed in Section 3.9, the Napa River levee has been designed to withstand a 200-year storm event. Due to the extreme volume of flood water associated with a 200-year storm event, the maximum amount of hazardous materials associated with the proposed construction activities that could be released would be negligible as compared to the amount of hazardous materials that would be transported under existing conditions. This is a considered a **less-than-significant impact.**

Operation

Future residents at the Project site would be bordered by agricultural uses to the north/northwest, existing residences to the south and east, and undeveloped land and a flood control levee along the Napa River to the north/northeast. Residences, as stated above, typically use small amounts of household hazardous wastes. The use of these types of household products would not be of a large enough quantity to result in a significant hazard to the public or the environment through the event of an accidental release.

As during construction, in the event of a flood, household hazardous materials from Proposed Project operation may be released into flood waters and expose people or the environment to hazardous materials. However, as further discussed in Section 3.9 of this EIR, the Project site is protected by a levee which was built to withstand a 200-year flooding event. Due to the extreme volume of flood water associated with a 200-year storm event, the maximum amount of hazardous materials associated with the proposed construction activities that could be released would be negligible as compared to the amount of hazardous materials that would be transported under existing conditions. This is considered a **less-than-significant impact.**

Mitigation Measures

Implementation of Mitigation Measure HAZ-1 would ensure that if soils located within the Project site contain pesticides that exceed CHHSLs for residential development and occupancy, such soils would be removed and/or remediated prior to any site disturbance or occupancy. With implementation of Mitigation Measure HAZ-1, a preliminary soil screening survey would ensure that soils on the Project site would comply with CHHHLs for residential development and occupancy ensuring the impact is mitigated to less than significant.

HAZ-1: As a condition of approval for construction and grading permits for the Project site, the Project applicant shall ensure the following subsurface soils testing and follow-up analysis shall be performed prior to obtaining a grading permit:

- A soils testing work plan shall be developed in accordance with DTSC's Interim Guidance for Sampling Agricultural Properties (DTSC 2008) by an appropriately licensed individual (i.e., professional geologist, environmental

engineer, or similar qualification) for the portions of the Project site historically used for agriculture. Special consideration shall be given to targeting site soils that are representative of historic agricultural use, and to avoid sampling recent fill material placed during levee construction. Prior to carrying out soils testing, the work plan shall be submitted to the Napa County Division of Environmental Health (as the Certified Unified Program Agency for all cities and areas of Napa County) and the City of St. Helena for review and approval.

- The number of soil samples, sampling methods, compounds tested, background samples (if applicable), and laboratory analyses shall be completed in accordance with DTSC's Interim Guidance. Should analytical results exceed naturally occurring concentrations or applicable CHHSLs, the health risks of such a condition shall be evaluated in human health risk assessment as described in DTSC standards and guidance (e.g., preliminary endangerment assessment guidance manual).
- The risk assessment shall describe measures that must be implemented to ensure potential health risks to construction workers, site residents, and the general public as a result of hazardous materials are reduced to a cumulative risk of less than one in one million for carcinogens and a cumulative hazard index of 1 for non-carcinogens, or as required by the Napa County Division of Environmental Health acting as the Certified Unified Program Agency and/or DTSC oversight.
- In the event human health risk assessment shows elevated chemical concentrations pose a risk to human health or the environment, the risks shall be eliminated or substantially reduced by removal (e.g., excavation of soils and off-site disposal) or remediation of contaminated soils, and/or implementation of institutional controls and engineering controls (IC/EC). IC/EC may include use of a construction risk management plan, use of hardscape to cap problem areas, importation of clean soil in landscaped area to eliminate exposure pathways, and/or deed restrictions. If IC/EC are implemented, an Operations and Maintenance Program shall be prepared and implemented to ensure that the measures adopted are maintained throughout the life of the project.

The soil testing report, and if applicable, the human health risk assessment and Operations and Maintenance Program, shall be subject to review and approval by the City of St. Helena Department of Public Works, the Napa County Division of Environmental Health and/or other regulatory oversight agencies.

3.8-3: Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? This impact would be less than significant.

Construction

Construction activities could physically interfere with an adopted emergency response or evacuation plan if it did not adhere to the requirements of such plans. The City currently does not have an adopted emergency evacuation plan and relies on the Napa County Emergency Operations Plans and the City's fire department to review site plans to ensure adequate access is provided in the event of an emergency. During construction activities in the event of a fire, hazardous spill, or other emergency access for emergency personnel and equipment as well as access for construction workers to evacuate the site would be available. The construction contractor would also implement the SWPPP, as discussed under Impact 3.8-1. The SWPPP would include an Integrated Contingency Plan and an evacuation plan for construction workers in the event of an emergency. The evacuation plan would be used in case of a fire, potential life threatening hazardous materials release, or any other emergency situation that has the potential to harm human life and safety. The evacuation plan would be prepared in accordance and oversight of City staff. Compliance with the SWPPP and the Integrated Contingency Plan would ensure impacts are **less than significant.**

Operation

The Proposed Project's tentative map is designed with three points of access; the extension of Star Avenue and Adams Street and an emergency vehicle access (see Figure 2-3 in Chapter 2, Project Description) to facilitate the ingress and egress of emergency response vehicles, including the City and County Fire Department's apparatus and Proposed Project residents. The City's Fire Department would review the site plans to determine if any additional road widening or access is recommended. The emergency vehicle access would be designed with bollards or a fence that would be kept locked. In the event of an emergency requiring evacuation, police or fire personnel/vehicles would have access to remove the bollards/unlock the gate through a locked box (e.g., knox box). Proposed Project operation would not interfere with the preparation of the City's emergency response plan or Napa County's Emergency Operations plan as it would be designed to comply with the California Building Code, as well as the 1993 General Plan and 2019 General Plan's community design standards; all of which include emergency response access features. The Community Design Element of the 1993 General Plan and 2019 General Plan include requirements for residential design to conform with the patterns and densities of neighboring areas, as well as accessibility for residents. The General Plans also include fire and hazardous materials guiding policies which require new development to meet the minimum fire flow rates specified by the City's Fire Code (Policy 8.5.6 in the 1993 General

Plan and Policy PS4.D in the 2019 General Plan), as well as ensuring all streets and roads are adequate in terms of width, turning radius, and grade to facilitate access by City firefighting apparatus, and to provide alternative emergency ingress and egress (Policy 8.5.7 in the 1993 General Plan and Policy PS4.D in the 2019 General Plan).

Compliance with City policies and regulations would ensure the Proposed Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; therefore, the impact would be **less than significant**.

Mitigation Measures

None required.

3.8-4: Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? This impact would be less than significant.

Construction

The Project site is bordered by residential development to the south and east. Irrigated agricultural land and undeveloped lands surround the Project site to the southwest, west, northwest, and directly north, with the exception of the Napa River which is north/northeast of the Project site. Across the Napa River, farther to the north, are additional irrigated agricultural lands. The Project site and the surrounding land uses are located within an area mapped as "Non-VHFHSZ" under the Local Responsibility Area map by CAL FIRE (CalFire 2019).

Construction activities have the potential to cause sparks which may cause a fire. As discussed under Impact 3.8-2, best management practices included within the recommended SWPPP would include precautions to temporarily remove vegetation in areas where construction equipment or vehicles would access, as well as have a water supply onsite for fire protection. As stated in Section 3.3, Air Quality, the Bay Area Air Quality Management District's Regulation 6, Rule 6 addresses the prohibition of fugitive road dust emissions associated with trucks tracking mud onto local roads "trackout." To comply with the Bay Area Air Quality Management District's regulations for fugitive dust and trackout, the Project site would be regularly watered for dust suppression during construction activities, which would serve a dual purpose in also reducing the risk for fires to occur. Impacts related to wildland fires during construction activities would be considered **less than significant**.

Operation

The Proposed Project's residences would be built to the California Building Code requirements for fire protection in place at the time. During Proposed Project operation sparks from vehicles is lowered because vehicles accessing the site would be on paved roads and adjacent landscape strips or yards would be set back from the road via a 4-foot-wide sidewalk. Also, the landscape strip and yards would be regularly irrigated during the dry summer and fall months so it is unlikely there would be access to dry grass where many wildfires start. Likewise, landscape equipment including lawnmowers and other common handheld power tools would be used on irrigated lawns and unlikely to be used on any dry grassy areas where sparks could initiate a wildfire.

As stated previously, the Proposed Project's tentative map is designed with an emergency vehicle access to facilitate the ingress and egress of emergency response vehicles, including the City and Napa County Fire Department's apparatus. The City's Fire Department would ensure the final site plans provide adequate emergency evacuation and would be consistent with the City's emergency response plan, when it is prepared. In the event of a fire, there would be sufficient access for emergency vehicles to reach the Project site, as well as emergency evacuation access for residents. The Napa County Emergency Operations Plan does not include a vehicle evacuation plan, but in the event of a wildfire, City fire and police personnel would coordinate with Napa County to identify evacuation routes and set up temporary shelters for anyone asked to evacuate. Because the Proposed Project would not conflict with the Napa County Emergency Operations Plan and provides adequate access in the event of a wildfire; the impact is **less than significant.**

Mitigation Measures

None required.

3.8.5 Cumulative Impacts

The cumulative context for the analysis of potential hazardous materials impacts (including hazardous materials usage during construction, exposure to potentially contaminated soils) is generally site-specific, rather than cumulative in nature. 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 City. Therefore, these issues are not addressed in the cumulative impact analysis.

Hazardous materials incidents or accidents would also typically be site-specific and would involve accidental spills or inadvertent releases. The effects of such incidents, then, would not be additive to effects from other, similar incidents occurring elsewhere. 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, these issues are not addressed in the cumulative impact analysis.

The cumulative context for the use, handling, storage, and transport of hazardous materials is buildout of the City. This geographic scope is selected because (1) cumulative hazardous effects generally require proximity, and (2) City personnel are the first responders to hazardous accidents within the vicinity of the Project site.

3.8-5: Would the Proposed Project contribute to a cumulative increase in the potential exposure of people to sites where soil contamination could be present from past or current uses, or to hazards associated with the use and transport of hazardous materials? The Project's contribution would be less than considerable.

The Proposed Project, in conjunction with other past, present, and reasonably foreseeable future development within the City, could entail development of a site where past uses could have resulted in soil contamination, the potential exists for release of hazardous substances during construction. 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.)

The City's 1993 General Plan determined that the routine use and transport of hazardous materials, hazardous materials use near schools, emergency response, and wildfire hazards would be a potentially significant impact due to development on former agricultural, commercial, or industrial properties and potential exposure to contaminants from historic hazardous materials use and release (City of St. Helena 2010). However, the City's 2019 General Plan Draft EIR (City of St. Helena 2018) was reviewed and it concluded that the routine use and transport of hazardous materials, hazardous materials use near schools, emergency response, and wildfire hazards were less than significant based on the implementation of existing and applicable laws and regulations. Potentially significant impacts included the development on former agricultural, commercial, or industrial properties which may expose construction workers and future occupants or neighboring residents from historical hazardous materials and release; and new developments could affect groundwater or surface water resources through the use and disposal of hazardous materials. These potentially significant impacts identified within the General Plans would be less than significant through compliance with General Plan policies.

The Proposed Project, in combination with other development projects in the City, would not result in any cumulative significant effects. This assumption is based on the results of the Phase I ESA that stated impacts related to past use of pesticides on the Project site associated with former agricultural activities are minimal and do not necessitate any corrective action. However, although unlikely to be found in high concentrations, in order to further quantify any potential pesticide amounts, an on-site soil testing would be required. Therefore, it is extremely unlikely that any one individual outside of any particular project site construction zone would be exposed to maximum levels of construction-generated contaminated air emissions (if any) for the entire development period, even if controls were not in place.

Therefore, compliance with applicable hazardous materials management laws and regulations adopted at the federal, state, and local level would ensure the Proposed Project's contribution to cumulative impacts related to soil contamination related to Proposed Project construction effects would not be considerable and the Proposed Project would not contribute to a cumulative impact resulting in a **less-than-significant impact**.

Mitigation Measures

None required.

3.8.6 References

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3.9 HYDROLOGY AND WATER QUALITY

3.9.1 Introduction

This section evaluates the potential effects on hydrology and water quality associated with development of the proposed Hunter Subdivision Project (Proposed Project), including mitigation measures recommended to avoid or minimize significant impacts where feasible. The information provided describes the hydrology and water quality conditions of the Project site and surrounding area, as well as the applicable federal, state, and local regulations pertaining to protection of hydrology and water quality.

Comments received from the public in response to the Notice of Preparation included concerns about pesticide runoff impacts to the Napa River, flood hazards (e.g., Federal Emergency Management Agency [FEMA] zones and/or levee failure) and impacts to groundwater supplies. These issues are all addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information and analysis within this section is based on a review of site plans, City of St. Helena (City) planning documents, Napa County's Watershed Information & Conservation Council, as well as information from federal and state water resource agencies, including the FEMA, the U.S. Geological Survey, the California Department of Water Resources (DWR), the State Water Resources Control Board (SWRCB), and the San Francisco Regional Water Quality Control Board (RWQCB). In addition, this section is based in part on a groundwater basin analysis report for the Napa Valley Subbasin by Luhdorff & Scalmanni Consulting Engineers, a Hydrology Analysis for Hunter Subdivision, St. Helena, California, prepared for the Proposed Project by RSA Engineers and included as Appendix H, a Water Neutral Report included as Appendix J, and a peer-reviewed well capacity and sustainability analysis included as Appendix L.

3.9.2 Environmental Setting

This section describes the existing setting in the Project area and the built environment related to hydrology and water quality.

Regional Climate

Napa County has a Mediterranean climate with mild and relatively wet winters and dry warm summers. The average high temperature during the summer months (June through September) in Napa County ranges from 80ºF to 89ºF. Average low temperatures during the winter months (December through February) are 36ºF. The City has an annual rainfall of 34.61 inches (WRCC 2016). Snowfall in Napa County is common in some higher elevations, but the majority of precipitation falls as rainfall and any snow accumulation has a limited duration to a few days.

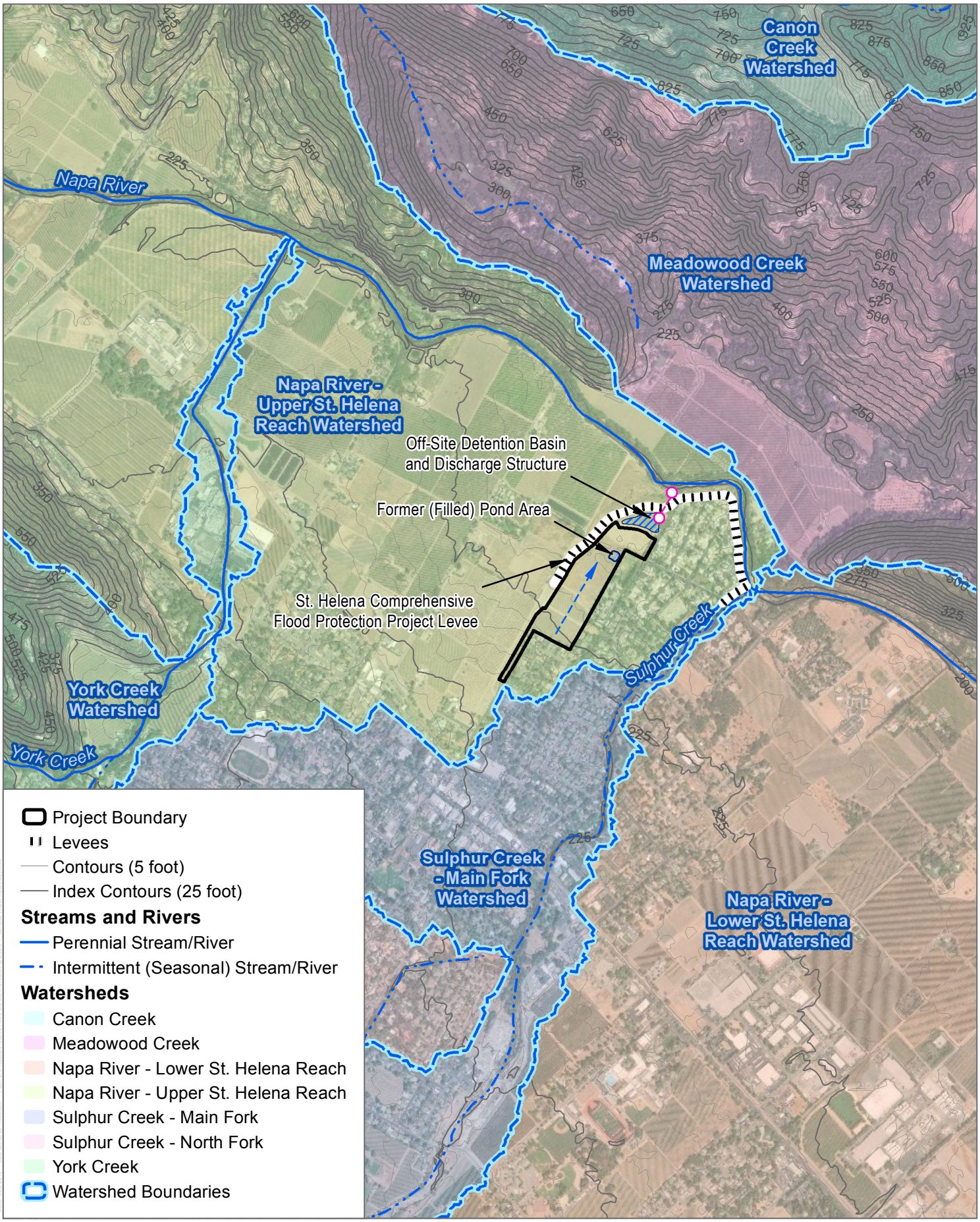
Watersheds and Hydrology

The Project site is located within the Napa River watershed. The watershed drains an area of approximately 426 square miles within Napa County and defines the western border of Napa County. The watershed's boundaries are marked by Mount St. Helena to the north (north of Calistoga); the Mayacamas Mountains to the west; Howell Mountain, Atlas Peak, and Mount George to the east; and the Napa-Sonoma Marsh to the south. The Napa River runs through the center of the watershed on the valley floor, draining numerous tributaries along a 55 mile stretch from the headwaters of Mt. St. Helena to the San Pablo Bay.

The northern edge of the Proposed Project site is located approximately 500 feet southwest of the Napa River, on a flat alluvial floodplain formed by the river and its tributaries. Important tributaries to the Napa River in the City include York Creek, which discharges into the Napa River approximately a one mile further upstream from the Project site, and Sulphur Creek, which discharges into the Napa River, approximately a quarter-mile further downstream. The County of Napa (County) has subdivided the Napa River watershed in numerous subwatersheds,[1] based on a high-resolution topography dataset completed in in 2002 (i.e., Light Detection and Ranging data processed by National Center for Airborne Laser mapping at UC Berkeley). These subwatersheds are shown in Figure 3.9-1, Surface Water Hydrology. The Proposed Project is located in the Napa River – Upper St. Helena Reach subwatershed, which is 1,985 acres in size and covers the portion of the Napa Valley floor northwest of the Pope Street bridge and south of the confluence of Canon Creek with the Napa River. Figure 3.9-1 also shows the Sulfur Creek and York Creek subwatersheds.

The Project site is relatively flat with a gentle slope towards its northwestern corner. As part of the City's Comprehensive Flood Protection Project (Flood Protection Project), described in more detail below), a levee was completed in 2011, just west and north of the Project site which separates the site and nearby residences from the Napa River (see Figure 3.9-1). Existing storm drainage infrastructure includes a detention basin on City-owned property adjacent to the northern boundary of the Project site, a bypass storm drain that routes stormwater collected in the City's conveyance system to a low-flow channel that discharges to the Napa River, and existing storm drains along Hunt Avenue and Del Rio Court. Based on existing topography shown on the Proposed Project's Tentative Map, drainage onsite occurs as sheet flow towards the north-northeast within the majority of the site, and to the northwest within the northern fifth of the site. Drainage is directed to a shallow swale at the northwestern corner of the site that connects to an offsite City detention basin.

[1] Napa County refers to the subdivision of the Napa Valley watershed as "basins." However, to avoid confusion with groundwater basins, these surface water basins are referred to herein as subwatersheds.



SOURCE: Bing Maps 2019, USGS 2019 (National Hydrography Dataset), City of St. Helena 2018

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0 500 1,000 Feet

FIGURE 3.9-1

Surface Water Hydrology

Hunter Subdivision Project

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The detention basin, which is on the inboard or southeastern side of the levee, is drained by a levee culvert that is designed, under low- to moderate-flow conditions, to discharge stormwater by gravity flow into the Napa River. During high flood events, the water level in the Napa River will rise to an elevation that prevents storm water from draining the residential area by gravity alone. During high flood elevation, the levee culvert gate is closed, routing stormwater into the detention basin. As water fills the basin, the pump station is activated and water is pumped from the basin into the Napa River. The pump station is equipped with a back-up diesel generator in case electricity fails during a storm event. The levee culvert and discharge structure is shown in Figure 3.9-1.

Flood Hazards

The Project site is located adjacent to the southside of the Napa River and just upstream of the confluence of the Napa River and Sulphur Creek. Numerous damaging floods have been recorded since 1862 on the Napa River. The 15 most recent serious floods along the Napa River occurred in 1942, 1943, 1955, 1962, 1963, 1965, 1967, 1973, 1978, 1982, 1983, 1986, 1995, 1997, 1998 and 2005. Prior to 2019, the last four major floods to affect the City's reach of the Napa River occurred in 1986, 1995, 1997, and 2005, with peak discharges estimated to be 20,000 cubic feet per second (cfs), 21,000 cfs, 16,000 cfs, and 18,000 cfs, respectively (City of St. Helena 2012). None of the floods in recent memory have reached the threshold for a 100-year flood event (Napa County 2013). During the December 2005 event, flood waters entered the Project site and backed up against a low cinder block wall on the north side of the road along Del Rio Court (the wall is oriented east to west). The peak water level for the Napa River in the portion that passes through the City reached 21.61 feet in 2005 and is estimated to have been a 25- to 50-year flood event (USGS 2006). More recently in February 2019, a flood event occurred where flood waters rose to just under one-foot of predicted levels. Flood waters were able to be contained and handled with improved Flood Control Projects along the Napa River within the City of Napa and St. Helena (Napa Valley Register 2019). The 2019 flood event recorded a discharge of 9,570 cfs and a river depth of 19.5 feet on the Napa River at the St. Helena gauge located roughly 150 feet downstream of the Pope Street bridge crossing (Napa County FCWCD 2019).

FEMA Special Flood Hazard Areas

Flood zones identified on FEMA Flood Insurance Rate Maps (FIRMs) are identified as a Special Flood Hazard Areas (SFHAs) and "other areas of flood hazard." A SFHA is defined as the area that would be inundated by a flood event having a 1% chance of being equaled or exceeded in any given year. The 1% annual-chance flood is also referred to as the base flood or 100-year flood, and is the national standard used by all federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development. "Regulatory floodways" are areas

within the SFHA that include the channel of a river/watercourse and adjacent land areas and are expected to have the deepest and highest velocity flooding. In an unobstructed condition, the regulatory floodway can discharge a 100-year flood/base flood without any increase in water surface elevations. The area outside the floodway, but still within the 100-year floodplain can be obstructed without increasing the base flood elevation by more than 1 foot at any point. FEMA considers "other areas of flood hazard" as including areas with a 0.2% annual chance of flooding (i.e., the 500-year flood zone), and areas with reduced risk due to a levee. SFHAs are considered high risk flood areas, whereas other areas of flood hazard are considered low- to moderate-risk areas.

St. Helena Comprehensive Flood Protection Project

After passage of Measure A in 1998, the City and the Napa County Flood Control and Water Conservation District initiated a joint study of potential flood protection projects for the City and nearby County areas. After much study, hydraulic analysis, environmental review, project redesign based on funding constraints, and public input, the scope and design of the City's Flood Protection Project was defined. The Flood Protection Project encompassed a one mile stretch of the Napa River from Adams Street to Pope Street. The goal of the project was to remove a large portion of the northeastern part of the City from the SFHA, and to enhance the hydrology of the river by returning the floodplain to a more natural state. The project included the following:

- A new levee and floodwall
- A floodwater storage area referred to as Terrace B
- Removal of 17 homes
- Rerouting of drainage along Starr Avenue into a new storm drain outside the new levee
- A design standard that provides flood protection from a 200-year event

This Flood Protection Project included the area north of the Project site. The project was designed and supervised by a private sector and public agency qualified engineers. These included the City, U.S. Army Corps of Engineers, several engineering consultants, the County, and FEMA.

In December 2005, the City began the permit application process to implement the Flood Protection Project. While the permitting work was underway, the City submitted a Conditional Letter of Map Revision application to FEMA. A Conditional Letter of Map Revision is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway and the effective SFHA. It indicates whether the project, if built as proposed, would be

recognized by FEMA. In a letter from FEMA, dated November 2007, it was determined that the submitted data of the project used to create a FIRM for the project area was sufficient and met the minimum floodplain management criteria (FEMA 2012).

Subsequently, construction on the Flood Protection Project started in May 2009. The major structural components of the Flood Protection Project were completed in April 2011; the main levee is shown in Figure 3.9-2, FEMA Flood Hazard Zones. In December 2011, the City submitted an application for a Letter of Map Revision (LOMR) from FEMA. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway or the SFHA. A LOMR officially revises the FIRM or Flood Boundary and Floodway Map, and sometimes the Flood Insurance Study report, and when appropriate, includes a description of the modifications. Once a complete LOMR application is submitted, FEMA has 90 days to review the application and issue the LOMR. FEMA completed its review of the LOMR and officially revised the FIRM to remove the Project site from being within the SFHA. The effective date of the revised FIRM is November 5, 2012 (FEMA 2012).

On-Site Flood Hazards

As shown in Figure 3.9-2 and for the reasons described above, the Project site is not within a SFHA, but is mapped as being in an area with reduced flood risk due to a levee (FEMA 2012). The base flood elevation for the Napa River in the vicinity of the Project site is 220 feet above mean seal level (amsl), whereas the top of the levee is at least 222 feet amsl. The levee transitions to a flood wall adjacent to the Vineyard Valley mobile home park to the south/southeast of the Project site that provides for the same level of protection. The base flood elevation in the vicinity of the stream gauge used for measuring the discharge and height of the Napa River, which is located downstream of the Pope Street bridge, is 216 feet amsl (FEMA 2012; Napa County FCWCD 2019).

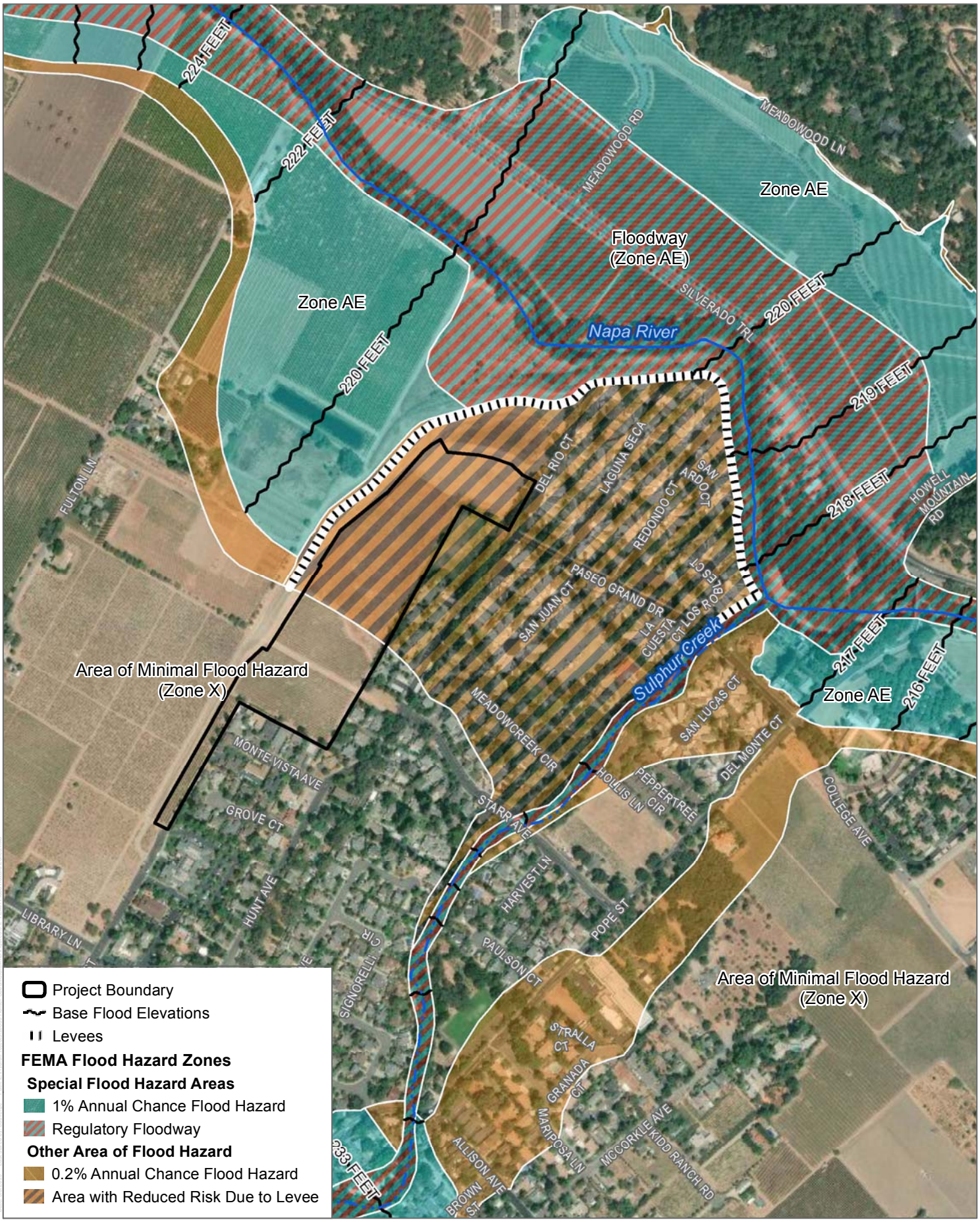
FEMA does not have a mapping category for a 200-year flood, but maps areas with a 0.2% annual chance of flooding (i.e., the 500-year flood zone) along with areas of reduced risk due to levee as “other areas of flood hazard.” By being within an area of reduced risk due to levee, the Project site is considered mapped within the 500-year flood zone (FEMA 2012). Based on the levee design, the Project site would be subject to a flood exceeding a 200-year recurrence interval, equivalent to less than a 0.5% annual chance. During such a flood, the style of flooding onsite would be slow and gradual, since the high velocity flows remain limited to the regulatory floodway. No portion of the Project site is located within the FEMA regulatory floodway. Since the FEMA FIRM has been officially revised through a LOMR, the Project site is not subject to any floodplain development restrictions (FEMA 2012).

Flooding Due to Levee Failure or 200-Year Flood Event

The Napa River is subject to significant floods, but the Project site is protected by a recently built levee that is designed to provide a 200-year level of flood protection. The Proposed Project does not include any element that exacerbates existing flood hazards for offsite properties or the general public (i.e., through floodplain encroachment that blocks or redirects flood flows, or by placing habitable structures in areas with a reasonable risk of flooding). Because the Project site is outside of a FEMA SFHA, no flood insurance would be required. However, because there remains residual risk of flooding from catastrophically large floods (such as a 500-year flood) or levee failures, residents in flood-prone areas, even if outside of a regulatory flood zone, have the option to purchase optional flood insurance (i.e., FEMA preferred risk policy).

When levees and floodwalls are used for flood protection, particularly when they protect land uses sensitive to flooding (e.g., residences), overtopping of the levee or floodwall is a source of public concern. The City's Flood Protection Project, specifically the levee and floodwall along the Napa River and Sulphur Creek, was constructed to provide protection from a 200-year flood event while maintaining an adequate amount of freeboard. The standard design level of protection is for the 100-year flood event; however, the 200-year design basis was implemented to provide an additional factor of safety and to account for potential settlement, changes in channel roughness, and potential channel aggradation. The elevated height of the levee and floodwall (i.e., a 200-year level of protection vs. a 100-year level of protection) along with the freeboard further reduces the potential for overtopping of the levee or floodwall during extreme flood events. The flood control system was also evaluated for stability during a seismic event and was found to be stable (Mead & Hunt, MBK Engineers, and Kleinfelder 2006).

The levee constructed as part of the Flood Protection Project was designed and constructed in accordance with all applicable U.S. Army Corps of Engineers Engineering Manuals and has been reviewed by FEMA. Geotechnical investigations and hydraulic analysis were performed to provide a basis for the design. The flood control facility design was prepared by the City's engineering team and stamped by the primary designer Mead & Hunt. Design considerations included the post- Proposed-Project channel hydraulics and stability. The flood control facilities are operated and maintained by the City in accordance with an operation and maintenance manual approved by FEMA, and in accordance with U.S. Army Corps of Engineers standards. This includes requirements for annual inspections and patrols during flood events. Specifically, levee maintenance consists of bi-annual (spring & fall) levee side mowing and levee embankment inspection prior to the rainy season, immediately following a high-water event, and at intervals not exceeding three months (City of St. Helena 2012). The purpose of the inspections are to verify that no unusual settlement or loss of material is occurring, that there are no areas of seepage or boils, that no animal burrows are encroaching upon the levee section, that toe drainage ditches are flowing properly, and that access roads are properly maintained and are graded to drain. Measure A, the local ½ cent flood protection sales tax, has established a fund dedicated to funding future maintenance.



SOURCE: Bing Maps 2019, FEMA 2012

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0 250 500 Feet

FIGURE 3.9-2

FEMA Flood Hazard Zones

Hunter Subdivision Project

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In addition, the same existing measures implemented to respond to flood emergencies within the region would continue to be used and would serve to provide residents with the means to avoid personal harm in the event of a catastrophic flood. This includes flood watches, advisories, and warnings from the National Weather Service, reporting by local news outlets, announcements and communications via Integrated Public Alert and Warning System, text alerts, and other means of communication that would be increasingly used in the event of a severe flood threat (Napa County 2013).

The Napa County Office of Emergency Services releases informational brochures and updates regarding flood preparedness throughout the year and prior to the rainy seasons. The County also has an application (NIXLE) for smartphones (android and apple) so residents within the County can download and receive emergency information during extreme weather events. The Napa Valley Regional Rainfall and Stream Monitoring System's website (https://napa.onerain.com/home.php) also has Napa County real-time rainfall and river-stream data available for the public to use during inclement weather. Updates are posted by the Napa County Flood Control and Water Conservation District through a serious of interactive web applications to show river and stream flow, and Napa River Flood Forecasts. During extreme weather, these applications and emergency resources, in addition to emergency broadcasts systems, are designed to give ample warning to residents and business owners of flood hazards and to help them prepare for evacuations.

When a flood hazard is imminent or occurring, the local police get involved in assisting with evacuations as necessary. Table 3.9-1 provides a reference for Napa River's flood stages along with the National Weather Service alerts that the National Weather Service field office releases to partner agencies and the press. The table is meant to illustrate the levels of warning received and the general types of alerts issued or actions taken. For reference, the 2019 flood approached, but did not exceed the moderate flood stage, and the 2005 flood approached, but did not exceed the major flood stage. Because every flood event is different, preparedness and response actions may differ, and are the responsibility of local, county and state offices of emergency management.

Table 3.9-1
Napa River Flood Stages at St. Helena (at Pope Street Bridge)

Flood Category	River Stage[1]	National Weather Service Alerts and/or County OES/Emergency Response Actions	Proposed Project Impact
Action / Monitor Stage	16 feet (207.71 feet amsl)	The Monterey field office of the National Weather Service may issue a Flood Watch-based products to cover Napa Valley regional flood potential at this stage. Advisory products released to the press.	None

Table 3.9-1
Napa River Flood Stages at St. Helena (at Pope Street Bridge)

Flood Category	River Stage[1]	National Weather Service Alerts and/or County OES/Emergency Response Actions	Proposed Project Impact
Minor	18 feet (209.71 feet amsl)	Minor flooding of low-lying agricultural areas along river begins. Low lying rural residential areas immediately adjacent to the river and some secondary roads affected. Voluntary evacuation orders are issued. Mandatory evacuations considered.	None
Moderate	20 feet (211.71 feet amsl)	Moderate flooding of the lower portions of Silverado Trail along the reach. Inundation of low-lying residential areas along the east river bank in the vicinity of Pope Street Bridge. Secondary and many primary roads inundated; most major cross roads inundated and unsafe to pass. Evacuation orders enforced and potentially expanded. Rescue operations initiated if necessary.	None
Major	22 feet (213.71 feet amsl)	Major flooding throughout the upper Napa Valley with many roads adjacent to Napa River inundated, making travel extremely difficult and unsafe. Evacuation, emergency response and rescue operations continue.	None
Catastrophic (100-Year Flood)	24.29 (216 feet amsl)	Places within FEMA SFHAs become inundated.	Residents advised/ordered to evacuate.
200+ Year Flood and/or levee failure	> 24.29 (218 feet amsl)	Evacuation, emergency response and rescue operations continue.	Property flood damage likely.

Sources: Napa County 2013, Napa County FCWCD 2019, NWS 2019.
Note: Elevation in feet (amsl)

The modern design and construction of the levee, along with the City's ongoing inspection and maintenance of the levee paid for through local sales taxes, substantially reduces its potential to fail in a 200-year flood or in the event of an earthquake. Furthermore, in highly unlikely catastrophic situations (< a 0.5% annual chance) where the levee may be overtopped or in a 200+ year flood event, Proposed Project residents would have ample warning to evacuate prior to flooding. Based on a comparison of the base flood elevation to proposed lot pad elevations, flooding of Proposed Project lots would range between 0 and 5 feet in depth, with the deepest flooding occurring on the northern part of the Project site. This level of flooding would leave upper floors or residences available for refuge. Because of this, the risks from a 200+ year flood and/or levee failure are limited to property damage rather than risk of life. As previously indicated, this would be an impact of the pre-existing environment on the Proposed Project rather than the Proposed Project's impact on the environment.

Finally, no portion of the Project site is located within an area that would be subject to flooding due to a dam failure. As shown in the St. Helena 2019 General Plan, Draft Environmental Impact Report (EIR), the northern portion of the Project site is mapped as being within the dam failure hazard zone for the Bell Canyon Dam (City of St. Helena 2018). However, the portion of this dam inundation

zone where the Project site is located is outdated. The dam inundation flood zone is less extensive than the former SFHA as it existed prior to completion of the Flood Protection Project. Therefore, the levee, which was designed to protect against a 200-year flood, would also protect the site against the threat of inundation from failure of the Bell Canyon Dam.

Sea Level Rise, Tsunami Inundation, and Seiche

The Project site is not subject to sea level rise, tsunami inundation and/or seiche wave. The preconditions necessary for a project to be at risk of such hazards is that it be located within a reasonable distance and elevation relative to a coastline (for sea level rise or seiche) or large body of water (for seiche waves). The Project site is located over 200 feet amsl in elevation and not next to a large water body subject to seiche.

Groundwater Resources

Groundwater Basin Status

The Project site is located within the Napa Valley Subbasin (DWR Basin No. 2-002.01, Subbasin) of the Napa-Sonoma Valley Groundwater Basin as designated by the State DWR (DWR 2019a). Napa County further subdivides the Subbasin into groundwater subareas. The Project site is located within the Napa Valley Floor St. Helena subarea (LSCE 2016). In accordance with eight components in the California Water Code Section 10933(b), DWR is required to prioritize[2] all of the groundwater basins across California in order to determine which provisions of the California Sustainable Groundwater Management Act (SGMA) apply to the basins. The latest phase of DWR's basin re-prioritization (completed in December 2019) the Napa Valley Subbasin was changed from a medium to a high priority ranking (DWR 2019a). The increase in priority designation for the Napa Valley Subbasin in 2019 was due primarily to revised projections of future population for the Subbasin, an increased assessment of the total number of wells, and a revised approach to evaluating water quality in the Subbasin compared to the previous prioritization analysis performed in 2014. The change from medium priority to high priority does not affect applicable SGMA requirements for the Napa Valley Subbasin.

An extensive analysis of the groundwater Subbasin associated with compliance with SGMA (discussed further below) examined basin conditions, established sustainability goals, and developed minimum thresholds and measurable objectives necessary to track progress towards those goals. One of the central components of SGMA is the definition of six groundwater sustainability indicators, that if found to be causing significant and unreasonable effects throughout the Subbasin, would indicate that the basin is not being managed sustainably. The

[2] DWR's priority rating is based on estimates of population density, anticipated growth, well density, the amount of irrigated agriculture, the degree to which water demands are met from wells (versus surface water), and the existence of documented impacts (e.g., overdraft) (DWR 2014).

sustainability indicators are (1) chronic lowering of groundwater levels, (2) reduction in groundwater storage, (3) seawater intrusion, (4) degraded water quality, (5) land subsidence, and (6) depletions of interconnected surface water.

Based on an extensive analysis of historical monitoring data on groundwater levels, groundwater in storage, groundwater quality, and interconnections between groundwater and surface water, there have been no basin-wide significant and unreasonable effects with regard to chronic lowering of groundwater levels, reduction in groundwater storage, seawater intrusion, degraded water quality, and land subsidence (LSCE 2016). The basin analysis report found that groundwater levels in the Napa Valley have been stable over the hydrologic base period (1988-2015), and the prior historical period where data are available, with recognition that groundwater levels in some areas have been lower during dry water year types (LSCE 2016). A sustainable yield analysis was conducted which established that the maximum amount of water that can be withdrawn annually from the Subbasin groundwater supply without causing an undesirable result ranges between 17,000 and 20,000 acre-feet per year (AFY) (LSCE 2016). From 1988 through 2018, the cumulative annual storage changes in the Napa Valley Subbasin were 4,388 acre-feet, reflecting a basin in balance and the absence of long-term depletions of groundwater storage within the Subbasin (LSCE 2021). The 2020 annual report updated the total amount in storage of the Napa Valley Subbasin to 196,651 acre-feet which is a decrease from the year prior due to a very dry year; however, the report concluded that the basin continues to be managed sustainably despite the most recent fluctuation (LSCE 2021).

Overall, the groundwater table in the alluvial aquifer of the Subbasin is quite shallow; groundwater elevations in the center of the valley fluctuate seasonally approximately 10 to 25 feet, and near the edge of the valley fluctuate approximately 25 to 35 feet (LCSE 2016). The basin analysis report found that the magnitude of the surface water components, particularly inflows from uplands runoff and surface water outflow as well as groundwater baseflow, demonstrate that large quantities of water move through the Subbasin in most years as compared to the amounts of water pumped from the Subbasin or flowing out of the Subbasin as subsurface outflow (LCSE 2016). As a result, sustainability indicators have been set to provide minimum thresholds and measurable objectives for a number of indicator wells throughout the basin with the purpose of maintaining existing conditions with regard to sustainability of the Subbasin. These groundwater level thresholds are also used as measures to provide protection of other undesirable results defined by SGMA.

Napa County releases annual reports that provide an update on basin conditions and makes recommendations necessary to continue to maintain and improve sustainable management. The most recent annual report finds that most of the groundwater levels in the wells measured have remained above minimum thresholds, however seven wells did record groundwater levels below their minimum thresholds including a well near the Project site (see discussion below).

However, these thresholds are monitored for evidence of chronic declines and not necessarily as an isolated exceedance, as the annual report still determined that the Subbasin has continued to be managed sustainably through 2020 (LSCE 2021).

Local Groundwater Uses and Users

The Project site contains an inactive groundwater well adjacent to proposed Lot 19 in the northern portion of the property identified as Parcel B (see Figure 2-4, Proposed Tentative Map, in Chapter 2, Project Description). This well may have been historically used to provide construction water for the earth moving activities associated with the City's Flood Protection Project and may have been used in the past for agricultural irrigation. The existing condition of the well is considered inactive; however, as it was not being used at the time the Notice of Preparation was released. The Phase I Environmental Site Assessment completed for the Proposed Project noted that the well was inoperable at the time of the site visit (Appendix G).

Table 3.9-2 shows well completion report records available for each township and range section that intersects the Project site, including information on the number and type of wells with records, and their average depth (and range of depths). The well types predominantly consist of domestic and irrigation supply wells but include several municipal/public supply wells. Table 3.9-2 shows that average well depths for domestic wells tend to be shallower than irrigation and municipal supply wells; this tendency exists because agricultural and especially municipal supply wells require higher yields. The locations of well completion reports are shown in Figure 3.9-3, Napa Valley Groundwater Subbasin, although many well records exist which have not yet been mapped by DWR, or only been mapped to the centroid of the township and range section within which the well is located. Furthermore, the existence of a well completion report does not indicate whether or not the well is currently active.

Based on review of the well completion report records, there are numerous domestic and irrigation wells located on the northeastern side of the Napa River, as well to the north and west of the Project site whose locations are not shown in Figure 3.9-3 (DWR 2019b). The primary municipal use of groundwater is for the City, which occurs from two wells on the south side of Stonebridge Park (Stonebridge Complex wells) completed at depths of 410 and 670 feet below ground surface (bgs) (Figure 3.9-3). As opposed to rural residential and agricultural uses, who draw from wells distributed throughout the Subbasin, the groundwater portion of the urban water demand for the City's whole water service area is drawn from the two City wells at the Stonebridge Complex.

Table 3.9-2
Well Completion Report Records on the Project Site and Vicinity

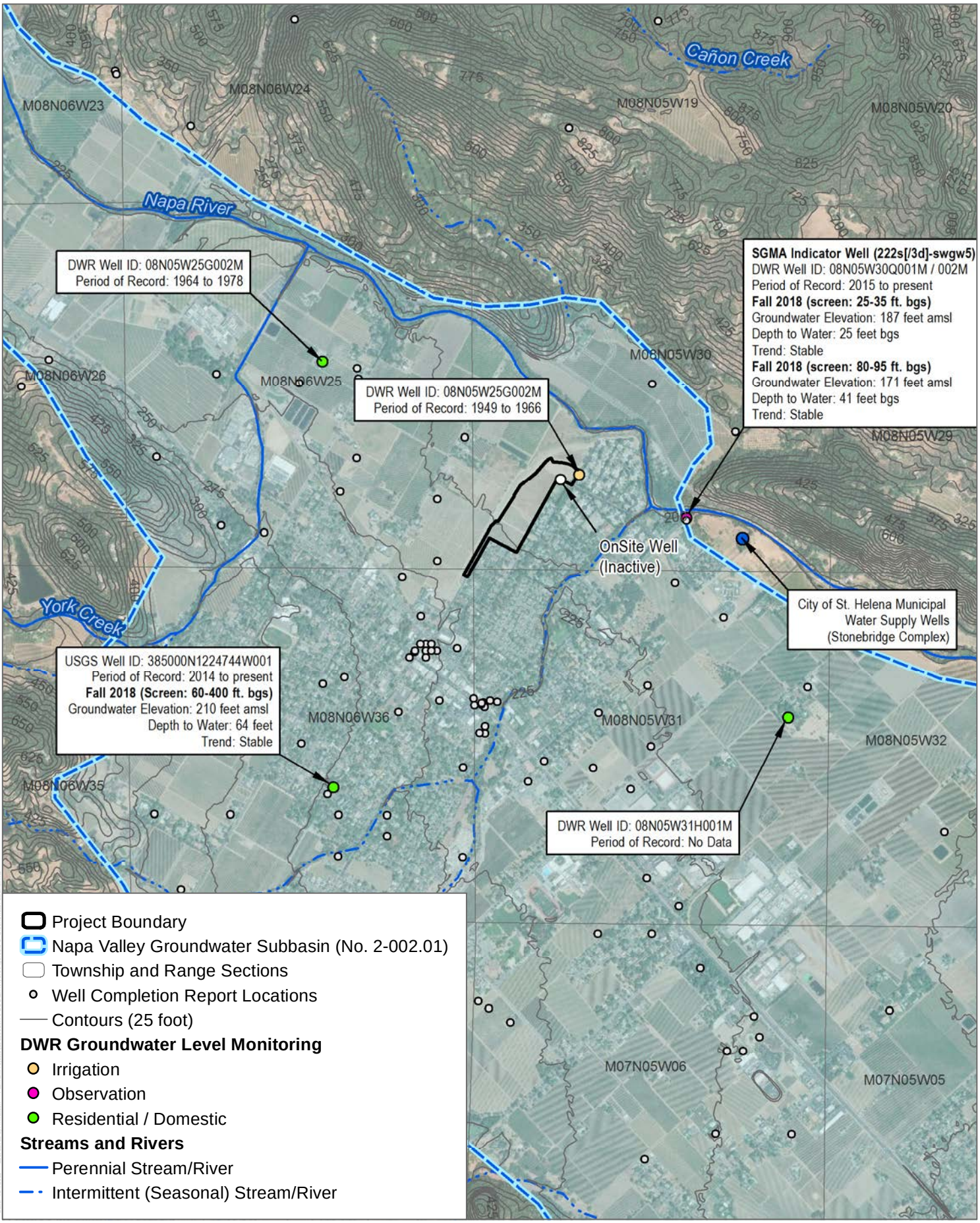
Township & Range Section	Domestic Well Count	Average Well Depth, in Feet (Range)	Production / Irrigation Well Count	Average Well Depth, in Feet (Range)	Municipal / Public Well Count	Average Well Depth, in Feet (Range)	Average Well Yield, in GPM (Range)[1]
T08NR06W25	19	280 (120 – 460)	18	390 (160 – 780)	2	670 (560 – 780)	96 (7- 500)
T08NR05W30	18	351 (100 – 860)	14	376 (247 – 580)	2	360 (285 – 435)	147 (8 – 1,000)
T08NR05W31	12	307 (165 – 450)	23	423 (195 – 820)	5	437 (232 – 600)	68 (10 – 250)
T08NR06W36	26	349 (120 – 780)	34	367 (55 – 610)	0	N/A	39 (2 – 250)

Source: DWR 2019a.
Notes: GPM = gallons per minute
[1] Well yields are only reported for a subset of well completion reports in the database, and all types of wells (i.e., domestic, agricultural and municipal wells). Actual yield depends on well construction details, well use/purpose, and pumping equipment installed at the time of well log submittal.

Local Groundwater Levels

DWR well completion reports and the DWR SGMA data viewer were reviewed for groundwater level information pertaining to the Project site and its vicinity (DWR 2019b-c). Groundwater level monitoring sites are shown in Figure 3.9-3, and includes two locations where groundwater levels are currently monitored, including a dual-completion monitoring well near the Pope Street crossing of the Napa River (Well ID 222s-swgw5 and 223d-swgw5), and a well on the southern side of the City (DWR 2021). Other monitoring sites have historical data or no data. The dual-completion monitoring well is one of the many representative monitoring sites throughout the Subbasin that are used to track compliance with minimum thresholds and measurable objective established under SGMA.

The Project site's proximity to the Napa River means that groundwater levels on-site are likely to be relatively shallow but may seasonally lower during the late summer and fall. Groundwater levels measured in the shallow screen of a dual-completion monitoring well (Napa River at Pope Street) have fluctuated between 18 and 25 feet bgs between 2015 and 2020 (shallow screen). The latest available groundwater level reading in Spring 2020 was 20 feet bgs (192 feet amsl) for the shallow screen and 24 feet bgs (188 feet amsl) for the deep screen (DWR 2021). However, the Fall 2020 groundwater level measurement was 61 feet bgs (156 feet amsl) which is below the threshold of 164 amsl. These groundwater levels reflect seasonal peaks and also indicate that 2020 was a very dry year, but generally the seasonal highs and lows have remained fairly stable throughout the well's period of record (2015 to 2020). Based on the groundwater contour maps prepared for the 2020 annual groundwater report, the direction of groundwater flow in the vicinity of the City is to the east and south, to varying degrees based on the time of year (LSCE 2021).



SOURCE: Bing Maps 2019, USGS 2019 (National Hydrography Dataset), DWR 2019

DUDEK

0 900 1,800 Feet

FIGURE 3.9-3

Napa Valley Groundwater Subbasin

Hunter Subdivision Project

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The Subbasin monitoring well may be within the pumping influence zone of the Stonebridge Complex wells, which supplies the entire City with up to 20% of its water demand in average years, and up to 30% in dry years (City of St. Helena 2018). Between 2006 and 2019, annual groundwater pumping at these two wells has averaged 350 AFY, ranging from a low of 182 acre-feet in 2012 to a high of 526 acre-feet in 2013 (LSCE 2016, 2020). As shown in Figure 3.9-3, the City's Stonebridge Complex is located approximately 0.5 miles southwest of the Proposed Project's on-site well, and approximately 600 feet from the Subbasin monitoring well.

Given the proximity and similar setting, groundwater levels are expected to be similar or possibly shallower beneath the Project site. According to the findings of the well capacity and sustainability report (Appendix L), the existing agricultural well on the site (proposed to be located in Parcel B on the tentative map) was constructed in 1976 to a depth of 410 feet bgs; with a yield of 350 gallons per minute (gpm). The screened portions of the well are from 80 feet bgs to the total depth of the well at 410 feet bgs. Groundwater was first encountered during drilling for the initial installation of the well at a depth of 24 feet bgs (Appendix L). At the time of the recent well capacity and sustainability test for the onsite well, the groundwater level was at 22 feet bgs. It is anticipated this well would be used to irrigate all on-site (public and private) landscape areas, which includes the existing vineyard in the panhandle portion of the site, lawns, and sidewalk planting strips.

Water Quality

Water quality in surface and groundwater bodies is regulated by the SWRCB and RWQCBs. The Project site is under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (San Francisco RWQCB), which is responsible for the implementation of state and federal water quality protection statutes, regulations, and policies in the vicinity of the Project site. The San Francisco RWQCB implements the Water Quality Control Plan (Basin Plan), a master policy document for managing water quality in the region (San Francisco RWQCB 2017).

As previously mentioned, runoff from the Project site would be directed to the off-site detention basin adjacent to the Napa River. Therefore, under normal circumstances, runoff from the Proposed Project would either be lost to evaporation or percolate into the underlying groundwater table. Under extreme flood scenarios, surface water would be discharged to the Napa River once the capacity of the City's off-site detention basin is reached. Therefore, the receiving waters for the purpose of water quality consist of both groundwater and the Napa River.

Surface Water Quality

The water quality of the Napa River is highly variable and changes significantly depending on the specific reach of the river, the time of year, and the level of flow existing at any one time.

General water quality indicators (e.g., pH, DO, temperature, specific conductance) within the Napa River generally decline as flows recede in late summer, and reach seasonal lows just before the first rains of the season. On April 6, 2018, the U.S. Environmental Protection Agency (EPA) approved California's 2014–2016 List of Impaired Waters which replaces the previous 2012 California Clean Water Act (CWA) Section 303(d) List as California's current 303(d) List (SWRCB 2019). The Napa River is included on the CWA Section 303(d) list of water quality limited segments due to impairment[3] from nutrients, pathogens, and sedimentation/siltation, further discussed below under "Regulatory Setting" (SWRCB 2019).

Total Maximum Daily Load (TMDL)[4] allocations have been developed for sediment and pathogens, but development of a TMDL for nutrients is in progress. The sediment and pathogen TMDLs has been completed by the San Francisco RWQCB and the TMDLs have been incorporated into the Basin Plan as an amendment (San Francisco Bay RWQCB 2017). The Basin Plan amendment includes water quality targets for pathogen indicators Escherichia coli (E. coli), fecal coliform, and total coliform, as well as density-based (load) limits for these pathogen indicators. The most common sources of pathogens are wastes from warm-blooded animals, including humans, livestock, domestic pets, and wildlife. Different types of land use have different run-off concentrations of nutrients, organic matter, and bacteria. Predominant land uses include agriculture, residential, commercial, industrial, mixed (variety of land uses), transportation, open space, forest, and wetlands; the loadings from agricultural activity are likely the most dominant. The Basin Plan amendment also includes waste load allocations for individual municipal dischargers including on-site sewage disposal systems, sanitary sewer systems, municipal stormwater runoff, grazing lands, and confined animal feeding operations (San Francisco Bay RWQCB 2017).

The San Francisco RWQCB also adopted a Basin Plan amendment incorporating a TMDL for sediment and a Habitat Enhancement Plan for the Napa River. The amendment includes numeric targets for spawning gravel permeability and streambed scour. The TMDL also includes load allocations (for non-point sources) for land areas upstream and downstream of dams, in addition to waste load allocations for urban runoff and wastewater discharges. This Basin Plan amendment was approved in November 2009. The Basin Plan finds that more than half of the sediment loads in the Napa River are from human processes, which include road construction, surface erosion from agricultural lands, and the hydromodification impacts of urban stormwater runoff (San Francisco Bay RWQCB 2017).

[3] Being impaired (also known as "water quality-limited") means that a water body is "not reasonably expected to attain or maintain water quality standards" without additional regulation.

[4] A TMDL specifies the maximum amount of a pollutant a water body can receive and still meet water quality standards.

In addition to the above, the City is subject to the TMDL for diazinon and pesticide-related toxicity applicable to all San Francisco Bay Area urban creeks, which was incorporated as a Basin Plan amendment in 2005 (San Francisco Bay RWQCB 2017). The TMDL imposes toxicity targets for urban creek water and sediment, and a diazinon concentration target for urban creeks. TMDL targets shall be achieved through regulatory programs, education and outreach, and research and monitoring. The TMDL attainment strategy will primarily focus on integrated pest management and the use of less toxic pest control methods. The EPA phased out urban diazinon applications at the end of 2004; however, replacements for diazinon (such as pyrethroids) may now pose potential water quality and sediment concerns.

The adopted TMDLs discussed above contain water quality standards in the form of waste load allocations that quantify the amount of pollutants that may be discharged into an impaired water body from various contributing sources, in addition to water quality objectives for receiving waters. This includes water quality standards for urban runoff (and wastewater discharges) with which the City must comply. One strategy used by local urban runoff management programs to move toward achieving TMDL standards is to identify the sources of TMDL pollutants in urban runoff and then to implement control measure programs for these pollutants.

In the urban parts of the City, potential contaminants of concern could include motor oil and other contaminants from vehicle parking on streets and driveways, as well as pesticides and fertilizers from vineyards and residential landscaping. Stormwater from the Project vicinity that does not percolate into the ground is collected within the City's storm drainage system and ultimately discharged into the Napa River. There are records of the use of agricultural pesticides at the Project site that have been applied to the vineyard. Records obtained from the Napa County Agricultural Commissioner's Office include the use of herbicides, fungicides and miticides (Appendix G). According to the aerial photograph review in Appendix G, the property was the site of an orchard in the 1940s which was removed by 1968. By 1973, vineyard cultivation appears in the southwest part of the site. When used properly in accordance to product labels, pesticides degrade with time and repeated irrigation and are minimally applied only where necessary. Nevertheless, the potential exists for residual contaminants within surface soils to become suspended and carried in stormwater runoff, and those contaminants can affect receiving waters and areas downstream.

Groundwater Quality

The Basin Plan establishes beneficial water uses for groundwater basins within the region. The Napa Valley groundwater subbasin underlies the Project site and is listed in the Basin Plan as providing the beneficial uses of municipal and domestic water supply (MUN), industrial process water supply, industrial service water supply (IND), and agricultural water supply (AG).

Groundwater quality throughout most of the Napa Valley region is generally suitable for most urban and agricultural uses, with only local impairments occurring. The primary constituents of concern are total dissolved solids, nitrate, boron, and organic compounds. The City's groundwater source (Stonebridge Complex wells) is treated to remove iron and manganese and are chlorinated prior to entering the City's distribution system.

The SGMA Basin Analysis Report completed by Napa County provides the following summary of groundwater quality conditions occurring throughout the Subbasin (LSCE 2016):

> Groundwater quality records from representative monitoring sites provide information on important constituents whose concentrations influence the quality of water for irrigation and human consumption. Despite a typical lack of historical groundwater quality records in Napa County, available data suggest that groundwater is generally of good quality throughout most subareas. Poor groundwater quality does, however, exist in the south and the north-central parts of the County. The poor groundwater quality includes concentrations of naturally occurring metals such as arsenic, iron, and manganese that exceed drinking water standards throughout the county. Naturally occurring elevated levels of boron are also prevalent in most subareas. Subareas south of the Napa Valley Floor, such as the Carneros and Napa River Marshes, have poor quality water due to naturally elevated levels of salinity and chloride. The Calistoga Subarea of the Napa Valley Floor also has poor quality water in many wells due to hydrothermal conditions resulting in higher concentrations of metals. Nitrate concentrations are not a concern throughout the county, but tend to be somewhat higher in agricultural areas in the Napa Valley Floor.

Water quality standard exceedances in the Subbasin were limited to the naturally occurring constituent arsenic, with 4 of 26 sites showing maximum concentrations above the arsenic maximum contaminant level of 10 µg/L, including one site within the St. Helena subarea (LSCE 2016). The groundwater quality testing attached to the Proposed Project's on-site well completion report indicated elevated levels of iron and manganese (DWR 1992). The City's two active groundwater wells are treated to maintain Title 22 standards, including chlorination prior to entering the City's distribution system (City of St. Helena 2018). Potable water supply is discussed in more detail in Section 3.13, Utilities and Service Systems.

3.9.3 Regulatory Setting

The regulatory framework related to hydrology and water quality is extensive, because it addresses issues related to the environment (i.e., maintaining high quality waters for water-dependent species and activities), public health (e.g., ensuring adequate drinking water quality),

and public safety (e.g., avoiding flood damage). Impacts pertaining to provision of potable and non-potable water supplies, including applicable regulations, are addressed in Section 3.13, Utilities and Service Systems.

Federal Regulations

Clean Water Act

The CWA (33 USC 1251 et seq.), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality. 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 for water quality standards, criteria, and guidelines. Under Section 303(d) of the CWA, the State of 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 TMDLs for each pollutant/stressor. A TMDL defines how much of a specific pollutant/stressor a given water body can tolerate and still meet relevant water quality standards. The impairments applicable to the Proposed Project's receiving waters are described in Section 3.9.2 (Water Quality).
- 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. The Project site does contain potentially jurisdictional wetlands, and this issue is addressed in Section 3.4 (Biological Resources).
- CWA Section 402 establishes the National Pollutant Discharge Elimination System (NPDES), a permitting system for the discharge of any pollutant (except for dredged or fill material) into waters of the United States. This permit program is administered by the SWRCB and the nine RWQCBs, who have several programs that implement individual and general permits related to construction activities, stormwater runoff quality, and various kinds of non-stormwater discharges. The City operated under the Small Municipal Separate Storm Sewer (MS4) Permit from the SWRCB and all projects in the City are required to comply with the MS4 Permit requirement that address stormwater runoff discharges to a water of the United States (i.e., the Napa River and the northern San Francisco Bay).
- CWA Section 404 establishes a permit program for the discharge of dredged or fill material into waters of the United States. This permit program is jointly administered by the U.S. Army Corps of Engineers and the EPA. The Project site does contain potentially jurisdictional wetlands, as addressed in Section 3.4 (Biological Resources).

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the EPA, the U.S. Army Corps of Engineers, 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, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA in California.

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: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) 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 (3) 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.

National Flood Insurance Program

The National Flood Insurance Act of 1968 established the National Flood Insurance Program to provide flood insurance within communities that were willing to adopt floodplain management programs to mitigate future flood losses. The National Flood Insurance Act also required the identification of all floodplain areas within the United States, and the establishment of flood-risk zones within those areas. FEMA is the primary agency responsible for administering programs and coordinating with communities to establish effective floodplain management standards. FEMA is responsible for preparing FIRMs that delineate the areas of known special flood hazards and their risk applicable to the community. The program encourages the adoption and enforcement by local communities of floodplain management ordinances that reduce flood risks. In support of the program, FEMA identifies flood hazard areas throughout the United States on FEMA flood hazard boundary maps.

State Regulations

Porter-Cologne Water Quality Control Act

The Porter–Cologne Act (codified in the California Water Code, Section 13000 et seq.) is the primary water quality control law for California. Whereas the CWA applies to all waters of the United States, the Porter–Cologne Act applies to waters of the state, which includes isolated wetlands and groundwater in addition to federal waters. It is implemented by the SWRCB and

the nine RWQCBs. In addition to other regulatory responsibilities, the RWQCBs have the authority to conduct, order, and oversee investigation and cleanup where discharges or threatened discharges of waste to waters of the state[5] could cause pollution or nuisance, including impacts to public health and the environment.

The act requires a "Report of Waste Discharge" for any discharge of waste (liquid, solid, or otherwise) to land or surface waters that may impair a beneficial use of surface or groundwater of the state. California Water Code Section 13260 subdivision (a) requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system 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 water (waters of the United States), an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., spoils disposal and storage), erosion from soil disturbance, or 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.

Water Quality Control Plan for the San Francisco Bay Basin

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 San Francisco Bay RWQCB is responsible for the protection of the beneficial uses of waters draining to the San Francisco Bay, including the Project site. The Water Quality Control Plan for the San Francisco Bay Basin (Region 2) (Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan (California Water Code Sections 13240–13247) (San Francisco Bay RWQCB 2017).

General NPDES Permits and WDRs

To enable efficient permitting under both the CWA and the Porter–Cologne Act, the SWRCB and the RWQCBs run permit programs that group similar types of activities that have similar threats to water quality. These "general permit" programs include the Phase II Small MS4 Permit, the construction general permit, the industrial general permit and other general permits for low-threat discharges. The construction stormwater program, the small MS4 permit program,

[5] "Waters of the state" are defined in the Porter–Cologne Act as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code, Section 13050(e)).

and the general permit for low-threat discharges are administered by the SWRCB, while other general WDRs are administered by the San Francisco Bay RWQCB. Table 3.9-3 lists the water-quality-related permits that would apply to the Proposed Project, each of which is further described below. General WDRs and/or NPDES permits contain effluent limitations that may be stricter than basin-wide water quality objectives, because they regulate specific categories of discharge and are designed to limit the cumulative effects of development over broad areas.

Table 3.9-3
State and Regional Water Quality-Related Permits and Approvals

Program/Activity	Order Number/ NPDES Number	Permit Name	Affected Area
Construction stormwater program	2009-0009-DWQ/ CAS000002, as amended	NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit)	Statewide
Phase II Small MS4 Program	SWRCB Water Quality Order 2013-0001-DWQ/ CAS000004, as amended	Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (Small MS4 Permit)	All Regulated Small MS4 systems; New Development and Redevelopment Projects within the City of St. Helena.
Temporary/low volume dewatering[1]	SWRCB Water Quality Order 2003-0003-DWQ	Statewide General Waste Discharge Requirements for Discharges to Land with a Low Threat to Water Quality	Statewide

Notes: NPDES = National Pollutant Discharge Elimination System; MS4 = municipal separate storm sewer system; WDR = Waste Discharge Requirement
[1] If any dewatering is required.
Source: Appendix H.

Construction General Permit (SWRCB Order 2009-0009-DWQ, as amended)

For stormwater discharges associated with construction activity in the State of California, the SWRCB has adopted the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) to avoid and minimize water quality impacts attributable to such activities. The Construction General Permit applies to all projects in which construction activity disturbs 1 acre or more of soil. Construction activity subject to this permit includes clearing, grading, and disturbances to the ground, such as stockpiling and excavation. The Construction General Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP), which would include and specify water quality BMPs designed to prevent pollutants from contacting stormwater and keep all products of erosion from moving off site into receiving waters. Routine inspection of all BMPs is required under the provisions of the Construction General Permit, and the SWPPP must be prepared and implemented by qualified individuals as defined by the SWRCB. The Proposed

Project applicant must submit a Notice of Intent to the SWRCB to be covered by a NPDES permit and prepare the SWPPP prior to the beginning of construction.

Various levels of soil disturbances associated with Proposed Project construction are anticipated to occur over the majority of the Project site, which is about 17 acres; therefore, the Proposed Project would require coverage under the Construction General Permit.

Phase II Small Municipal Separate Storm Sewer System Permit (SWRCB Order 2013-0001-DWQ, as amended)

As part of Phase II, the SWRCB adopted a statewide General Permit for the Discharge of Storm Water from Small MS4s (Water Quality Order No. 2013-0001-DWQ, General Permit No. CAS000004) (Small MS4 Permit) to provide permit coverage for smaller municipalities, including non-traditional small MS4s such as military bases, public campuses, and prison and hospital complexes. The Small MS4 Permit requires development and redevelopment projects to adhere to the Small MS4 Permit and follow published guidance for compliance.

Sustainable Groundwater Management Act

The Sustainable Groundwater Management Act (SGMA) is a package of three bills (Assembly Bill 1739, Senate Bill 1168, and Senate Bill 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The SGMA establishes standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, and priorities and timelines to achieve sustainable groundwater management within 20 years of adoption of a Groundwater Sustainability Plan (GSP). Central to the SGMA are the identification of critically over-drafted basins and the prioritization of groundwater basins, establishment of Groundwater Sustainability Agencies (GSAs), and preparation and implementation of GSPs for medium priority, high priority and critically overdrafted basins. GSAs must be formed by June 30, 2017. GSPs must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single GSP or multiple coordinated GSPs.

At the state level, DWR has the primary role in the implementation, administration, and oversight of the SGMA, with the SWRCB stepping in should a local agency be found to not be managing groundwater in a sustainable manner. DWR recently approved regulations and guidelines for implementation of the SGMA. Under SGMA, Section 10733.6, a local entity (or entities) can pursue an alternative to a GSP provided that certain sustainability objectives are met. An alternative to a GSP may include “[a]n analysis of basin conditions that demonstrates that the basin has operated within its sustainable yield over a period of at least 10 years” (Section 10733.6(b)(3)). In response to SGMA, Napa County prepared a Basin Analysis Report

for the Napa Valley Subbasin, per the requirements of Water Code Section 10733.6 (b)(3). While the Basin Analysis Report analyzes areas outside the Subbasin to determine how those areas affect recharge and runoff in the Subbasin, the areas outside the Subbasin are not subject to SGMA. The Basin Analysis Report (LSCE 2016c) was submitted to DWR on December 16, 2016 in compliance with SGMA. On November 13, 2019, DWR issued a final determination to not approve the Basin Analysis Report.

Basins in which the submitted alternative was not approved by the DWR must comply with the same planning deadlines applicable to other high- and medium-priority basins under SGMA. GSAs in these basins must submit a GSP by January 31, 2022. Following DWR's decision to not approve the Basin Analysis Report, the Napa County Board of Supervisors acted on December 17, 2019 to become a GSA for the Napa Valley Subbasin and declare their intent to develop a GSP for the Subbasin by January 31, 2022.

Local Regulations

City of St. Helena 1993 General Plan

The City's 1993 General Plan Public Health and Safety Element and Public Facilities Element has the following guiding policies that apply to flood hazards and storm drainage/flooding.

Flood Hazards

Policy 8.6.1: Prohibit the introduction of intensive urban development into designated Flood Hazard Areas.

Policy 8.6.3: Prohibit the construction of structures or flood barriers which would unnaturally divert flood waters or would increase flood hazards in other areas.

Policy 8.6.4: Require a grading permit for any filling, grading, or dredging that may increase potential for flood damage.

Policy 8.6.7: Encourage the use of Flood Hazard Areas within new development areas for open space and recreation uses, including parks and greenbelts.

Policy 8.6.8: Ensure that any new development that is allowed within the floodplain is constructed so that the lowest floor elevation is at least one foot above the l00-year flood level.

Storm Drainage/Flooding

Policy 9.4.1: New development should provide adequate drainage improvements to handle generated storm runoff from the site to the nearest major watershed. The watersheds include York Creek, Sulphur Creek and the Napa River.

Policy 9.4.2: If a City storm drain is available, the developer should participate in the funding to the extent it benefits the development.

Policy 9.4.3: Extension of existing downstream drains which have adequate capacity should be completed at the developer's expense with future reimbursement for oversizing costs at the time of connection by others.

Policy 9.4.4: Grading and earth filling within the designated l00-year floodway should not be permitted except for public streets or bridges.

Policy 9.4.5: Encroachments into the 100-year floodway should not result in any increase in flood levels during the occurrence of the base flood discharge.

Policy 9.4.6: Standards for subdivisions should include the following:

a. All preliminary subdivision proposals shall identify the flood hazard area and the elevation of the base flood.
b. All final subdivision plans will provide the elevation of proposed structure(s) and pads. If the site is filled above the base flood, the final pad elevation shall be certified by a registered civil engineer or surveyor and provided to the floodplain administrator.
c. All subdivision proposals shall be consistent with the need to minimize flood damage.
d. All subdivision proposals shall have public utilities and facilities such as sewer, gas, electrical and water systems located and constructed to minimize flood damage.
e. All subdivisions shall provide adequate drainage to reduce exposure to flood hazards.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The City's 2019 General Plan Public Health and Safety Element and Public Facilities Element has the following guiding policies that apply to flood hazards and storm drainage/flooding.

Flood Hazards/Drainage

Policy PS5.1: Minimize the risk to people, property and the environment caused by flooding hazards. Site new development to minimize potential damage from a 100-year flood.

Continue to require that any new development is constructed FEMA standards. Prohibit the siting of uses within Flood Hazard Areas inconsistent with FEMA standards that could result in health and safety hazards, including those due to the release of chemicals or other substances as a result of inundation or erosion. Ensure that any new flood protection projects comply with federal and State standards.

Policy PS5.6: Coordinate with the Napa County Flood Control and Water Conservation District and other responsible agencies to maintain protocols and funding for the regular inspection and maintenance of flood control facilities in the city, including levees, floodwalls, floodplain terracing, stormwater detention ponds, and pumping facilities.

Policy PF3.1: Ensure that new developments provide adequate drainage improvements and detention to mitigate flooding from increased stormwater runoff attributable to the development.

Policy PF3.C: Consistent with Municipal Code Section 16.32.170, continue to prohibit the creation of new residential lots that will be subject to periodic inundation from floodwaters. New development proposals on existing lots of record must identify flood hazard areas and mitigate all impacts to base flood levels and potential flood damage from grading filling and construction through proper drainage, construction, and location of utilities, in accordance with FEMA requirements.

Policy PF3.E: At the time of development review, require that post-project runoff be limited to pre-project peak flow rates for the five-year and ten-year storms as a condition of approval (See also Climate Change Element, Topic Area 4).

Groundwater

Policy PF1.D: The City of St. Helena should not draw or sell any groundwater beyond that currently allowed until a safe yield of the groundwater system has been identified through a study of the North Main Basin Aquifer by a qualified hydro geologist.

Policy PF1.E: Permit no new development relying on groundwater unless and until it is determined that the incremental production of ground water to support the development will not adversely impact the water production capability of the aquifer supporting the City wells.

Policy PF1.F Track the drilling of new private wells in and around St. Helena and, if so recommended by the qualified hydrologist hired by the City's water system, request that the County impose a moratorium on new well drilling if needed to protect the production capability of the City wells.

St. Helena Municipal Code

The City's Municipal Code, "Public Services," includes Chapter 13.32, which contains the City's Stormwater and Runoff Pollution Control Ordinance. This ordinance empowers the City's Public Works Department to enforce stormwater pollution regulations, including:

- Prohibiting illicit discharges to the stormwater conveyance system;
- Establishing minimum requirements for stormwater management, including source control requirements, to prevent and reduce pollution;
- Establishing requirements for development project site design to reduce stormwater pollution and erosion;
- Establishing requirements for the management of stormwater flows from development projects, both to prevent erosion and to protect and enhance existing water-dependent habitats; and
- Establishing standards for the use of off-site facilities for stormwater management to supplement on-site practices at new development sites.

Title 15, Buildings and Construction, includes Chapter 15.52, Flood Damage Protection. This chapter contains the City's flood damage control provisions. It includes standards for permitting and construction within established flood hazard zones, and gives the City Engineer the authority to administer, implement, and enforce floodplain management regulations through the review and approval of development applications. Chapter 15.52 specifies that all "new construction and substantial improvement of any residential structure shall have the lowest floor, including basement in AE, AH and Al -A30 Zones, elevated to 18 inches above the base flood elevation."

Title 16, "Subdivisions," includes Chapter 16.32, Design Standards and Improvements includes Section 16.32.070, Drainage, which requires stormwater runoff from subdivisions to be collected and conveyed by an approved storm drainage system. The storm drainage system shall be designed by a registered civil engineer for ultimate development of the watershed and shall be capable of collecting and conveying runoff generated by the ten-year flood. The system shall provide for the protection of abutting and off-site properties that may be adversely affected by any increase in runoff attributed to the development; off-site storm drain improvements may be required to satisfy this requirement. In addition, retention ponds, drainage swales and/or check dams may be required to reduce off-site peak storm flow generated by projects to the historic flow.

Title 17, Zoning, includes Section 17.88.030, Subdivisions, which requires that all subdivision proposals and other proposed new developments be reviewed by the City engineer to assure that (1) all such proposals are consistent with the need to minimize flood damage; (2) all public utilities and facilities, such as sewer, gas, electrical and water systems are located, elevated,

and constructed to minimize or eliminate flood damage; and (3) adequate drainage is provided so as to reduce exposure to flood hazards.

Section 17.88.050, FEMA Requirement, which requires that new construction or replacement of existing construction be in conformance with the standards and regulations of the FEMA.

City Stormwater Management Standards

The City has developed stormwater management standards that apply to discretionary and ministerial projects submitting an application for a use permit, building permit, and/or grading permit. The standards include both a construction and post-construction phase review and permitting process implemented by the City's Public Works Department. If a project is subject to construction-phase requirements, the applicant must prepare an Erosion Control Plan for sites of less than 1 acre and a SWPPP for sites of 1 acre or more. The plans must depict BMPs that will be implemented during construction to eliminate or minimize the discharge of pollutants.

The City's Public Works Department conducts site inspections to evaluate the effectiveness of the construction-phase BMPs using the following performance standards:

- No measurable increase of pollution (including but not limited to sediment, concrete and stucco, automotive fluids, hazardous materials, and pathogens) in runoff from the site;
- No slope erosion; and
- Water velocity moving off-site must not be greater than pre-construction levels.

If a project is subject to post-construction requirements, the applicant must submit a Stormwater Control Plan to the Public Works Department. The Stormwater Control Plan must demonstrate compliance with the Bay Area Stormwater Management Agencies Association Post-Construction Manual. This Stormwater Control Plan must illustrate how the project is implementing low-impact development principles and providing for long-term BMP maintenance.

3.9.4 Impacts

Methods of Analysis

Impacts with respect to hydrology and water quality are assessed by comparing conditions expected to occur associated with development of the site relative to the existing environmental setting described above. Post-Proposed-Project hydrology is assessed using the hydrology report prepared for the Proposed Project by the applicant's consultant, included as Appendix H, as well as preliminary Proposed Project plans (e.g., grading plan, erosion control notes, and utility plan) and a review of the Proposed Project's water demand and compliance with the City's water neutrality ordinance (Appendix J, Water Neutral Report). In addition, a well capacity and

sustainability assessment was performed on the agricultural well at the Project site which included a 24-hour well pump test consistent with industry standards. The findings of the well capacity and sustainability assessment were independently reviewed by an independent California Licensed Engineering Geologist, whose peer review was documented in a letter report dated September 9, 2021 (Appendix L). In this case, the only discretionary approvals the Proposed Project applicant is requesting at this time is approval of a Tentative Subdivision Map. Future approvals, including Design Review and a Use Permit required to construct attached multifamily units, would be required prior to any development of the site.

The analysis considers impacts on hydrology, water quality, flooding and groundwater resources in the context of broader issues and concerns affecting the region. The study area for surface water hydrology is the Napa River - Upper St. Helena Reach subwatershed, which is part of the large Napa River watershed, and the study area for groundwater resources is the Napa Valley Groundwater Subbasin. Actions required to implement the City's general plan policies related to hydrology and water quality, as enforced through the Municipal Code and the development approval process, are considered as components of the Proposed Project in the evaluation of impacts.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.
- Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - Result in substantial erosion or siltation on- or off-site;
    - Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    - Create of contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - Impede or redirect flood flows.

- In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.
- Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain elements of the significance criteria above are not applicable and therefore, are not considered potential impacts. These criteria elements are addressed briefly below and are not discussed further in this document.

Alteration of a Stream or River

The Proposed Project would not alter the course of a stream or river because none are encompassed by the Proposed Project boundary. The Proposed Project would not substantially alter the general pattern and/or direction of stormwater runoff because it does not propose substantial modifications to topography (the site is and would remain nearly level), and because runoff would continue to be directed to the north and northeast. Storm runoff from the site would be collected by a series of catch basins in the streets and conveyed to the City's off-site detention basin through underground storm drain lines. Therefore, Impact 3.9-3 (below) addresses the potential for alteration of existing drainage patterns through the increases in the rate or volume of runoff from impervious surfaces, but not through modification of the course of a stream or river. This issue (third significance threshold listed above) is not further addressed.

Tsunami or Seiche

Furthermore, the preconditions necessary for a project to be at risk of hazards due to a tsunami, or seiche require a reasonable distance and elevation relative to a coastline (for sea level rise or seiche) or large body of water (for seiche waves). The Project site is located over 200 feet amsl in elevation and is not next to a large water body subject to seiche. Therefore, there be no impact (or risk) associated with a tsunami or seiche and this issue (fourth significance threshold listed above) is not further addressed.

Impacts and Mitigation Measures

3.9-1: Would the Proposed Project violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality? This impact would be less than significant.

Construction

Development of the Project site would involve up to 16.9 acres of soil disturbance over the course of Proposed Project construction. During this time, the most intensive soil disturbance would occur during site preparation and earthmoving activities associated with grading, installation of underground utilities, foundation and building pad construction, and road and streetscape construction. During this period, soil erosion may result in discharges of sediment-laden stormwater runoff into nearby receiving waters. As discussed in the setting (and shown in Figure 3.9-1), the Project site drains to an existing City-owned detention basin that was constructed as part of the City's Flood Protection Project. Therefore, during construction, the detention basin would be the most immediate storm runoff destination during construction. However, the detention basin has a low-flow outlet, meaning that runoff from the construction site could eventually enter the Napa River.

The primary potential pollutant associated with construction activity is sediment (i.e., high turbidity) generated from site preparation and grading activities. Since the Napa River is listed under CWQ Section 303(d) as impaired for sedimentation/siltation, it has an increased sensitivity to impacts associated with turbid runoff. In addition to sediment, other pollutants associated with construction activity could include heavy metals, oil/grease, fuels, trash and other pollutants from accidental spills or releases of refuse, paints, solvents, sanitary wastes, and concrete curing compounds. Furthermore, as a portion of the site has been historically used as a vineyard and before that an orchard, there is the possibility that soils could contain residual agricultural pesticides or elevated nutrient levels. However, the potential for residual pesticides to remain on-site is low because pesticides are required to demonstrate a lack of persistence in the environment considerably beyond their intended period of use in order to obtain EPA approval. Furthermore, when pesticides are used properly and in accordance with label specifications, potential impacts on the surrounding environment and receiving waters (surface water and groundwater) are minimized. Historically, pesticides degrade with time as repeated rainy seasons flush soils and further dilute residual concentrations. When compared to agricultural land uses, which can include occasional ripping, plowing, and replanting and use of unpaved roads, which continuously leave bare soils exposed to storm runoff, residential land uses have a lower impact with regard to dispersion of fertilizers and/or pesticides into the environment.

Without adequate precautions, construction activities could generate pollutants and/or mobilize sediment such that it contributes to water quality degradation of receiving waters and/or violates Basin Plan objectives. However, compliance with the Construction General Permit and the City's Stormwater and Runoff Pollution Control Ordinance (Chapter 13.32) would require implementation of a SWPPP to address potential construction-related impacts on water quality. The SWPPP must specify the location, type, and maintenance requirements for BMPs necessary to prevent stormwater runoff from carrying construction-related pollutants into the

Napa River and/or the underlying groundwater basin. BMPs must be implemented to address potential release of fuels, oil, and/or lubricants from construction vehicles and equipment (e.g., drip pans, secondary containment, washing stations); release of sediment from material stockpiles and other construction-related excavations (e.g., sediment barriers, soil binders); and other construction-related activities with the potential to adversely affect water quality. The SWPPP must also include a construction site monitoring program that identifies specific requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate (depending on the Risk Level), sampling of the site effluent and receiving waters. The number, type, location, and maintenance requirements of BMPs to be implemented as part of the SWPPP depend on site-specific risk factors such as soil erosivity, construction season/duration, and receiving water sensitivity.

SWPPPs must be developed and implemented by a Construction General Permit Qualified SWPPP Developer (QSD)/Qualified SWPPP Practitioner (QSP). The QSD/QSP is tasked with determining the receiving water risks (including beneficial uses and CWA Section 303d impairments), monitoring site activities that could pose risks to water quality, and developing a comprehensive strategy to control construction-related pollutant loads in site runoff. Based on the Proposed Project characteristics and the setting, the SWPPP would be required to meet risk level II or III requirements as defined in the Construction General Permit. Minimum standard BMPs include erosion and sediment controls; site management/ housekeeping/waste management; management of non-stormwater discharges; run-on and runoff controls; and BMP inspection, maintenance, and repair activities. A rain event action plan must also be prepared by the QSD/QSP to outline the procedures to prepare the construction site for rain events and minimize the potential release of construction-related contaminants. It is at the discretion of the QDS/QSP to use as many BMPs as available which would successfully protect on- and off-site resources from erosion, sedimentation, and pollution.

The following list includes examples of treatment control BMPs commonly employed during construction; although these would vary based on the nature of construction activities, the characteristics of the site, and the existing receiving waters impairments (these features would appear as notes on any final design plans):

- Silt fences installed along limits of work and/or the construction site
- Stockpile containment (e.g., visqueen, fiber rolls, gravel bags)
- Exposed soil stabilization structures (e.g., fiber matrix on slopes and construction access stabilization mechanisms)
- Street sweeping
- Tire washes for equipment

- Runoff control devices (e.g., drainage swales, gravel bag barriers/chevrons, velocity check dams) and slope protection.
- Drainage system inlet protection
- Wind erosion (dust) controls
- Tracking controls
- Prevention of fluid leaks (inspections and drip pans) from vehicles
- Dewatering operations best practices
- Materials pollution management
- Proper waste management
- Regular inspections and maintenance of BMPs

The standard requirements contained in a SWPPP are sufficient to address a project's potential to violate water quality standards or waste discharge requirements. Implementation of SWRCB and San Francisco Bay RWQCB requirements (CWA NPDES Program and Porter–Cologne Water Quality Control Act WDRs) are enforced through the City's Stormwater and Runoff Pollution Control Ordinance (Chapter 13.32). In addition to stormwater runoff, construction activities can generate fugitive dust, which if not properly controlled, can be deposited in nearby waters. Note that this potential impact is addressed in Section 3.3, Air Quality; actions to mitigate adverse effects on air quality would likewise mitigate potential adverse effects on water quality from atmospheric deposition.

The construction-related impact of the Proposed Project on water quality would be **less than significant**, because compliance with existing permitting requirements and conditions of approval are sufficient to avoid water quality degradation, meet water quality standards and Basin Plan objectives, and prevent adverse effects on beneficial uses.

Operation

Implementation of the Proposed Project would include the development of impervious surfaces, including roadways and driveways, and structures (dwellings) which would impede water infiltration and contribute to increased water runoff rates. These increased water runoff rates could gather potential pollutants such as heavy metals, nutrients from lawn fertilization, oil/grease and fuels from areas where vehicles are parked, and other household trash and debris. Stormwater runoff would have the potential to pollute nearby surface waters if storm drain infrastructure and buffers would not be used.

Constituents found in urban runoff vary as a result of differences in rainfall intensity and occurrence, geographic features, the land use of a site, as well as vehicle traffic and percent of impervious surface. In the Napa Valley, there is a natural weather pattern of a long dry period generally from May to October. During this seasonal dry period, pollutants contributed by vehicle exhaust, vehicle and tire wear, crankcase drippings, spills, and atmospheric fallout accumulate on roadways, driveways, and parking lots within the urban watershed. Precipitation during the early portion of the wet season (which typically spans from November to April) washes these pollutants into the stormwater runoff, which can result in elevated pollutant concentrations in the initial wet weather runoff (first flush).

The Proposed Project would be subject to the most recent standards and performance criteria contained in the Small MS4 Permit (described in Section 3.9.3, Regulatory Setting). The City is subject to this permit because it makes discharges to the Napa River from its municipal storm drain system. The Small MS4 Permit requires development and redevelopment projects to adhere to the Small MS4 Permit and follow published guidance for compliance. These include the following:

- Site Design Measures: Site design measures requires early assessment and evaluation of how site conditions, such as soils, vegetation, and flow paths will influence the placement of buildings and paved surfaces. The evaluation is used to meet the goals of capturing and treating runoff and maximizing opportunities to mimic natural hydrology. Options for site design measures include preserving trees, buffering natural water features, and using green roofs or porous pavement.
- Source Control Measures: Source control measures seek to avoid introduction of water quality pollution/degradation altogether. Source control strategies include things like covering refuse/trash areas, properly managing outdoor storage of equipment/materials, minimizing use of pesticides and fertilizers in landscaping, using sumps or special area drains to send non-stormwater discharges to the sewer, ensuring regular grounds maintenance, etc.
- Treatment Control Measures: Treatment control measures retain, treat and/or infiltrate the site runoff produced under normal circumstances, controlling both the quality and quantity of stormwater released to the City's conveyance system or directly to receiving waters. In most situations, this means implementing structural BMPs (e.g., infiltration, bioretention and/or rainfall harvest and re-use) to treat the volume and rate of runoff produced by 85th percentile storm (i.e., design capture volume).
- Operation and Maintenance Requirement: The Small MS4 Permit requires that maintenance agreements stay in place with each property (executed and then recorded with the County Clerk Recorder) to ensure permanent treatment control measures

developed on site are properly maintained and/or repaired in accordance with the stormwater quality control plan.

Overall, the Small MS4 Permit requires new development and redevelopment to adopt a low-impact development strategy, which minimizes hydromodification[6] impacts known to have adverse impacts on receiving waters. The City implements the Small MS4 Permit by requiring developers seeking approval of tentative subdivision maps to comply with MS4 Permit standards and the guidance and criteria in the Bay Area Stormwater Management Agencies Post Construction Manual. Although specific design features have yet to be finalized for the Proposed Project, all of the items above must be included in a Stormwater Control Plan to be submitted to the City as a condition of Proposed Project approval, as described in in the Regulatory Setting section above. The Stormwater Control Plan, to be developed and submitted by the Proposed Project applicant for final Proposed Project approval, must illustrate how the Proposed Project is implementing low-impact development principles and providing for long-term BMP maintenance.

The Proposed Project's grading plan includes all the elements necessary to demonstrate it can successfully comply with MS4 Permit requirements. Based on the findings in Appendix H, the City's detention basin is adequately sized to hold the increase in runoff that would be generated by the Proposed Project (further discussed in Impact 3.9-3). It is expected that the detention basin would be used and/or modified, as necessary, to comply with the water quality design capture volume required under the MS4 Permit, the details of which must be included in the Proposed Project's Stormwater Control Plan. Furthermore, water quality features such as downspouts to landscaped swales; vegetated swales; hydrodynamic oil, water and solid separators; private street sweeping; labeled storm drains ("drains to river") and homeowner educational materials on stormwater pollution prevention are listed on the grading plan as BMPs to be implemented to prevent storm runoff of poor quality from entering the Napa River or seeping into the underlying groundwater table.

Impacts associated with Proposed Project construction and operation on water quality would be **less than significant**, because existing permitting requirements and conditions of approval (i.e., MS4 Permit and the City's Stormwater and Runoff Pollution Control Ordinance) are sufficient to avoid water quality degradation, meet water quality standards and Basin Plan objectives, and prevent adverse effects on beneficial uses.

[6] Hydromodification is a primary contributor to problems related to excessive sediment and altered steam flow dynamics (e.g., flow volumes and velocities), primarily due to impervious surfaces, mass grading, and/or poor road designs (both urban and rural/unpaved).

Mitigation Measures

None required.

3.9-2: Would the Proposed Project decrease groundwater supplies or interfere substantially with groundwater recharge such that the Project may impede sustainable groundwater management of the basin? This impact would be less than significant.

As discussed in detail under the environmental setting (Groundwater Resources), the County works with local jurisdictions including the City to sustainably manage the Napa Valley Groundwater Subbasin in compliance with SGMA. In its most recent assessment of conditions, the County, through its technical consultant, has determined that the Subbasin is not exhibiting significant and unreasonable impacts with regard to the applicable sustainability indicators defined by SGMA, including lowering of groundwater levels, depletion of groundwater in storage, degradation of groundwater quality, and depletions of interconnected surface waters (LSCE 2021). In its most recent annual report, the Subbasin was found to continue to exhibit stable groundwater levels, even despite a very dry 2020 water year, as it has historically, and has continued to be operated within the sustainable yield of the Subbasin (of between 17,000 and 20,000 AFY) (LSCE 2021). The long term (1988–2020) annual change in storage for the Subbasin is a decrease of 8,945 AF, following the very dry conditions of 2020, but still within the ranges that are generally experienced over the long term (LSCE 2021). Annual storage changes have commonly fluctuated between positive and negative values dating back to 1988; however, the median change is a positive increase of 1,784 AF, indicating that groundwater demands are not resulting in depletion of the aquifer (LCSE 2021).

Potential Proposed-Project-related impacts on groundwater depends on the component of its total water demand that would come from on-site or off-site groundwater wells. Based on the Proposed Project applicant's Water Neutral Report (Appendix J) the Proposed Project is expected to require 37.04 AFY to supply its total water demand (including both domestic and landscape irrigation, see also Section 3.13, Utilities, Table 3.13-10). Out of this total, it is estimated that up to 17.16 AFY (5,592,210 million gallons) would be supplied by the on-site groundwater well (shown in Figure 3.9-3) to provide for irrigation of all public and private landscaping (including lawns and planter strips between the proposed streets and sidewalks) as well as an existing vineyard in the panhandle portion of the site that is slated to remain. The Proposed Project's landscape irrigation demand was determined by RHA and Spatial Design Group (see Appendix J) using the City's Model Water Efficient Landscape Ordinance. The analysis uses an annual reference evapotranspiration (ETo) of 44.1 inches established for the City. Actual landscape water use associated with the Proposed Project may be lower but cannot exceed this amount under the City's model landscape ordinance. The remainder of the

Proposed Project's water demand (i.e., 19.88 AFY) would be served by the City's municipal/potable water supply.

Therefore, the groundwater demand associated with the Proposed Project would come from a combination of the onsite well (located on Parcel B – see Figure 2-4 in Chapter 2, Project Description) and the City's Stonebridge Complex wells (shown in Figure 3.9-3). As discussed in detail in Section 3.13 (Utilities and Service Systems), the City's municipal water supply system relies on groundwater for, on average, up to 20% of its total supplies (with the remainder coming from a variety of surface water sources). The City relies on its groundwater well to serve as a buffer during drought years, when less surface water is available. It has stated that up to 30% of the City's demand may be served by groundwater, if necessary, in below normal, dry, and critically dry years. Therefore, it is assumed that between 18% and 30% of the Proposed Project's domestic water demand could come from the City's Stonebridge Complex wells. This amounts to 3.98 AFY of Proposed Project demand from the City's groundwater wells during average years, and up to 5.96 AFY during critically dry years.

The distinction between City water and the on-site well water is important, because the Proposed Project would be required to implement the City's water neutrality policy (incorporated by reference in Chapter 13.12 [Water Use Efficiency and New Development] of the City's Municipal Code), in which the Proposed Project must offset the full amount of its City water demand through any combination of on-site water conservation measures, or payment of a fee to be used for implementation of conservation measures for the City's existing housing stock (such as toilet retrofits or other City approved conservation measures). Because the City's municipal connections are served by the same combination of water supply sources, including groundwater, this offset would translate to eliminating the Proposed Project's impact on the City's municipal groundwater wells. Table 3.9-4 shows the Proposed Project's demand for City groundwater. Because there may be a delayed effect due to the timing to complete the Proposed Project's agreed upon offset measures, this impact analysis assumes a (highly unlikely) scenario that the Proposed Project would result in an increase in demand of 3.98 AFY from the City's groundwater well in an average year.

The Stonebridge Complex wells have produced on average about 350 AFY since 2006, ranging from a low of 182 acre-feet in 2012 to a high of 526 acre-feet in 2013 (LSCE 2016, 2020). The wells have a combined capacity of approximately 595 gallons per minute, which is equivalent to 960 AFY assuming constant pumping. The average municipal groundwater demand of the Proposed Project (3.98 AFY) represents just 1.1% of the groundwater typically pumped from the municipal supply wells. In addition, according to the groundwater basin assessment report, groundwater pumping is a relatively small outflow component compared to surface water stormflows and groundwater baseflow discharged to the Napa River (LSCE 2016). Therefore, the basin groundwater budget is dominated much more by precipitation than it is by

groundwater pumping and the proposed groundwater pumping by the project would be expected to have a negligible effect on flows in the Napa River (LSCE 2016).

Table 3.9-4
Project Demand from City Groundwater Wells During Average and Critically Dry Years

Year	Percent City Demand Served by Groundwater	Proposed Project Demand for City Groundwater[1]
Average	18%	3.09 AFY
Critically Dry	30%	5.15 AFY

Source: Appendix J.
Note:
[1] Calculated by multiplying the percent (as a fraction) of City groundwater demand per year type by the Proposed Project's total estimated water demand of 19.88 AFY.

Furthermore, the City's average groundwater use represents less than 37% of the wells' combined capacity. Groundwater levels from a dual completion monitoring well located about 600 feet away (SGMA indicator well 222s[/3d]-swgw5, shown in Figure 3.9-3) have been measured on a continuous basis since December 2014. Despite the City's pumping pattern during this time frame (which includes during drought years), along with the agricultural and domestic pumping that occurs in the vicinity, the groundwater level trend in the monitoring well is stable (LCSE 2021). Marked declines of the groundwater table to a level of up to approximately 30 feet bgs are observed in the summer and fall, but the groundwater table returns to its previous level of approximately 22 bgs by early spring (LSCE 2021).

As discussed in detail in the environmental setting (Groundwater Resources), the dual completion monitoring well is one of the Subbasin's representative monitoring sites established for measuring whether sustainability goals are being met. The minimum threshold that would indicate a significant and unreasonable lowering of groundwater levels, reduction in groundwater storage, and/or streamflow depletion for the indicator well is 32 feet bgs (equates to 185 feet above mean sea level (amsl)) for the shallow screened well and 53 bgs (164 feet amsl) for the deeper screened well (LSCE 2016). In fall 2019 (when groundwater levels are typically at their lowest), the measured groundwater levels at the indicator well were 29 feet bgs (188 feet amsl) and 46 bgs (171 feet amsl) for the shallow screen and deep screen, respectively (DWR 2020). By Spring 2020, the shallow well had risen to 20.4 feet bgs or 196.6 amsl and the deeper well to approximately 36 feet bgs or 181 amsl (LSCE 2021). Despite heavy pumping to sustain the area's municipal and agricultural water demands, these levels remain above minimum thresholds set to indicate significant and unreasonable impacts with regard to groundwater sustainability under SGMA. Given the aforementioned factors, a 0.9% increase in the City's groundwater demand associated with the Proposed Project would not have a measurable impact on the groundwater levels in the vicinity of the Stonebridge Complex wells.

This would likewise be the case for the Proposed Project's demand of 17.16 AFY from the on-site well. This water demand comes out to an average pumping rate of 10.6 gpm compared to the well yields of vicinity wells that range from 39 to 147 gpm. The on-site well, proposed to be located on Parcel B of the proposed subdivision, would easily be capable of supplying this amount based on the well's yield (as reported by the Project applicant) of 350 gpm. Although the well is currently inoperable and would need to be repaired so it is operational, this is also consistent with regional well yields. The recent well capacity and sustainability assessment performed on the agricultural well on the Project site confirmed an ability of the existing well to meet the proposed average pumping rate of 10.6 gpm (Appendix L). In the 24-hour pump test, a pumping rate of 40 gpm was employed and only one foot of drawdown was measured in the well which stayed consistent throughout the pumping period (Appendix L). The immediate recovery of this relatively small drawdown upon cessation of pumping was further evidence of high aquifer transmissivity (i.e., an ability of a water bearing unit to transmit water flow) and relatively abundant groundwater.

As shown in Table 3.9-2, there are a number of municipal and irrigation wells in the vicinity of the Project site, and average well yields far exceed the anticipated demand for the Proposed Project (note minimum well yields listed are for domestic wells constructed for low yield). The aquifer in general is known to be a productive alluvial aquifer, and therefore, there would be sufficient yield available to supply the Project's well water landscape irrigation demand as also demonstrated by the findings of the site specific well pump test conducted on the existing agricultural well on the Project site. The proposed rate of pumping is relatively low and the resulting radius of influence would be highly localized, and greatly overshadowed by the radius of influence associated with the much higher producing agricultural and municipal supply wells in the surrounding vicinity. The existing surrounding levels of groundwater pumping has not produced undesirable results under SGMA (LSCE 2021) and both regional and local groundwater levels have remained stable; therefore, the potential impact of using the on-site well as proposed would be less than significant.

A review of the existing well indicates that the well is screened from 80 feet bgs to a total depth of 410 feet bgs with a 20-foot seal at the surface. Therefore, the well would draw from the deeper volcanic aquifer, below the Napa Valley alluvium which is considered hydraulicly connected to the Napa River (Appendix L). Therefore, the proposed pumping from this well is not likely to have any direct effect on surface flow in the Napa River. In addition, as stated above, the Subbasin as a whole is being managed sustainably, with a long-term median increase in groundwater storage of 1,784 AFY, therefore the localized impacts on groundwater levels and effects on flows in the Napa River would be minimal, thus the Proposed Project's overall impacts on groundwater resources would be **less than significant**.

Mitigation Measures

None required.

3.9-3: Would the Proposed Project substantially alter the existing drainage pattern of the site or area through the addition of impervious surfaces resulting in erosion or siltation on- or off-site; increasing the rate or amount of surface runoff resulting in flooding on- or off-site; contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide polluted runoff; or impede or redirect flood flows? This impact would be less than significant.

Alterations to drainage patterns would be limited to increases in the rate and volume of storm water runoff associated with impervious surfaces. According to Appendix H, the Proposed Project would result in the addition of 10.91 acres of impervious surface, which is equivalent to an impervious surface coverage of 58%. Increases in the rate and volume of storm water runoff can be associated with exceedance of local storm drain capacity, increases in on- or off-site flooding, and/or hydromodification impacts to receiving waters, which include increase bank erosion or contribution of site-related pollutants. Because the Proposed Project would not alter the course of a stream or river and is not located within the SFHA of the Napa River, it would not impede or redirect flood flows.

In addition, the Project site would be subject to flooding only in a highly unlikely, catastrophic scenario. Because the Proposed Project consists of residences (as opposed to industry or businesses that store appreciable quantities of hazardous materials and/or wastes), the risk of releasing pollutants during such flooding would be low. The residences could have small quantities of household hazardous wastes, and such wastes could be released in a catastrophic flood scenario. However, in the context of such flooding, the release of such waste would not result in measurable increases in pollutant loads carried by the river during such a flood event, and would be dwarfed by the effects caused within the entire watershed.

Potential impacts associated with increases in the rate and/or volume of runoff produced by the Proposed Project are addressed below.

Substantial Erosion or Siltation On- or Off-Site

The off-site City detention basin has been designed with adequate capacity to capture and treat increases in the rate and volume of stormwater runoff associated with development in this area of the City, including development of the Project site with impervious surfaces. Per an agreement with the City and the Comprehensive Flood Protection Project's Interior Drainage Analysis Final Report for the Miller Property/Hunter Property/Hunt Avenue, it was determined that development of the Flood Protection Project's detention basin would account for future

development of the Hunter property (Project site) up to 70% impervious surface area (Appendix H). The Proposed Project is estimated to be developed at approximately 58% impervious surface; therefore, allowing the Project site's increased runoff to be contained within the City's detention basin without the need to expand the basin or further development of facilities.

As discussed under Impact 3.9-1, the Proposed Project would be subject to the most recent standards and performance criteria contained in the Small MS4 Permit because it would be required to prepare and submit for City approval a Stormwater Control Plan that complies with the Bay Area Stormwater Management Agencies Post Construction Manual. It is expected that the City's detention basin would be used and/or modified as necessary to comply with the water quality design capture volume required under the MS4 Permit, the details of which must be included in the Proposed Project's Stormwater Control Plan. Furthermore, water quality features such as downspouts to landscaped swales; vegetated swales; hydrodynamic oil, water and solid separators; private street sweeping; labeled storm drains ("drains to river") and homeowner educational materials on stormwater pollution prevention are listed on the grading plan as BMPs to be implemented to prevent storm runoff of poor quality from entering the Napa River or seeping into the underlying groundwater table.

The operation-related impact of the Proposed Project on water quality would be **less than significant**, because compliance with existing permitting requirements and conditions of approval (i.e., MS4 Permit and the City's Stormwater and Runoff Pollution Control Ordinance) are sufficient to avoid water quality degradation (including erosion and siltation).

Increases in On- or Off-Site Flooding

As previously discussed, the City-owned off-site detention basin has been designed to store the increase in storm water runoff generated from the Project site during a 100-year storm event. During major flood events, the levee culvert gate is closed, routing stormwater into the detention basin. This avoids contributing to flows within the Napa River. As water fills the basin, the pump station is activated and water is pumped from the basin into the Napa River. However, by the time that occurs, the detention basin would have already captured the increase in flows associated with impervious surfaces on the Project site. For this reason, the impact of the Proposed Project to both on- or off-site flooding would be **less than significant.**

Stormwater Drainage System Capacity

The Proposed Project would construct storm drains or as required, improve existing storm drains to ensure adequate capacity is available to carry runoff produced by a 10-year storm event. Based on the Proposed Project's utility plan, on-site storm flows from single-family residences would be conveyed to the off-site detention basin via underground storm drain lines varying in diameter from 15 to 30 inches. Storm runoff from the Project site east of the proposed

Starr Avenue extension (multifamily housing) would be collected by 15-inch storm drains and connected to the City's existing 36-inch storm drain and would drain into the adjacent detention basin. Title 16 of the City's Municipal Code requires a new stormwater drainage system be designed by a registered civil engineer for ultimate development of the watershed, and to convey runoff generated by the 10-year flood. Per Title 16, the stormwater drainage system must also be designed to provide for the protection of abutting and off-site properties, and off-site storm drain improvements may be required to satisfy this requirement. Street curbs would be designed to adequately collect and convey the runoff produced by a 100-year storm. As indicated above, the existing off-site detention basin was designed to accommodate runoff from the Project site of up to 70% impervious surface area.

Because compliance with the City's Municipal Code and improvement standards associated with approval of tentative subdivision maps, and because the off-site detention basin was designed with adequate capacity, the Proposed Project would have a **less-than-significant impact** related to exceedance of stormwater system capacity.

Mitigation Measures

None required.

3.9-4: Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? This impact would be less than significant.

As discussed under Impact 3.9-1, the Proposed Project would comply with applicable regulations and permits designed to comply with the Water Quality Control Plan for the San Francisco Bay Region. The SWPPP and Stormwater Control Plan to be developed and implemented in compliance with the City's Municipal Code would be effective at meeting water quality objectives of the Basin Plan. As discussed under Impact 3.8-2, the County is currently achieving sustainable groundwater management under an alternative GSP submittal (Basin Analysis Report). For the reasons discussed therein, the groundwater demand of the Proposed Project would not have an appreciable impact on meeting minimum thresholds established for the Napa Valley Subbasin under SGMA. Therefore, the impact of the Proposed Project on water quality and groundwater management plans would be **less than significant**.

Mitigation Measures

None required.

3.9.5 Cumulative Impacts

The cumulative context for the analysis of potential water quality impacts related to surface water is the Upper St. Helena Reach subwatershed (shown in Figure 3.9-1). This is because stormwater discharges originating from this area could combine with those of the Proposed Project to result in an increase in non-point source pollution discharging into the Napa River upstream of Sulphur Creek. Such increases could result from a combination of construction activities, greater use intensity, increased coverage of impervious surfaces and/or increased use of routine household cleaners and landscape chemicals. New development and/or redevelopment projects in these locations have the potential to generate impacts related to the violation of water quality standards, Basin Plan water quality objectives, and/or TMDLs established for the Napa River.

For groundwater resources, the cumulative context is the Napa Valley Groundwater Subbasin (Subbasin) (shown in Figure 3.9-3). Development of past, present and reasonably foreseeable projects within this area that results in an increase in groundwater demand could result in impacts related to depletion of the underlying aquifer, regional lowering of the groundwater table level, or depletions of interconnected surface waters.

As the Proposed Project does not have impacts with regard to flooding (since the potential impact is eliminated through use of the off-site detention basin), it would not contribute to any cumulative flooding impacts in the subwatershed.

3.9.5: Would the Proposed Project cumulatively degrade surface or groundwater quality? The Project's contribution would not be considerable.

State and regional regulations described in Section 3.9.3 (Regulatory Setting) would reduce the rate of runoff and filter out pollutants in the same or similar manner as described in Impact 3.9-1. Construction activities are required to comply with the SWRCB statewide NPDES stormwater permit program, the Porter-Cologne Act's requirements for site-specific waste discharge, as well as local agency public works construction standards. In addition, the City's 1993 General Plan policies, 2019 General Plan policies, and existing City regulations would ensure protection of water quality, improve stormwater management, and reduce stormwater pollution. Increased impervious surface area as a result of the Proposed Project and other development projects in the watershed would be mitigated through application of the Small MS4 Permit, which requires the capture and treatment of stormwater runoff for the 85th percentile storm event. Areas within the cumulative context that are outside the jurisdictional boundary of the City would implement similar measures because Napa County requires development and redevelopment projects to implement the same standards discussed under Impact 3.9-1 (i.e., SWPPP and MS4 Permit standards).

Based on development of past, present and reasonably foreseeable projects in the Upper St. Helena Reach subwatershed this is an existing potentially significant cumulative impact.

Due to the residential nature of the Proposed Project and compliance with mandatory existing state and local requirements to ensure protection of water quality in the subwatershed the Proposed Project's contribution to this potentially significant cumulative impact is less than considerable resulting in a **less-than-significant cumulative impact**.

Mitigation Measures

None required.

3.9-6: Would the Proposed Project cumulatively decrease groundwater supplies or interfere substantially with groundwater recharge such that sustainable groundwater management of the basin would be impeded? The Project's contribution would not be considerable.

As discussed under Impact 3.9-2, Napa County monitors the groundwater basin and has established minimum thresholds and measurable objectives for the Subbasin, which includes a representative monitoring site near the Pope Street Bridge crossing of the Napa River. The Basin Analysis Report prepared for the Subbasin, indicates that groundwater conditions in the Subbasin are currently meeting sustainability goals established per SGMA and the Subbasin has operated within its sustainable yield over a period of more than 20 years. The Report includes projects and management actions to ensure sustainability targets are met through the planning and implementation horizon of the City's 2019 General Plan (2040 and beyond) (LSCE 2016). The City's 2019 General Plan EIR notes that from 2011 through 2015, groundwater drawn from the Subbasin accounted for about 18% of the City's total water supply (City of St. Helena 2018). In addition, due to stable groundwater levels observed during recent drought conditions (from 2012 through 2015) it indicates recent rates of groundwater pumping have not exceeded the sustainable yield of the subbasin (City of St. Helena 2018). As noted above under Impact 3.9-2, the Proposed Project's increase in water demand that would be supplied by groundwater wells would amount to a 0.9% increase which would not have a measurable impact on the groundwater levels in the vicinity of the Stonebridge Complex wells.

Future development in the City is required to comply with existing regulations that would ensure overall infiltration into the aquifer would remain robust, including requiring low-impact development projects be included to capture and infiltrate stormwater runoff, consistent with Bay Area Stormwater Management Agencies Association Manual, City Municipal Code, and required compliance with the NPDES permit, MS4 requirements, and/or General Waste Discharge Requirements. The 2019 General Plan includes policies PF1.E and PF1.F that require tracking new private wells to protect groundwater production. The 2019 General Plan

does not identify a significant cumulative groundwater impact. However, the Napa County General Plan Update EIR (SCH #2005102088), notes increased demand on groundwater supplies associated with increased development in the County (including cities) could lead to groundwater decline and overdraft contributing to a significant cumulative impact on groundwater resources (Napa County 2007).

The City has implemented actions to ensure the groundwater Subbasin continues to operate within its sustainable yield. The City's 2011 Water Neutral Policy for Development requires all new development to be water-neutral, through a combination of on-site water conservation measures, off-site retrofitting and use of well water, as allowed. Future development in the City is not expected to result in an increase in total water demand because new development is required to offset new demand with water conservation retrofits of existing facilities, or in-lieu payments to the City to carry out any retrofit projects. In addition, as addressed under Impact 3.9-2, the on-site agricultural well is expected to yield 350 gpm (as reported by the Project applicant) and demonstrated an ability to pump at a rate of 40 gpm over a 24-hour period with negligible drawdown, which is far more capacity than the 10.6 gpm the Proposed Project would require for on-site irrigation. Based on the findings of the well capacity and sustainability test, this rate of pumping would have a highly localized radius of influence, if any, , and would be greatly overshadowed by the radius of influence associated with the agricultural and municipal supply wells in the surrounding vicinity. Therefore, given Napa County's active management of the Subbasin under SGMA, available information, and the City's implementation of a water neutral development policy, the Proposed Project's contribution to a cumulative impact with regard to groundwater is not considerable resulting in a **less-than-significant contribution.**

Mitigation Measures

None required.

3.9.6 References

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3.10 LAND USE

3.10.1 Introduction

This section describes existing and planned land uses within and adjacent to the proposed Hunter Subdivision Project (Proposed Project) site within the City of St. Helena (City), identifies land use designations, and zoning, and analyzes consistency of the Proposed Project with the City's 1993 General Plan goals and policies and the City's Municipal Code, Title 17 Zoning.

The City has since adopted an update to the 1993 General Plan; the 2019 General Plan (known as the "General Plan Update 2040," a General Plan with a planning horizon of 2040) was adopted in May 2019. However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this Environmental Impact Report (EIR) uses the 1993 General Plan as the applicable general plan for the purposes of evaluating consistency of the Proposed Project with the City's General Plan policies in effect when the application was deemed complete by the City. Nonetheless, this EIR also evaluates consistency with the City's adopted 2019 General Plan for informational and consistency purposes.

California Environmental Quality Act (CEQA) Guidelines Section 15125(d) provides that the environmental setting of an EIR must discuss "any inconsistencies between the proposed project and applicable general plans and regional plans." Potential inconsistencies between the Proposed Project and the City's 1993 General Plan, and the Zoning Ordinance are discussed in this section in addition to a review of the City's 2019 General Plan. Technical sections included in this Draft EIR also evaluate and analyze any potential physical/environmental effects and potential incompatibilities with the 1993 General Plan that may be considered in the determination of physical environmental impacts.

Comments received in response to the Notice of Preparation related to land use included concerns about consistency with the underlying land use designation and zoning, and potential conflicts with the City's 1993 General Plan. All of these issues are addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information for this section was primarily obtained from the City of St. Helena 1993 General Plan (City of St. Helena 1993), City of St. Helena 2019 General Plan (City of St. Helena 2019), City of St. Helena Municipal Code, and other miscellaneous Proposed Project information.

3.10.2 Environmental Setting

The following provides an overview of the existing land use designation, zoning and land uses on the Project site as well as the surrounding land use designations and zoning.

Existing Site

The Project site (Assessor's Parcel Number is 009-030-057) is located in the northeast portion of the City, at the eastern terminus of Adams Street and the west/north[1] terminus of Starr Avenue, three blocks east of downtown and State Route 29, and generally south/west of the Napa River. The Project site has historically been used for agriculture and contained an orchard that was removed in the 1960s. In the early 1970s a small vineyard was planted on approximately 7-acres of the Project site. In the mid-2000s the site was altered by the addition of fill material primarily associated with the construction of the St. Helena Comprehensive Flood Protection Project (Flood Protection Project) along the Napa River, located to the north and northeast of the Project site.

The Project site is presently undeveloped with the exception of a small vineyard under active cultivation located in the southwestern portion of the site, near the terminus of both Adams Street and Starr Avenue. The site is generally level and does not contain any streams or waterways. Trees are located along the edge of the southern/southeastern boundary of the site, including parallel to the Vineyard Valley Mobile Home Park. Based on the Proposed Project's grading plan, the elevation across the Proposed Project's development footprint ranges from approximately 230 feet above mean sea level on its southern edge to approximately 212 feet above mean sea level on its northern edge. The portion of the site planned for the extension of Adams Street ranges from 243 feet to 230 feet above mean sea level. An existing well is located near the southeastern edge of the Project site.

Surrounding Land Uses

Adjacent land uses include single-family and multi-family residential development to the south and southeast, including the Vineyard Valley Mobile Home Park, Hunt's Grove Apartments, and single-family residences along Starr Avenue (see Figure 2-3 in Chapter 2, Project Description). Office uses are located immediately adjacent to the site's westernmost edge at the terminus of Adams Street. Single-family residences along Monte Vista Avenue and Hunt Avenue back up to the site. Undeveloped land currently under cultivation or fallow is located to the north and northwest. A single-family residence along with an accessory dwelling unit and barn is currently under construction just north/west of the site. A gravel maintenance road/public trail borders the site along the north/northwest and a city storm water detention basin borders the site to the south/southeast. A drainage ditch is located along the southwestern edge of the property. Starr Avenue and Adams Street essentially stub into the Project site.

[1] The site is oriented on an axis that runs generally on a diagonal from southwest to northeast. Directions in relation to the site are therefore in many cases not directly "north" or "'west" are shown as a combination of directions.

The open space areas located north and east of the site are part of the City's Flood Protection Project. The Napa River is located approximately 540 feet north and northeast of the Project site.

Land uses surrounding the Project site are currently designated High Density Residential (HDR) and Medium Density Residential (MDR) adjacent to the south and southeast; Open Space to the north and along the western Proposed Project boundary, and Agriculture farther west in the City's 2019 General Plan. In the 1993 General Plan, the Open Space parcel to the north and west of the Project site was designated as MDR rather than Open Space.

City of St. Helena 1975 General Plan Land Use Designation

The project site was designated for high density residential development in the 1975 St. Helena General Plan. Densities envisioned in the 1975 General Plan were 4-6 units per acre for single family homes and up to 16 units per acre for multi-family dwellings.

That land use policy was revised with the adoption of the updated 1993 General Plan (discussed below).

City of St. Helena 1993 General Plan Land Use Designations

The Project site is designated as MDR in the City's 1993 General Plan. According to the 1993 General Plan, "[t]he MDR designation provides for single-family detached and attached homes, secondary residential units, public and semi-public uses, and similar and compatible uses. Residential densities shall be in the range of 5.1 to 12.0 dwelling units per gross acre (du/acre). The MDR designation is the predominant residential designation, occurring throughout large areas of the City. The wide distribution of this designation is intended to maintain a development pattern in newly developing areas that is consistent with historic development patterns" (City of St. Helena 1993).

City of St. Helena 2019 General Plan ("General Plan Update 2040")

As previously mentioned, the City adopted the 2019 General Plan, known as the "General Plan Update 2040," in May 2019. However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. For informational purposes, the City's 2019 General Plan designates the Project site for MDR, the same as the 1993 General Plan (City of St. Helena 2019, Figure 2.1). However, the allowable density is up to 16.0 dwelling units per acre.

Existing Zoning

The City of St. Helena's Zoning Code (Title 17) specifies building setback, building height, building density, and site coverage to ensure that the public's health, welfare, and safety would be protected and that development occurs in a planned, logical fashion. The Project site is currently zoned Medium Density Residential (MR), which allows a residential density of between 5.1 to 16.0 dwelling units per acre. The MR district is consistent with the MDR General Plan designation. The MR district provides for single-family detached homes, accessory dwelling units, limited agricultural uses and compatible uses, as well as attached duplex and triplex units, condominiums, and townhouses, and similar uses with a use permit.

The City's General Plan Housing Element Update 2015–2023 was revised and last updated in May 2015. The City's 2015-2023 Housing Element identifies the site as vacant and underutilized (City of St. Helena 2015b, p.133, Table 43).

3.10.3 Regulatory Setting

There are no federal or state land use requirements applicable to the Proposed Project.

Regional Regulations

Plan Bay Area 2040

Plan Bay Area 2040 (Plan), adopted in 2017, is a state-mandated, integrated long-range transportation and land use plan. The region adopted its previous plan — Plan Bay Area — in July 2013. As the Bay Area's first regional transportation plan to include a Sustainable Communities Strategy (SCS) as required by Senate Bill (SB) 375, the original Plan Bay Area (2013) charted a course for reducing per-capita greenhouse gas emissions through the promotion of more compact, mixed-use residential and commercial neighborhoods near transit. In the Bay Area, the Metropolitan Transportation Commission and the Association of Bay Area Governments (ABAG) are jointly responsible for developing and adopting a SCS that integrates transportation, land use and housing to meet greenhouse gas reduction targets set by the California Air Resources Board. Plan Bay Area 2040 projects household and employment growth in the Bay Area over the next 24 years, provides a roadmap for accommodating expected growth, and connects it all to a transportation investment strategy that strives to move the Bay Area toward key regional goals for the environment, economy and social equity.

SB 375 was adopted with the goal of reducing greenhouse gas emissions from cars and light trucks. SB 375 will make it easier for communities to build housing and provide transportation choices. The SCS is a plan to meet the region's greenhouse gas emissions reduction target, while taking into account regional housing needs, transportation demands, and protection of

resource and farm lands based on the best forecast of likely land use patterns provided in coordination with ABAG's partner agencies.

Local Regulations

City of St. Helena 1993 General Plan

As noted in the General Plan, "growth continues to be one of, if not the primary issue facing St. Helena according to input from the community. Since the early 1970s when the City experienced a dramatic increase in growth pressures, the community has strongly supported a policy of deliberate slow growth in order to protect the fragile charm and beauty of the City, to ensure that natural resources such as water supply and prime agricultural land are not lost or overused, and to ensure that adequate public services such as schools and sewers can be provided. In addition to regulating the rate of growth, the City will also control where growth can occur by establishing an Urban Service Area." To address the desire to manage growth the City developed an Urban Service Area, which discourages urban sprawl by containing urban development within the designated Urban Service Area. The Urban Service Area is surrounded by agriculturally designated land and includes 663 acres designated for residential uses to accommodate projected growth, while maintaining a rational and compact development pattern at buildout (City of St. Helena 1993). The Project site is within the Urban Limit Line, which runs along the westerly edge of the Project site, separating it from the agricultural lands to the west and north.

The following goals and policies from the 1993 General Plan applicable to the Proposed Project are listed below. A consistency analysis for all the policies listed below is included in the impact section.

Growth Management

Policy 2.6.1: New development should be required to occur in a logical and orderly manner within well-defined boundaries, and be consistent with the ability to provide urban services.

Policy 2.6.2: Urban development shall be allowed to occur only within the Urban Service Area during the time frame of the General Plan.

Policy 2.6.3: Urban services such as sewer, water, and storm drainage will only be extended to development within the Urban Service Area. Exceptions will be permitted when undue hardship can be demonstrated, and proposed improvements are not found to be growth inducing.

Policy 2.6.4: Permit infill development and higher densities within currently developed areas wherever possible to minimize and postpone the need for expansion of the Urban Service Area.

Implementing Policy 2.6.6: Limit the amount of land designated for urban uses to those areas that can reasonably be predicted to be developed over the life of the plan. Areas not projected for urban development within the life of the plan shall be designated for agricultural or other non-urban uses.

Residential Growth Management

Policy 2.6.9: Limit the approval of new residential development to a maximum rate of 17 dwelling units per year.

Policy 2.6.10: Maintain a cap on residential development of 2,850 total dwelling units citywide by the year 2010. The total number of dwelling units shall not be construed as a goal, but shall be an absolute maximum allowable number.

Residential

Policy 2.6.14: Encourage a mix of housing types and price ranges to allow choice for current and future generations of St. Helenans.

Policy 2.6.15: Encourage new residential development in all density ranges that is consistent with scale and character' of the older residential districts of the City, particularly the neighborhoods west of Main Street

Policy 2.6.16: Encourage the development of higher density housing in areas near the center of town and close to recreation and services.

Policy 2.6.17: Minimize situations where new residential development will block public view of surrounding vineyards

Policy 2.6.18: Minimize large lot development (one dwelling unit per acre or less), except where this scale of development would not threaten retention of vineyards, inefficiently utilize land, or physically separate the community from the surrounding vineyards

Policy 2.6.19: Permit higher density housing in single family neighborhoods as long as the development character of the single family area is maintained (i.e., lot widths, orientation to street, building heights, etc.).

Policy 2.6.20: Encourage the subdivision and development of larger parcels (3 acres or more) as "planned unit developments" to ensure a more comprehensive and creative approach to planning the development as a single unit.

The “planned unit development” approach provides developers with greater design flexibility while ensuring the City adequate design review. The intent is to create developments that complement existing community character. The City will favor planned unit developments that provide generous amounts of open space, covered parking, the separation of pedestrian and vehicle traffic, and on larger tracts, a variety of housing types: single-family detached, duplex, and multi-family dwellings, in one and two-story structures.

Policy 2.6.21: Require new residential projects to be designed to facilitate non automobile modes of travel (i.e., walking, biking, transit, etc.).

St. Helena 2019 General Plan (“General Plan Update 2040”)

The City recently adopted an update to its 1993 General Plan in May 2019. Although the updated general plan policies will not be considered for this Proposed Project as discussed previously, the relevant policies are provided solely for information given the City has an updated general plan and are not evaluated for consistency with the Proposed Project. The Appellate Court has ruled in *Chaparral Greens v. City of Chula Vista* that “applicable” plan within the meaning of CEQA Guidelines, Section 15125(d) is a plan that has already been adopted and thus legally applies to the project; draft plans need not be evaluated.

In the 2019 General Plan one of the primary goals of the City is to contain development and preserve agricultural lands in and adjacent to the City, similar to the goal of the 1993 General Plan. In lieu of defining an Urban Services Area, the 2019 General Plan updates the City’s Urban Limit Line and designates Urban Reserve Areas. The Urban Limit Line denotes the limit of where urban development is permitted within the incorporated area of the City. The intent is to discourage urban sprawl by containing urban development within designated areas. There are a handful of areas designated Urban Reserve Areas, which can be considered for development after land within the Urban Limit Line are developed and if additional land is needed. Notably, the 2019 General Plan retains the medium density residential designation for the site and does not change the Urban Limit Line relative to the Project site.

The relevant goals and policies of the 2019 General Plan Land Use and Growth Management Element are listed below. As can be seen below, many policies are similar to or the same as the policies contained in the 1993 General Plan.

Manage Growth and Maintain Community Character.

St. Helena is committed to preserving its existing community character, maintaining agricultural lands, managing growth and the impacts of tourism, and ensuring that adequate infrastructure and facilities are provided.

Promote High-Quality and Sustainable Development.

St. Helena is dedicated to a high standard of quality, economic viability and ecological sustainability with respect to the design, planning, and construction of new and renovated public and private facilities.

Growth Management

Policy LU1.1: Require new development to occur within well-defined boundaries and be consistent with the ability to provide urban services. New development should mitigate infrastructure impacts by using sustainable, best management practices in green building and stormwater management and paying its share of development impact fees, while minimizing impacts on sewer, water, energy, and natural resources.

Policy LU1.2: Allow urban development to occur only within the Urban Limit Line. Consider an exception for on-site employee housing on Agricultural lands. Urban services, such as sewer, water, and storm drainage, will only be extended to development within the Urban Limit Line.

Policy LU1.3: Support agricultural and low-intensity uses beyond the Urban Limit Line.

Policy LU1.4: In order to minimize and postpone the need for expansion of the Urban Limit Line, encourage infill development within currently developed areas.

Policy LU1.5: Require new development to provide adequate infrastructure and urban services, including compliance with the policies and implementing actions affecting new development as set forth in the Public Facilities and Services Element.

Policy LU1.7: Continue to limit the approval of market rate residential development to the maximum allowed under the Growth Management System. Regulated affordable units and second units are exempt from this limitation.

Implementing Action LU1.A: Continue to allow the construction of second units – also known as accessory dwelling units – and consider allowing the division of single-family homes into two or more units under appropriate circumstances, in order to increase

residential density and housing availability without requiring an extension of the Urban Limit Line.

Residential Neighborhoods

Policy LU2.1: Promote a mix of housing types and price ranges that are consistent with the Housing Element RHNA categories of housing affordability.

Policy LU2.2: Encourage new residential development that is consistent in design, size, color, and floor area ratio (FAR) with the older residences in the neighborhood.

Policy LU2.3: Protect residential neighborhood views of surrounding vineyards and mountains.

Policy LU2.4: Encourage the subdivision and/or development of larger parcels as Planned Unit Developments to ensure a more comprehensive and creative approach to planning the development as a single unit. This does not prohibit use of Planned Unit Developments on parcels less than three acres.

Policy LU2.5: Encourage the development of higher density housing in areas near the center of the city and close to recreation and services, such as transit, retail, and public facilities.

Policy LU2.6: Allow residential density at the higher end of the permitted range for single family development within Medium and High Density Residential Land Use designations as long as the development character of the single family area is maintained, including lot widths, orientation to street, building heights, onsite parking, traffic, and noise, among other considerations.

Policy LU2.7: Ensure safe, walkable, and bikeable residential neighborhoods and vibrant, livable streets.

City of St. Helena Housing Element Update 2015–2023 Goals, Policies, and 8-Year Action Plan

The purpose of the Housing Element is to establish a comprehensive plan to address housing needs in the City over the eight-year planning period between January 31, 2015 and January 31, 2023. Every jurisdiction in the state is required to submit a Housing Element to ensure the housing needs of all residents are being met. The Housing Element establishes the community goals, and policies surrounding the development, rehabilitation, and preservation of housing units to meet the needs of City residents (present and future). The City's Housing Element was adopted in May 2015.

Applicable goals and supporting policies from the Housing Element are as follows:

- **Goal 1 - A Diversity of Housing to Meet Local Needs:** Facilitate development of a variety of housing types to meet the full range of housing needs in our community, with particular emphasis on housing for our local workforce, people with special housing needs, and people with extremely low, very low, low and moderate incomes.
- **Policy HE1.3:** Encourage the development of affordable housing and remove development constraints as feasible.
- **Goal 2 - Efficient Land Use and High Quality Neighborhoods**: Make efficient use of land within the Urban Limit Line to protect agricultural lands, promoting compact, well-designed developments that 'fit in' with existing neighborhoods and contribute to the overall livability of our community. Encourage a balance of housing types throughout the entire community.
- **Policy HE2.1:** Encourage higher density development where appropriate.
- **Policy HE2.2:** Ensure that higher density housing opportunity sites are not lost to lower density uses.
- **Policy HE2.4:** Promote second unit production.
- **Policy HE2.6:** Promote a balance of types of housing throughout the whole community.

St. Helena Municipal Code –Title 17 Zoning

The City of St. Helena Municipal Code, Title 17 Zoning is designed to protect and promote the public health, safety, and general welfare of the citizens of St. Helena and provides the purpose, permitted and conditional uses, and any special district provisions for the City's various zoning districts.

Excerpts from applicable sections from the Title 17 of the City's Municipal Code are included below.

Chapter 17.40 Medium Density Residential District

Section 17.40.010 Purpose

The MR district is established for consistency with the medium density residential general plan designation. The district provides for single-family detached homes, accessory dwelling units, limited agricultural uses and compatible uses. Residential densities shall not be less than 5.1 dwelling units per acre nor more than 16 dwelling units per acre (Ord. 07-5 § 2 (part): Ord. 05-4 § 1 (part): prior code § 27.50).

Section 17.40.030 Conditional Uses

The following uses require approval of a use permit as regulated by Chapter 17.168:

A. New construction of one single-family dwelling on parcels where the minimum density is two units or greater, pursuant to Section 17.40.060;

B. New attached duplex or triplex units or conversion of an existing single-family dwelling to duplex or triplex, compatible with the design and architecture of the neighborhood and consistent with the density and floor area ratio of the district;

Chapter 17.116 Accessory Building, Structures, Dwelling and Uses

Section 17.116.030 Accessory Dwelling Units

The purpose of this section is to allow and regulate accessory dwelling units (ADUs) and junior accessory dwelling units (JADUs) in compliance with California Government Code Sections 65852.2 and 65852.22, which allows development of ADUs within land zoned for single-family residential. The City also allows ADUs on land zoned for multifamily dwelling residential use. This section establishes the parameters for development including size, height, setbacks, parking requirements, fees and use of ADUs.

Chapter 17.146 Housing Trust Fund, Housing Impact Fee, and Inclusionary/In-lieu Fee Requirements

Section 17.146.050 Residential Development Project—Inclusionary/in-lieu Fee Requirements

A. Inclusionary Requirement. At least twenty percent (20%) of all new dwelling units in a residential development project shall be affordable units, which shall be constructed and completed not later than the related market rate units. For fractions of affordable units, including fractions resulting from construction of less than five dwelling units, the developer may elect, at his or her option, to construct the next higher whole number of affordable units, perform an alternative equivalent action which has received the approval of the city council pursuant to subsection B, or pay the housing in-lieu fee specified in subsection E for such fraction.

B. Alternative Equivalent Proposal.

    1. A developer of any residential project may propose to meet the requirements of subsection A with an alternative equivalent action, subject to the review and approval of the city council. Proposals for alternative equivalent actions may include, but are not limited to, dedication of vacant land, the construction of affordable units on another site, or acquisition and enforcement of required rental/sales price restrictions on existing standard dwelling units consistent with this section. Any proposal shall

show how the alternative action will further affordable housing opportunities in the city to an equal or greater extent than compliance with the express requirements of subsection A or payment of the appropriate in-lieu housing fee.

2. Alternative equivalent action proposals for single-family and multifamily residential developments shall be considered on a case-by-case basis by the city council, and may be approved at the city council's sole discretion, if the city council determines that such alternative will further affordable housing opportunities in the city to an equal or greater extent than compliance with the express requirements of subsection A.

C. In-Lieu Housing Fee. A developer of four or fewer residential dwelling units which are the whole of a residential development project may meet the requirements of subsection A through payment of an in-lieu fee.

A developer of any other residential project may propose to meet the requirements of subsection A through payment of an in-lieu fee by showing good cause that it is not feasible to construct the required units. A written request shall be submitted with the developer's application for a discretionary approval or building permit, whichever comes first. The request shall include: a statement identifying all overriding conditions that prevent the developer from meeting the requirement to construct the affordable units; sufficient independent data, including appropriate financial information, to support the developer's claim that it is not feasible to construct the required affordable units; and a detailed analysis of why the concessions and incentives identified in subsection F cannot mitigate the conditions that are preventing the developer from constructing the affordable units. The housing director shall review all such requests and prepare a recommendation for the city council. Such requests shall be considered on a case-by-case basis by the city council, and may be approved if the council determines that there are overriding conditions which prevent the developer of a multifamily residential project from meeting the requirement to construct affordable units, and that payment of the in-lieu fee will further affordable housing opportunities to an equal or greater extent.

I. Basic Requirements for Owner-Occupied and Rental Affordable Units. Affordable units shall be comparable in number of bedrooms, exterior appearance and overall quality of construction to market rate units in the same residential project. Subject to the approval of the planning commission, square footage of affordable units and interior features in affordable units need not be the same as or equivalent to those in market rate units in the same residential project, so long as they are of good quality and are consistent with contemporary standards for new housing. Affordable units shall be dispersed throughout the residential project, or, subject to the approval of the planning commission, may be clustered within the residential project when this furthers affordable housing opportunities.

Chapter 17.152 Residential Growth Management System

The City's Residential Growth Management System is no longer enforceable because the state passed Senate Bill 330 (see Government Code Section 66300), otherwise known as the Housing Crisis Act of 2019. Government Code Section 66300 includes language that prevents cities from "establishing or implementing any provision that . . . [a]cts as a cap on the number of housing units that can be approved or constructed either annually or for some other period" (Section 66300(b)(1)(D)(ii) [emphasis added]). Therefore, the City can no longer implement a restriction on the number of residential units that can be constructed and this ordinance is no longer enforceable.

3.10.4 Impacts

Methods of Analysis

Section 15125(d) of the CEQA Guidelines, requires than an EIR shall discuss any inconsistencies with applicable general plans, specific plans, and regional plans as part of the environmental setting. Applicable land use plans considered in this analysis include the City's 1993 General Plan, 2015–2023 Housing Element, Zoning Ordinance (Title 17), and ABAG's Metropolitan Transportation Plan/SCS.

The consistency analysis with the 1993 General Plan focuses on potentially significant environmental impacts that would result from a conflict with a policy adopted for the purpose of avoiding or mitigating an environmental effect. Under state law, a development project cannot be approved if it is inconsistent with the General Plan. Ultimately, it is within the City's decision makers' purview to decide if the Proposed Project is consistent with the General Plan. Because policies in a general plan reflect a range of competing interests, the City's decision makers are allowed to weigh and balance the plan's policies when applying them, and have broad discretion to construe its policies in light of the plan's purposes. As previously discussed, a policy consistency analysis with the 2019 General Plan is not included. Even so, generally, the policies in the 2019 General Plan are very similar to the policies contained in the 1993 General Plan. For informational purposes and a brief overview of policies that differ from the 1993 General Plan will be provided.

The Proposed Project's consistency with applicable ordinances are discussed in this section and in other technical sections of this Draft EIR. This section also considers any inconsistencies with ABAG's Metropolitan Transportation Plan/SCS, a regional land use and transportation plan. The analyses of consistency with other planning documents (e.g., regional air quality plans) are provided in the applicable technical sections in Chapter 3 of this Draft EIR.

Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Physically divide an established community.
- Cause a significant environmental impact due to a conflict with any land use plan, policy or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this document.

Physically Divide Established Community

The Project site is undeveloped and generally surrounded by development on the south, southeast and southwest with undeveloped land generally located to the northwest and northeast. The Proposed Project is a Tentative Subdivision Map to develop the site with a residential subdivision consistent with the existing neighborhoods generally located to the southwest and southeast of the site. Due to the Proposed Project's location, development of the Proposed Project would not physically divide an established community because there is no development northwest or northeast of the site. The Proposed Project would, instead, provide a continuation of the existing neighborhood with development of a new residential area. Development of the Project site would not divide an established community (first threshold criteria); therefore, this issue is not further addressed below.

Impacts and Mitigation Measures

3.10-1: Would the Proposed Project conflict with the City's 1993 General Plan policies or other regulations adopted for the purpose of avoiding or mitigating an environmental effect? This impact would be less than significant.

City of St. Helena 1993 General Plan

The Proposed Project includes approval of a Tentative Subdivision Map to develop a vacant site with residential uses consistent with the underlying land use designation and zoning that would provide a diversity of housing choices, including single family residences, ADUs, and attached multifamily units. Currently the site is designated as MDR in the City's 1993 General Plan and

the Proposed Project is not requesting a General Plan Amendment to redesignate the existing land use designation.

General Plan Guiding policies 2.6.1 through 2.6.4 support infill development within the City's Urban Service Area and growth in existing urbanized areas where City services are in place to support new development. Policy 2.6.4 encourages infill development and higher densities to minimize the need to expand the City's Urban Services Area. Implementing policy 2.6.6 limits land designed for urban uses to areas that can reasonably be predicted to be developed. Areas not slated for urban development shall be designated for non-urban uses. The Project site is located within the City's Urban Limit Line and Urban Services Area within a few blocks of downtown St. Helena adjacent to existing residential uses and infrastructure where City services are available. The site has been designated and zoned for residential development for over 25 years and has access to City services.

Policies 2.6.9 and 2.6.10 and the City's Residential Growth Management System (Municipal Code Chapter 17.152) limit the City's approval of residential units and imposes a cap on the total number of residential units to 2,850 Citywide by 2010. These policies were included in the General Plan to slow growth in order to ensure that the diverse housing needs of the community are met, development of new housing occurs in designated areas, and to ensure adequate public facilities and services are available to support new residential development. Due to passage of SB 330 otherwise known as the Housing Crisis Act of 2019, the City's Residential Growth Management System that limits residential development is no longer enforceable so consistency with these policies would not apply to this Proposed Project.

Policies 2.6.14 through 2.6.21 are focused on residential development and encourage a mix of housing types, densities and price ranges consistent with the scale and character of existing neighborhoods; encourage higher density in single family neighborhoods keeping the same development character; minimize large lot development and encourage "planned unit developments" to complement existing community character; minimize blocking views of surrounding vineyards; and encourage new residential projects to facilitate alternative transportation modes. The Proposed Project applicant is only requesting approval of a Tentative Subdivision Map at this time. Therefore, no design details are included as part of this Proposed Project. The Proposed Project applicant would require additional subsequent approvals from the City including design review, site development plan and a use permit (to construct attached multifamily units in the MDR district) in order to engage in any construction of new residences.

The Tentative Subdivision Map includes 51 single-family lots and a 3.4-acre parcel to include 25 attached multifamily units, reflecting a mix of housing types. In addition, 11 of the 51 single-family lots would include an ADU. Therefore, the Proposed Project's proposed density would be 5.1

dwelling units/acre, assuming a total of 87 units. (Section 17.116.030 of the Zoning Ordinance does allow ADUs to exceed maximum density provided there is only one ADU per parcel).

The Proposed Project provides sidewalks on all interior roads to encourage walking and bike access throughout the Project site. The existing vineyard on the Project site occupies approximately 6.8 acres and would be removed with the exception of a small portion of the vineyard (approximately 1 acre) that would remain located in the southwestern "panhandle" portion of the site. Currently there are no views of other existing vineyards in the existing agricultural lands to the north, northeast and northwest that could be blocked by residential development (see also Section 3.1 for a discussion of visual impacts and related policies).

The Proposed Project would not conflict with the City's 1993 General Plan policies related to environmental protection and would not result in a significant environmental effect related to land use plan consistency. The impact is **less than significant.**

2019 General Plan ("General Plan Update 2040")

As noted previously, the Proposed Project is not required to demonstrate consistency with the City's adopted 2019 General Plan Update because it was not adopted when the Proposed Project application was filed and deemed complete in 2011. In general, the 2019 General Plan goals and policies are very similar to the goals and policies included in the 1993 General Plan. The notable differences include that the 2019 General Plan eliminates the Urban Service Area and updates the Urban Limit Line, and designates Urban Reserve Areas (which can only be considered for development if there is no developable land within the Urban Limit Line). The 2019 General Plan Update also supports agricultural and low-intensity uses beyond the Urban Limit Line (Policy LU1.3), and allows an exception for on-site employee housing to be developed on agricultural lands outside of the Urban Limit Line (Policy LU1.2**)**. Overall, the intent of the policies to discourage urban sprawl by containing urban development within the Urban Limit Line and designated areas is consistent with the policy direction provided in the 1993 General Plan. The Proposed Project is consistent with the intent of the 2019 General Plan land use policies to discourage sprawl and to develop areas within the Urban Limit Line.

Housing Element Update 2015-2023 Goals, Policies, and Eight-Year Action Plan

The City's Housing Element includes goals and policies that address the need for the City to provide a diversity of housing and to use land efficiently in creating livable neighborhoods. The Proposed Project includes a mix of single-family residences and ADUs as well as 25 multifamily affordable units, designated for Very Low-income (5 units) and the Moderate-income category (20 units). The inclusion of a mix of housing units meets the intent of Goal 1 and policies HE1.3, HE2.4, and HE2.6 which encourages the development of a variety of housing in the City, including affordable units and second, or accessory units.

The Project site is located within the City's Urban Limit Line and as discussed above, has been designated for residential development for over 25 years, since 1993. The Project site is included in the vacant land inventory in the Housing Element. The site is located adjacent to residential development to the south, southwest and east and is adjacent to the limit of the City's Urban Limit Line. To ensure the protection of agricultural lands to the north, northeast/northwest, the City has zoned the Project site for MDR which allows a higher density. This encourages more compact development in order to limit encroaching into lands farther away from existing infrastructure and services. Given its location adjacent to existing development, the Project site is served by existing infrastructure including roads, water, sewer, and storm drain and is within a short walk of downtown St. Helena and the City Library. These factors contribute to meeting the intent of policies HE2.1 and HE2.2, which encourage higher density housing to protect agricultural lands and to encourage a balance of housing types (Goal 2). Overall, the Proposed Project is consistent with the City's Housing Element and the impact is **less than significant.**

City of St. Helena Zoning Ordinance

A zoning designation applied to the Project site must be consistent with the General Plan and the anticipated uses of the site. The proposed land uses and density of the Proposed Project is consistent with the 1993 General Plan (and 2019 General Plan) MDR land use designation and MR zoning.

Chapter 17.152 of the Zoning Ordinance implements the City's Residential Growth Management System, intended to regulate residential growth of the City to approximately 2% per year. As stated previously this imposes a cap on the total number of residential units to 2,850 Citywide by 2010 (included as Implementing Policy 2.6.11 of the 1993 General Plan). However, the City's Residential Growth Management System is no longer enforceable due to the passage of SB 330 (see Gov't Code Section 66300) otherwise known as the Housing Crisis Act of 2019. This act prevents cities from establishing or implementing any provision that imposes a limit on the number of housing units that can be approved or constructed annually or for some other period. Therefore, as the City can no longer implement a restriction on the number of residential units that can be constructed, the Proposed Project does not have to be consistent with this chapter of the Zoning Ordinance.

The Tentative Subdivision Map includes a 3.4-acre lot (Lot 52) designated for 25 multifamily affordable housing units and also proposes to develop 11 ADUs consistent with Section 17.116.030 of the Zoning Ordinance. The City would enter into an Affordable Housing Agreement in conjunction with the approval of the Tentative Subdivision Map. The Tentative Subdivision Map and the Proposed Project's Affordable Housing Agreement must be consistent with the City's Housing Trust Fund, Housing Impact Fee, and Inclusionary/In-lieu Fee

Requirements (Chapter 17.146). Under Section 17.146.050(g)(2), if "the developer is required to build four or more units of affordable housing, the number of affordable units which are required to be constructed in very low, low or moderate units shall be determined by the ratio of units needed in each of those categories in order to satisfy the City's fair share housing goals." Per the City's Regional Housing Needs Allocation, the Proposed Project's multifamily rental units should be rented to 25% very low-income households, 17% low income households, and 21% moderate income households. The Proposed Project is proposing moderate and very low-income restricted units, with no units designated for low income single-family houses as required by the City's inclusionary housing requirements. Additionally, Section 17.146.050(I) states that affordable units should be comparable in number of bedrooms with an exterior appearance consistent with a project's market rate housing and be dispersed throughout a project site. As proposed, the ADUs would not have a comparable number of bedrooms to the market rate units, and the 25 multifamily affordable housing units would be located on a single 3.4-acre parcel (Lot 52) with 11 ADUs scattered throughout the other 51 single-family lots. Because these units are not comparable to the proposed single-family units in number of bedrooms and are not dispersed throughout the site the Proposed Project would be required either develop an alternative equivalent proposal or pay an in-lieu fee, both of which require approval by the City Council.

As indicated previously, the Proposed Project applicant is only requesting approval of a Tentative Subdivision Map at this time. The map is consistent with the development standards of the MR zoning district. Note that only the lot configuration of the proposed subdivision can be assessed at this time; individual structures must comply with the MR development standards, including setbacks, height and lot coverage, at the time those applications are submitted. In addition, as noted in Chapter 2, Project Description, the Proposed Project would also be subject to the City's design review process. Future construction of the attached multifamily units would require approval of a conditional use permit.

If the Proposed Project is approved, additional discretionary and ministerial approvals would be required including design review and a conditional use permit for the multifamily housing. This would require the Proposed Project applicant to demonstrate compliance with specifics of the Zoning Ordinance as well as the City's Municipal Code. Because the approvals the applicant is requesting at this time are consistent with the City's Zoning Ordinance the impact is **less than significant.**

Plan Bay Area 2040

The Plan Bay Area 2040 is the Regional Transportation Plan and SCS for the nine-county San Francisco Bay Area, which includes Napa County. The Plan assumes development of the Project site with residential uses, consistent with the City's 1993 (and 2040 General Plan) land use designation, and due to its location near downtown, it is consistent with the goal of SB 375 to reduce greenhouse gas emissions from cars and light trucks by developing new uses near

existing infrastructure and alternative transportation choices. The Proposed Project as proposed is consistent with the Plan Bay Area 2040 and the impact is **less than significant.**

Mitigation Measures

None required.

3.10.5 Cumulative Impacts

The land use analysis in an EIR does not typically include a discussion of cumulative impacts because the consistency analysis for applicable land use goals and policies is not an additive effect.

3.10.6 References

Association of Bay Area Governments. 2017. Plan Bay Area 2040 Draft Environmental Impact Report. April 2017.

City of St. Helena. 1993. City of St. Helena 1993 General Plan. September 28, 1993.

City of St. Helena. 2019. City of St. Helena General Plan Update 2040. May 2019.

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3.11 NOISE AND VIBRATION

3.11.1 Introduction

This section presents potential noise and vibration impacts of the proposed Hunter Subdivision Project (Proposed Project), which includes the environmental setting and existing ambient noise conditions, regulatory framework, potential short-term and long-term noise and vibration impacts, and proposed measures to mitigate any identified significant impacts.

A total of four comments were received that raised concerns regarding noise and vibration in response to the Notice of Preparation. Two of the comments stated that noise associated with the Proposed Project was a concern; one comment indicated that construction noise needed to be evaluated; the final comment pointed out the presence of a senior residential development in the vicinity of the Project site, and as such it was important to maintain peace and quiet in the area. Concerns regarding noise are addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information contained in this section is based on the proposed tentative map, the Federal Highway Administration (FHWA) Roadway Construction Noise Model and the FHWA Traffic Noise Model (TNM 2.5) used to estimate Proposed Project noise emissions, the California Department of Transportation's Technical Noise Supplement to the Traffic Noise Analysis Protocol (Caltrans 2013), and Federal Transit Authority (FTA) Transit Noise And Vibration Impact Assessment (FTA 2006). The analysis is based on noise and vibration modeling, which can be found in Appendix I. Other sources consulted are listed in Section 3.11.6, References.

3.11.2 Environmental Setting

Vibrations, traveling as waves through air from a source, exert a force perceived by the human ear as sound. Sound pressure level (referred to as sound level) is measured on a logarithmic scale in decibels (dB) that represent the fluctuation of air pressure above and below atmospheric pressure. Frequency, or pitch, is a physical characteristic of sound and is expressed in units of cycles per second or hertz. The normal frequency range of hearing for most people extends from about 20 to 20,000 hertz. The human ear is more sensitive to middle and high frequencies, especially when the noise levels are quieter. As noise levels get louder, the human ear starts to hear the frequency spectrum more evenly. To accommodate for this phenomenon, a weighting system to evaluate how loud a noise level is to a human was developed. The frequency weighting called "A" weighting is typically used for quieter noise levels which de-emphasizes the low frequency components of the sound in a manner similar to the response of a human ear. This A-weighted sound level is called the "noise level" and is referenced in units of dBA.

Since sound is measured on a logarithmic scale, a doubling of sound energy results in a 3 dBA increase in the noise level. Changes in a community noise level of less than 3 dBA are not typically noticed by the human ear. Changes from 3 to 5 dBA may be noticed by some individuals who are extremely sensitive to changes in noise. A 5 dBA increase is readily noticeable (EPA 1973). The human ear perceives a 10 dBA increase in sound level as a doubling of the sound level (i.e., 65 dBA sounds twice as loud as 55 dBA to a human ear).

An individual's noise exposure occurs over a period of time; however, noise level is a measure of noise at a given instant in time. Community noise sources vary continuously, being the product of many noise sources at various distances, all of which constitute a relatively stable background or ambient noise environment. The background, or ambient, noise level gradually changes throughout a typical day, corresponding to distant noise sources, such as traffic volume, as well as changes in atmospheric conditions.

Noise levels are generally higher during the daytime and early evening when traffic (including airplanes), commercial, and industrial activity is the greatest. However, noise sources experienced during nighttime hours when background levels are generally lower can be potentially more conspicuous and irritating to the receiver. To evaluate noise in a way that considers periodic fluctuations experienced throughout the day and night, a concept termed "community noise equivalent level" (CNEL) was developed, wherein noise measurements are weighted, added, and averaged over a 24-hour period to reflect magnitude, duration, frequency, and time of occurrence. A complete definition of CNEL and other terminology used to describe noise is provided in Table 3.11-1.

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). Sound generated by a point source typically diminishes (attenuates) at a rate of 6.0 dBA for each doubling of distance from the source to the receptor at acoustically "hard" sites and at a rate of 7.5 dBA for each doubling of distance from source to receptor at acoustically "soft" sites. Sound generated by a line source (i.e., a roadway) typically attenuates at a rate of 3 dBA and 4.5 dBA per doubling distance, for hard and soft sites, respectively. Sound levels can also be attenuated by man-made or natural barriers. For the purpose of the sound attenuation discussion, a "hard" or reflective site does not provide any excess ground-effect attenuation and is characteristic of asphalt or concrete ground surfaces, as well as very hard-packed soils. An acoustically "soft" or absorptive site is characteristic of unpaved loose soil or vegetated ground.

Table 3.11-1
Definitions of Acoustical Terminology

Term	Definition
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of two like quantities
Sound Pressure Level (SPL)	10 times the logarithm to the base 10 of the ratio between the square of the sound to the square of the reference sound pressure of 20 µPascals. Sound pressure level is the quantity that is directly measured by a sound level meter and expressed in dB.
Frequency (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 hertz and 20,000 hertz.
A-Weighted Sound Level (dBA)	SPL in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de- emphasizes low and high frequency components of frequency components of sound in a manner similar to the frequency response of the human ear and correlates well with subjective response to sound. All sound levels in this report are A-weighted.
Noise	Unwanted sound.
Equivalent Sound Level (Leq)	The average A-weighted sound level during the measurement period. For this CEQA evaluation, Leq refers to a one-hour period unless otherwise stated.
Lmax, Lmin	The maximum and minimum A-weighted sound level during the measurement period.
L01, L10, L50, L90	The A-weighted sound levels that are exceeded l%, l0%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level (Ldn)	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured during the night between l0 pm and 7 am.
Community Noise Equivalent Level (CNEL)	The average A-weighted sound level during a 24-hour day, obtained after addition of S decibels in the evening from 7 p.m. to l0 p.m. and after addition of l0 decibels to sound levels during the night between l0 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Impulsive Noise	Noise loud enough to disrupt normal activities and usually lasting less than one second.

Source: St. Helena General Plan 1993.

Fundamentals of Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. The response of humans to vibration is very complex. However, it is generally accepted that human response is best 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 perceived by building occupants as perceptible vibration. It is also common for ground-borne vibration to cause windows, pictures on walls, or items on shelves to rattle. Although the

perceived vibration from such equipment operation can be intrusive to building occupants, the vibration is seldom 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, it is common to express vibration amplitudes 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 per second RMS). Vibration levels in the 70 to 75 VdB range are often noticeable, but generally deemed acceptable, and levels in excess of 80 VdB are often considered unacceptable (FTA 2006).

Vibration impacts to buildings are generally discussed in terms of peak particle velocity (PPV) that describes particle movement over time (in terms of physical displacement of mass, expressed as inches per second). Groundborne vibration generated by construction projects is usually highest during pile driving, rock blasting, soil compacting, jack hammering, and demolition-related activities. Next to pile driving and soil compacting, grading activity has the greatest potential for vibration impacts if large bulldozers, large trucks, or other heavy equipment are used. A conservative maximum vibration level standard is 0.2 inches per second PPV for the prevention of structural damage to typical residential buildings (Caltrans 2013).

Existing Noise Conditions

Project Site Noise Levels

The Project site is currently vacant land with a small vineyard area. The area surrounding the Project site is a mix of agricultural, residential, commercial offices, and open space. Residential properties are located adjacent to the south, southeast, and east of the Proposed Project, as well as approximately 500 feet to the west; the closest existing residences (including mobile homes) are located at distances from 20 feet to 65 feet from the property boundaries. A new single-family residence is currently under construction just west of the Project site. Commercial offices are located at the terminus of Adams Street (approximately 650 feet to the south) and a

preschool is located along Adams Street to the south of the offices (approximately 950 feet to the south of the Proposed Project boundary).

The ambient or existing noise environment is described on the basis of 24-hour measurements completed in the vicinity of the Project site. Existing noise levels were measured at the Project site boundaries in order to establish baseline noise conditions against which to compare Proposed Project operational noise levels, as shown in Figure 3.11-1, Noise Measurement Locations. A total of three 24-hour noise measurements were performed, one apiece on the southern, western, and northern property boundaries. Sound-level measurements were performed using SoftdB Piccolo 3 Models (ANSI Type II). American National Standards Institute (ANSI) Type II sound-level meters have sufficient accuracy to be used for environmental noise evaluation. The sound-level meters were calibrated before and after the 24-hours measurements using a Larson Davis Model CAL150 calibrator.

Table 3.11-2 summarizes the dates and start/stop times for each 24-hour measurement, as well as the calculated 24-hour weighted average noise level (CNEL). See Appendix I for data tables for each of the 24-hour measurement periods and the calculation of CNEL from the recorded hourly average values.

Table 3.11-2
Existing Ambient Noise Measurement Results

Location	Dates	Start Time	Stop Time	CNEL (dBA)
Southeast Property Boundary	10/16/2018 to 10/17/2018	11 AM	11 AM	48
Western Property Boundary				50
Northeast Property Boundary				52

Source: Dudek 2018.

Existing noise levels on site, and immediately adjacent to neighboring residential land uses, are well within the City's exterior noise exposure limit of 60 dBA CNEL for residential land uses (Refer to Section 3.11.3 – Local).

3.11.3 Regulatory Setting

Federal

Federal Highway Administration Standards

Code of Federal Regulations (CFR) Title 23, Part 772 sets procedures for the abatement of highway traffic noise and construction noise. Title 23 is implemented by the Federal Department of Transportation FHWA. The purpose of this regulation is to provide procedures for noise studies and noise abatement measures to help protect the 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 which are developed in conformance with this regulation shall be deemed to be in conformance with the Department of Transportation 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 FTA standards are intended for federally funded mass transit projects, the impact assessment procedures and criteria included in the FTA's Transit Noise and Vibration Impact Assessment Manual (FTA 2006) are routinely used for projects proposed by local jurisdictions. The FTA and Federal Railroad Administration have published guidelines for assessing the impacts of ground-borne vibration associated with rail projects, which have been applied by other jurisdictions to other types of projects. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 inches per second perturbation projection vector (PPV).

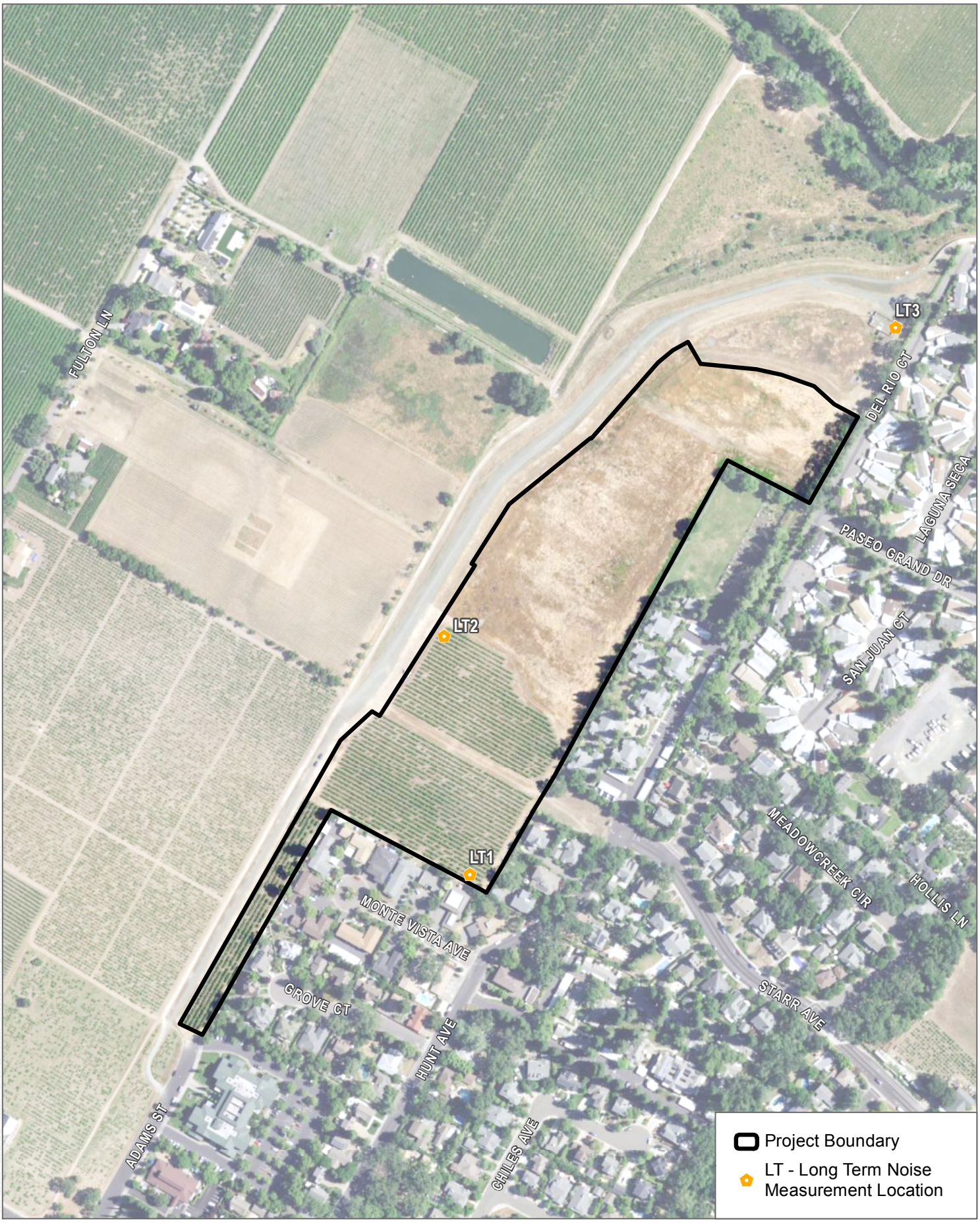
State

California Noise Control Act of 1973

Sections 46000 through 46080 of the California Health and Safety Code, 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. It also identifies a continuous and increasing bombardment of noise in the urban, suburban, and rural areas. The California Noise Control Act declares that the State of California has a responsibility to protect the health and welfare of its citizens by the control, prevention, and abatement of noise. It is the policy of the state to provide an environment for all Californians free from noise that jeopardizes their health or welfare.

California Noise Insulation Standards (CCR Title 24)

In 1974, the California Commission on Housing and Community Development adopted noise insulation standards for hotels, motels, dormitories, and multi-family residential buildings (CCR Title 24, Part 2). Title 24 establishes standards for interior room noise (attributable to outside noise sources). The regulations also specify that acoustical studies must be prepared whenever a multi-family residential building or structure is proposed to be located in an area with CNEL (or L_{dn}) of 60 dBA or greater. Such acoustical analysis must demonstrate that the residence has been designed to limit intruding noise to an interior CNEL (or L_{dn}) of at least 45 dBA (California's Title 24 Noise Standards, Chap. 2-35).



SOURCE: Digital Globe 2017, Napa County 2015

DUDEK

0 160 320 Feet

FIGURE 3.11-1

Noise Measurement Locations

Hunter Subdivision Project

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Local

City of St. Helena 1993 General Plan

The Public Health and Safety Element of the City of St. Helena 1993 General Plan (City of St. Helena 1993) provides guiding and implementing policies regarding noise management, including the following:

> **Policy 8.3.1:** Maintain a city-wide noise environment that balances various City objectives while minimizing the impact of highway, railroad, and industrial noise on the public, while recognizing the agricultural basis of the community.
>
> **Policy 8.3.2**: Discourage noise-sensitive land uses from locating in areas with inappropriate or high noise levels based on the land use compatibility guidelines, interior noise level criteria, and the noise contour maps.
>
> **Policy 8.3.3**: Require new residential developments to implement noise mitigation measures when built in close proximity to noise sources such as Highway 29, the railroad tracks, and the Harold Smith & Sons gravel quarry. These developments should consider the resulting exterior as well as interior noise environment.
>
> **Implementing Policy 8.3.5:** Continue to consider the environmental impact of transportation-related noise and other noise sources in the review and approval of subdivision plans and requests for changes in the zoning ordinance.
>
> **Implementing Policy 8.3.6**: Adopt the Title 24 interior noise level standard of 45 dBA, Ldn in all habitable rooms for all dwelling units. Adopt a maximum allowable noise level standard of 60 dBA Ldn for residential exterior activity areas such as patios, back yards or recreational areas.
>
> I**mplementing Policy 8.3.11**: Require construction operations to use noise suppression devices and techniques and limit noisy construction activities to the least noise sensitive times (8 am to 5 pm, Monday through Friday).

The Public Health and Safety Element also prescribes recommended maximum exterior noise exposure levels for each land use, as presented in Table 3.11-3.

Table 3.11-3
Noise/Land Use Compatibility Guidelines

Land Use Category	Completely Compatible [a]	Tentatively Compatible [b]	Normally Incompatible [c]	Completely Incompatible [d]
Residential	< 55	55 to 60	60 to 75	75 >
Commercial/Office	< 65	65 to 75	75 to 80	80 >
Industrial/Agriculture	< 70	70 to 80	80 to 85	85 >
School/Library/Hospital	< 65	65 to 70	70 to 80	80 >
Playground, Park	< 67	67 to 70	70 to 75	75 >

Notes:

[a] Completely Compatible: the noise exposure is such that both the indoor and outdoor environments are pleasant, as long as noise sources do not cause the ambient noise to increase more than 5 dBA, and in the absence of intrusive and intermittent noise.

[b] Tentatively Compatible: the noise exposure is great enough to be of concern, but common building construction practices will make the living indoor environment acceptable, even for sleeping quarters, and the outdoor environment will be reasonably pleasant for recreation and play.

[c] Normally Incompatible: the noise exposure is so severe that unusual and costly building construction is necessary to ensure some tranquility inside one's home, and barriers must be erected between the site and prominent noise sources to make the outdoor environment tolerable.

[d] Completely Incompatible: the noise exposure at the site is so severe that construction costs to make the indoor living environment acceptable would be prohibitive and the outdoor environment would still be intolerable.

Source: 1993 St. Helena General Plan.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Public Health and Safety Element of the City of St. Helena 2019 General Plan (City of St. Helena 2019) provides guiding and implementing policies regarding noise management, including the following:

> **Policy PS2.1:** Preserve the current low levels of noise in St. Helena to maintain the City's rural atmosphere.
>
> **Policy PS2.2**: Maintain a citywide environment that balances various City objectives while minimizing the impact of highway, railroad, and industrial noise. The City should manage both indoor and outdoor noise levels to protect health and safety. A combination of noise standards and existing noise levels should be used to determine impacts and mitigation measures.
>
> **Policy PS2.3**: Minimize potential noise impact conflicts between land uses by regulating incompatible land uses. Encourage noise-generating uses to reduce their impacts while promoting land use patterns that avoid conflicts. Employ compatibility guidelines, interior noise level criteria, the City's noise standards, and noise contour maps to determine the compatibility of land uses.

Policy PS2.4: Require a reduction and/or control of the use of machinery, mechanical systems and other noise-making equipment and sources in and near residential areas where the noise impacts would be considered intrusive to adjacent residential property, unless consistent with the right-to-farm.

Policy PS2.5: An increase in average noise levels of 5 dBA or greater is considered to be significant and to constitute a noise impact by the noise source in question for the purpose of environmental analyses.

The Public Health and Safety Element also prescribes the same recommended maximum exterior noise exposure levels for each land use, as previously presented in Table 3.11-3.

St. Helena Municipal Code

The St. Helena Municipal Code, Chapter 8.24 of Title 8, the Health and Safety Code, specifies unnecessary noise which can be heard outside of any building by attaching any noise-producing attachment to any vehicle; or blowing or ringing any horn, whistle or bell; by operating a loudspeaker, public address system or sound amplification system; or by making any other loud or unusual noise which disturbs the peace of any other person would violate the ordinance unless permitted by the Chief of Police. Similarly, noise generated by commercial activities between the hours of 10.00 p.m. and 7:00 a.m. that can be heard at the property line of any parcel is prohibited, unless permitted by the Chief of Police.

Construction activities are limited to the hours between 8:00 a.m. and 5:00 p.m. Monday through Saturday. Construction is not allowed on Sundays and holidays (federal and local) if noise can be heard at the property line of any parcel of real property within the city limits. Delivery of materials/equipment and cleaning and servicing of machines/ equipment are limited to between 7:00 a.m. and 6:00 p.m.

3.11.4 Impacts and Mitigation Measures

Methods of Analysis

The analysis of existing and future noise environments is based on observations, noise level measurements, and computer modeling (model output data is included in Appendix I). Existing noise levels were monitored at selected on-site and off-site locations using ANSI Type II sound level meters for general environmental noise measurement instrumentation. Traffic noise modeling involved the calculation of existing and future traffic noise levels along roadway sections where the Proposed Project would contribute additional vehicle trips, as provided in the Proposed Project's traffic report (Appendix K), using the FHWA model. Vibration from transportation sources was not

evaluated in detail because it is not common for vibration from motor vehicles traveling on paved roads to cause disturbance or substantial annoyance in these areas.

Construction Noise and Vibration

Construction noise levels were determined using the FHWA's Roadway Construction Noise Model. For construction noise, this analysis assumed that compliance with conditions specified in the City's Noise Ordinance. Specifically, limiting construction to the hours of 8 a.m. to 5 p.m., Monday through Saturday, and prohibit construction activities on Sunday and holidays. For construction vibration, this analysis uses the FTA thresholds for structural damage (vibration-peak-particle velocities greater than 0.2 inches per second) and FTA's threshold for human annoyance within residences (80 VdB at residences where people normally sleep, for infrequent events).

For the purposes of noise modeling, it was conservatively assumed that construction of the Proposed Project would occur over a period of approximately 6 years. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the Proposed Project applicant and CalEEMod-generated default values. Complete detailed construction assumptions are included in Appendix I. Implementation of the Proposed Project would include construction of 87 residential units including 51 single-family residences, 11 accessory dwelling units, and 25 multi-family units.

As described in Chapter 2, Project Description, the Proposed Project would grade an approximately 17-acre site. Some soil export would be required to balance the site. Soil balance would occur within each subset area and hauling would not be required between subset areas. Balancing activities are anticipated to be performed through the use of off-road construction equipment (e.g., excavators, graders, dozers, and scrapers). The construction equipment mix used for estimating the construction noise emissions of the Proposed Project is shown in Table 3.11-4. Notably, because detailed specific information regarding the construction equipment fleet is unknown at the time of analysis, the analysis is based on the default construction equipment fleet provided by CalEEMod.

Table 3.11-4
Construction Equipment List by Phase

Construction Phase	Equipment	Quantity
Site Preparation	Rubber Tired Dozers	3
	Tractors/Loaders/Backhoes	4
Grading	Excavators	2
	Graders	1
	Rubber Tired Dozers	1
	Scrapers	2

Table 3.11-4
Construction Equipment List by Phase

Construction Phase	Equipment	Quantity
	Tractors/Loaders/Backhoes	2
Paving	Pavers	2
	Paving Equipment	2
	Rollers	2
Building Construction	Cranes	1
	Forklifts	3
	Generator Sets	1
	Tractors/Loaders/Backhoes	3
	Welders	1
Architectural Coating	Air Compressors	1

Source: See Appendix I for details.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act (CEQA) Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Generation of excessive groundborne vibration or groundborne noise levels.
- For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

Noise Significance Criteria Applicable to the Proposed Project

Based on the City's 1993 General Plan Public Safety Element and Municipal Code (Chapter 8.24), as well as standards adopted by other agencies that are customarily applied to the assessment of short-term noise generation, the Proposed Project would have a significant impact on noise if it would result in:

- Construction, between the hours 8:00 a.m. and 5:00 p.m. Monday through Saturday, construction noise levels greater than 90 dBA Leq at any vicinity residence (FTA 2006). Also, any noise generating construction activities occurring between 5:00 p.m. and 8 a.m. weekdays and Saturdays, or any time on Sundays or holidays (St. Helena 1993).

- Construction, the exposure of existing structures in the Proposed Project vicinity to vibration levels exceeding 0.2 inches per second PPV, or exposure of residents to vibration levels of 80 VdB in residences where people normally sleep, for infrequent events (FTA 2006).
- Proposed Project operation, generation of noise in excess of 60 dBA Ldn at the property line for any existing residential properties in the Proposed Project vicinity (St. Helena 1993).
- Proposed Project operation, an increase of 3 dBA CNEL or more in existing roadway traffic noise levels, as a result of the addition of Proposed Project generated traffic on vicinity roadways (Caltrans 2013).

Threshold Criteria not Applicable to the Proposed Project

Due to the location and characteristics of the Proposed Project, certain significance criteria are not applicable and therefore, are not considered potential impacts. These criteria are addressed briefly below and are not discussed further in this document.

Airports/Airport Land Use Plan

The Project site is not located within two miles of an airport, the closest airport is Angwin-Parrett Field airport approximately 4.5 miles north-northeast of the Project site. Therefore, future residents would not be exposed to elevated noise levels from aircraft operation and airport noise issues (last significance threshold listed above) are not addressed further in the analysis.

Impacts and Mitigation Measures

3.11-1: Would the Proposed Project result in a temporary (short-term) increase in construction noise levels that would cause a substantial increase in ambient noise levels and exceed City standards? This impact would be potentially significant.

Construction of the Proposed Project would generate noise that could expose nearby receptors (residences) 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, duration of the construction phase, distance between the noise source and receiver, and intervening structures. Noise from construction equipment generally exhibits point source acoustical characteristics. A point source sound is attenuated (or reduced) at a rate of 6 dB per doubling of distance from the source for “hard site” conditions and at 7.5 dB per doubling of distance for “soft site” conditions. These rules apply to the propagation of sound waves with no obstacles between source and receivers, such as topography (ridges or berms) or structures. The range of maximum noise levels for various types of construction equipment is provided in Table 3.11-

5. Typical operating cycles may involve two minutes of full power, followed by 3 or 4 minutes at lower levels.

Table 3.11-5
Construction Equipment Noise Emission Levels

Equipment	Typical Sound Level (dB) - 50 feet from Source
Air Compressor	81
Backhoe	80
Compactor	82
Concrete Mixer	85
Crane, Mobile	83
Dozer	85
Generator	81
Grader	85
Loader	85
Paver	89
Pneumatic Tool	85
Pump	76
Roller	74
Saw	76
Scraper	89
Truck	88

Source: FTA 2006.

Whereas Table 3.11-5 shows the noise level of individual pieces of equipment, the noise levels shown in Table 3.11-6 take into account operation of multiple pieces of construction equipment simultaneously, and lists the typical overall noise levels that would be expected for each phase of construction. These noise levels are based on surveys conducted by the United States Environmental Protection Agency in 1971. In the time since 1971, regulations have been enforced to improve noise generated by certain types of construction equipment to meet worker noise exposure standards. Also, because of stringent air quality emissions standards, newer, cleaner, and quieter heavy equipment is used on most construction projects in California. Thus, construction phase noise levels indicated in Table 11.3-6 represent “worst-case” conditions. As the table shows, the highest noise levels are expected to occur during the grading/excavation and building construction phases of construction.

Table 3.11-6
Outdoor Construction Noise Levels by Phase

Construction Phase	Adjacent Residence at 20 Feet (dBA L_{eq})	Adjacent Mobile Home Park at 65 Feet (dBA L_{eq})	Acoustic Center at 97 Feet (dBA L_{eq})
Site Preparation	92	82	79
Grading/Excavation	95	85	81
Building Construction	94	84	80
Paving	89	79	75
Finishing	82	71	68

Notes: dBA = A-weighted decibel; L_{eq} = energy equivalent sound level.
Source: Roadway Construction Noise Model, see Appendix I.

As shown in Table 3.11-6, construction-related noise levels could reach up to 95 dBA L_{eq} at residential property lines to the east of the Project site. The City exempts construction activity noise from standard exterior noise exposure limits, if conducted during specific limited daytime hours. The City's Health and Safety Code (Chapter 8.24 of Title 8, the Health and Safety Code) requires noise generating construction activities (including demolition, excavation, and building construction), be restricted to the hours between 8:00 a.m. and 5:00 p.m., Monday through Saturday, and prohibited on Sunday and holidays (City of St. Helena Chapter 8.24). This ensures that sensitive receptors are not disturbed by early morning or late night activities. However, the City's 1993 General Plan includes Implementing Policy 8.3.11, which states "Require construction operations to use noise suppression devices and techniques and limit noisy construction activities to the least noise sensitive times (8 a.m. to 5 p.m., Monday through Friday)." Due to the proximity of residences to the Project site and the potential for construction noise to be an annoyance, as well as the closest adjacent offsite residence potentially being exposed to levels exceeding 90 dBA L_{eq} for the first three construction phases and thus greater than the FTA guidance threshold, the impact is considered **potentially significant.**

Mitigation Measures

Mitigation Measure NOI-1 would substantially lessen construction noise upon adjacent residences by requiring administrative controls, engineering controls, and/or installation of sound abatement. Installation of an effectively placed storage container or a temporary plywood or blanket barrier on a portion of the site boundary that blocks line-of-sight between the source(s) of noise emission and the receptor of concern (e.g., residence) would be expected to provide a minimum of 3-5 dBA of noise reduction. By way of examples, doubling the distance of an operating generator from a receptor would be expected to yield a 6 dB reduction in noise. Proper engine mufflers installed on construction equipment helps ensure that source sound emission levels are further reduced. Implementation of Mitigation Measure NOI-1 would help minimize construction noise impacts to less than significant.

NOI-1: The Project applicant or its contractors shall implement the following for onsite noise control and sound abatement means that, in aggregate, would yield sufficient construction noise reduction during the site preparation, grading/excavation and building construction phases of the Project to ensure compliance with the FTA-based guidance standard of 90 dBA hourly Leq at or beyond the property lines of the nearest residences, as noted.

Administrative Controls – At all times during site preparation and construction:

- Comply with Chapter 8.24 of the Municipal Code with respect to allowable construction periods,
- Minimize idling time of onsite equipment, and
- Either locate onsite stationary construction equipment (such as generators or air compressors) as far from adjacent residential property boundaries as is feasible, or place this equipment inside an approved noise-attenuating casing (e.g., sound-attenuated air intakes and heat vents, exhaust mufflers, etc.), or place this equipment indoors.

Engineering Controls – All mobile and stationary construction equipment employing an internal combustion engine shall be equipped with suitable exhaust and intake silencers which are in good working order; and

Install Sound Abatement – During site preparation and construction which involves the operation of more than two pieces of heavy equipment (dozer, backhoe, front-end loader, crane, tractor, etc.) for at least one hour and when operating within 25 feet of the exterior of a residence (either offsite or onsite), do the following:

- Erect a temporary barrier (i.e., plywood sheet) or install sound blankets (or comparable temporary solid barriers) on the Project's construction fencing, or
- Locate sound path intervening containers or trailers onsite to block direct line-of-sight between residences and the operating heavy equipment.

3.11-2: Would the Proposed Project expose existing residential areas to excessive vibration due to project construction? This impact would be less than significant.

During site clearing, grading and construction activities for the Proposed Project groundborne vibration would be produced by heavy-duty construction equipment. The most important

equipment relative to generation of vibration, and the vibration levels produced by such equipment, is illustrated in Table 3.11-7.

Table 3.11-7
Vibration Velocities for Typical Construction Equipment

Equipment	PPV at 25 Feet (Inches Per Second)	Approximate Ground Vibration Level 25 feet (VdB)
Large Bulldozer	0.089	87
Loaded Trucks	0.076	86
Drill Rig / Auger	0.089	58
Jackhammer	0.035	87
Small Bulldozer	0.003	79

Source: FTA 2006.

As shown in Table 3.11-7, use of heavy equipment (e.g., large bulldozer) generates vibration levels of 0.089 inches per second PPV at a distance of 25 feet. The City's 1993 General Plan Public Safety Element and Municipal Code (Chapter 8.24) requires limiting the exposure of existing residences to vibration levels exceeding 0.2 inches per second PPV, or exposure of residents to vibration levels of 80 VdB in residences where people normally sleep. The nearest residences to the Project site would be approximately 50 feet from ground disturbance from structural foundations and could experience vibration levels of 0.04 inches per second PPV. Vibration levels at these receptors would not exceed the FTA building damage threshold of 0.2 inches per second PPV. A large bulldozer has a vibration level of 87 VdB measured at 25 feet, at the nearest residences (50 feet) this level would be attenuated to approximately 78 VdB, which is less than the FTA's threshold of 80 VdB. Vibration between 70 and 80 VdB could be noticeable but is generally not considered annoying or destructive. As such, construction-related vibration associated with the Proposed Project would result in a **less-than-significant impact.**

Mitigation Measures

None required.

3.11-3: Would the Proposed Project generate a substantial temporary or permanent operational increase in noise that would exceed City standards? The impact would be less than significant.

Stationary Sources

Operational noise sources for residential areas typically include heating, ventilation, and air conditioning (HVAC) equipment and landscape maintenance activities. Landscape maintenance activities involve short-term noise generation events that do not typically have the potential to

increase the ambient noise levels when referring to the 24-hour L_{dn} metric (which is referenced in the City's Public Safety Element policies). These activities would also not be dissimilar in intensity or character from landscape maintenance activities occurring at the adjacent existing residential properties. Typical HVAC units for residences have sound levels not greater than 67 dBA L_{eq} at 1 meter (Lennox 2017). At 20 feet (the closest residences to the Proposed Project boundary), these levels would be reduced to approximately 51 dBA $L_{eq.}$ Even if the HVAC equipment were to run continuously over a 24-hour period, the resulting noise level at the closest residence would be 57 dBA. Thus, operational noise levels from the proposed residences would be expected to remain below 60 dBA L_{dn} at existing adjacent residences, resulting in a **less-than-significant impact.**

Mobile Sources

The primary noise-related affect the Proposed Project could have in areas off-site is an increase in traffic, which is the main source of noise in most urban areas. Proposed-Project-related traffic noise levels were examined along roadways where the Proposed Project would principally contribute vehicle trips. Trip volume calculations, including traffic volumes along Main Street, Adams Street, Railroad Avenue, Library Lane, Starr Avenue, Hunt Avenue, Paseo Grande Drive and Silverado Trail are included in Appendix I.

Acoustical calculations using standard noise modeling equations adapted from the FHWA noise prediction model were performed for the following traffic scenarios: Existing (conditions), Existing Plus Project, Cumulative, and Cumulative Plus Project.

The modeling calculations take into account the posted vehicle speed, average daily traffic volumes for each scenario, and the estimated vehicle mix (i.e., automobiles, medium and heavy trucks). The model assumed "pavement" propagation conditions, or a hard site surface. Noise levels are indicated at 50 feet from the centerline of the road, consistent with the methodology used for the St. Helena 2019 General Plan Update Draft Environmental Impact Report (St. Helena 2018). Noise levels at greater distances from the roadway centerline would be lower due to attenuation provided by increased distance from the noise source. Generally, noise from heavily traveled roadways would experience a decrease of approximately 3 dB for every doubling of distance from the roadway. The noise model does not take into account the sound-attenuating effect of intervening structures, barriers, vegetation, or topography. Therefore, the noise levels predicted by the model are conservative with respect to potential exterior exposure levels at noise-sensitive uses located along these roadways.

Future increases in traffic noise levels, with and without the Proposed Project, are provided in Table 3.11-8.

Table 3.11-8
Proposed-Project-Related Traffic Noise Levels

Roadway Segment	Existing dBA CNEL	Exist + Project dBA CNEL	Cumulative dBA CNEL	Cumulative + Project dBA CNEL	Maximum Increase (dB)
Main Street North/West of Adams	65.2	65.3	65.6	65.6	0.1
Main Street South/East of Adams	65.0	65.1	65.7	65.8	0.1
Adams Street North of Railroad	63.8	63.8	64.1	64.1	< 0.1
Railroad Avenue Adams to Hunt	64.2	64.4	64.4	64.6	0.2
Library Lane East of Adams	49.1	49.4	49.2	49.5	0.3
Starr Avenue Hunt to Pope	59.7	60.0	61.3	61.5	0.3
Hunt Avenue North of Railroad	59.6	59.8	61.2	61.4	0.2
Paseo Grande Drive East of Hunt	62.3	62.5	63.3	63.4	0.3
Silverado Trail South of Mountain	70.6	70.7	71.5	71.6	0.1

Source: Appendix I.

Proposed-Project-related traffic noise increases along roadways where the Proposed Project would contribute trips would in all cases be less than 1 dBA, as shown in Table 3.11-8. Such increases would therefore be well below the 3 dB perceptible increase threshold. The Proposed Project would also increase the roadway noise level by less than 3 dB in the cumulative scenario. As with project-specific increases, traffic noise levels would increase less than 3 dB CNEL on all roadways, when comparing existing noise levels to those from cumulative plus the Proposed Project. Therefore, the Proposed Project would have a **less-than-significant impact** due to an increase in off-site roadway traffic noise levels.

Mitigation Measures

None required.

3.11.5 Cumulative Impacts

The cumulative context for traffic noise is the traffic volume increases resulting from the Proposed Project along with buildout of the 1993 General Plan, and the anticipated increase in traffic volumes along local roadways. The traffic analysis assumed a cumulative context of

transportation impacts resulting from the Proposed Project along with buildout of the 2019 General Plan.

Non-transportation noise sources (e.g., those associated with Proposed Project operation, which for residential properties include HVAC equipment and landscape maintenance activities) and construction noise impacts are typically project-specific and highly localized (i.e., these do not generally affect the community noise level at distances beyond several hundred feet). These noise sources do not significantly contribute to cumulative noise impacts at distant locations and are not evaluated on a cumulative level.

Construction activities associated with proposed or future development within the area would contribute to cumulative noise levels, but in a geographically limited and temporary manner. As other development occurs in the area, noise from different types of uses (e.g., traffic, aircraft, fixed noise sources) would continue to combine, albeit on a localized basis, to cause increases in overall background noise conditions within the area. As a result, such sources do not significantly contribute to cumulative noise impacts at distant locations and are not evaluated on a cumulative level.

3.11-4: Would the proposed project, in addition to cumulative development in the City, increase noise that exceeds the City's noise standards? The Project's contribution would not be considerable.

The analysis of off-site Proposed-Project-related traffic noise levels included an evaluation of traffic volumes and resulting roadway traffic noise levels from buildout of the City. The evaluation concluded that roadway traffic levels would not reach significant levels when compared against existing roadway traffic noise levels. Therefore, the Proposed Project's contribution to existing cumulative noise would not be considerable resulting in a **less-than-significant cumulative impact.**

Mitigation Measures

None required.

3.11.6 References

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3.12 PUBLIC SERVICES AND RECREATION

3.12.1 Introduction

This section describes the existing public services (fire and police protection, schools, and libraries) and recreational resources in the City of St. Helena (City) and discusses applicable federal, state, and regional regulations pertaining to the provision of public services and recreational facilities to support implementation of the proposed Hunter Subdivision Project (Proposed Project). This section evaluates the potential effects of increased demand for public services and recreational facilities associated with development of the Proposed Project.

Comments received in response to the Notice of Preparation included concerns regarding overcrowding of local schools, heightened demand for police and fire services, impacts to the City's volunteer fire department, increase in costs for City services that could be passed onto local residents, increase in use of parks, and impacts to the maintenance road/pedestrian trail along the north/northwest boundary of the Project site. All of these concerns are addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

Sources referenced to prepare this section includes information provided in Chapter 2, Project Description and from the individual service providers. Other sources consulted are listed in Section 3.12.6, References.

3.12.2 Environmental Setting

This section describes the existing conditions in the Project area and identifies the public services and recreational resources and facilities that could be affected by the Proposed Project.

Fire Protection

The Project site would receive fire protection services from the St. Helena Fire Department (SHFD). The SHFD provides fire protection services for the City, including fire suppression and prevention, education, emergency medical and rescue services, and response to hazardous materials incidents. The SHFD has one station located at 1480 Main Street, approximately 0.2 miles southwest of the Project site. This station is equipped with three fire engines, one water tender, two brush engines and one combination engine and ladder truck (Capponi pers. comm. 2018, updated by A. Vidler 2021). The SHFD also has a satellite fire station located at 1025 Dowdell Lane, approximately 0.85 miles southwest of the Project site.

The SHFD is served by three full-time staff members and 24 paid-call staff, including two fire chiefs, two fire marshals, one administrative assistant/fire inspector, and two full-time firefighters (Capponi pers. comm. 2018; City of St. Helena 2018a; updated by A. Vidler 2021). All

firefighters are trained to the First Responder level and eight are certified Emergency Medical Technicians (Capponi pers. comm. 2018, updated by A. Vidler 2021). The SHFD is equipped with two Type 1 engines, one Type 3 engine, two Type 6 brush vehicles, one command vehicle, two utility vehicles, one water tender, one Type 1 truck, and one medium-duty complement rescue trailer (City of St. Helena 2018b, updated by A. Vidler 2021).

When a call is received the SHFD is dispatched along with the ambulance company. The SHFD strives to maintain a maximum fire response time of 8 minutes or less from dispatch to time of arrival within the city limits (City of St. Helena 2018b). On receiving a call, the department responds to each call with all available paid-call firefighters. On average, 10 firefighters are dispatched in response to a call. The response time to the Project site under current conditions is approximately 3 minutes during the 70-hour coverage period, which occurs between 7 a.m. to 5 p.m. Monday through Sunday, and 5–6 minutes during all other times (Capponi pers. comm. 2018, 2019; updated by A. Vidler 2021). In 2020, the SHFD responded to 855 calls for service, the majority of which were emergency medical calls (City of St. Helena 2018a, updated by A. Vidler 2021). The department responded to approximately 69% of all calls in less than seven minutes during 2017 (City of St. Helena 2018b).

The SHFD is a member of the Napa County mutual aid automatic aid agreement, which requires all fire departments in the County to respond to a call for service as requested or required. Napa County Station 26, located in the City, and Napa County Station 12, located in the City of Yountville, provide automatic aid to all residential and commercial structure fires in the City (City of St. Helena 2018b).

The SHFD routinely reviews development applications and provides conditions of approval to address requirements for fire sprinklers, emergency access, and other fire-related concerns (City of St. Helena 2018b).

Police Protection

Police services for the Project site would be provided by the St. Helena Police Department (SHPD), located at 1480 Main Street approximately 0.2 miles from the site. The SHPD serves the City with 13 sworn police officers, 5 full-time dispatchers, one community service officer, and six police volunteers. Equipment maintained by the SHPD includes four patrol cars, one K9 unit, one Community Service Officer vehicle, one administrative vehicle, one training vehicle, and one dual purpose motorcycle. The SHPD provides 24-hour security patrol for the entire City, with one sergeant and two officers assigned to each patrol watch for the day and night shifts. The department currently has a police officer to resident ratio of 10 officers per 7,000 residents, or 1 officer to 700 residents. The department’s on-duty average is 2 officers per 7,000 residents, or one officer per 3,500 residents (Hartley pers. comm. 2021). The department strives to maintain a staffing ratio of approximately two sworn police staff for every 1,000 residents (City of

St. Helena 2018b). The SHPD also strives to maintain an average non-emergency call response time of less than 8 minutes and average emergency response time of 5-minutes or less. The SHPD has an average response time goal for all Priority One calls of three minutes or less. The department had an average response time for Priority One calls of 2 minutes and 20 seconds in 2020. The response time to the Project site under current conditions is less than 3 minutes from the SHPD headquarters. However, according to the department, response times may vary depending on the location of the on-duty patrol unit (Hartley pers. comm. 2021).

In addition to calls within the City, the SHPD participates in separate mutual aid agreements with California Highway Patrol, the Calistoga Police Department, and the County of Napa.

Schools

The Project site is located within the St. Helena Unified School District (SHUSD). The SHUSD had an enrollment of approximately 1,192 students from kindergarten through twelfth grade during the 2017-2018 school year (City of St. Helena 2018b). SHUSD operates one primary school, one elementary school, one middle school, and one high school. Students from two nearby elementary districts also attend the district's schools (City of St. Helena 2018c). The total capacity for all schools within the SHUSD is 1,776 (California Department of Education Data Reporting Office 2018).

The SHUSD Facility Master Plan (2010) was reviewed to determine projected SHUSD enrollment. With a general trend in declining enrollment in recent years, the district expects adequate capacity in the near term, and generally into the future (City of St. Helena 2018b). Student capacity in the 2016–2017 school year enrollment, and projected 2017–2018, 2018–2019, and 2019–2020 enrollment for SHUSD schools is shown in Table 3.12-1.

Table 3.12-1
SHUSD Enrollment and Capacity Data

School	Grades Served	Total Capacity	2016-2017 Enrollment	Projected 2017-2018 Enrollment	Projected 2018-2019 Enrollment	Projected 2019-2020 Enrollment
St. Helena Primary School	K-2nd Grade	284	238	250	252	255
St. Helena Elementary School	3rd-5th Grade	379	230	239	242	238
Robert Louis Stevenson Middle School	6th-8th Grade	387	261	278	265	264
St. Helena High School	9th-12th Grade	726	469	438	441	439
	Total	**1,776**	**1,199**	**1,205**	**1,200**	**1,196**

Source: California Department of Education Data Reporting Office 2018, SHUSD 2010.

Libraries

The City operates one public library, the George and Elsie Wood Public Library, located approximately 0.1 miles northwest of the Project site at 1492 Library Lane. The library currently contains over 75,000 books, DVDs, books on CD, CDs, newspapers, magazines, microfilm and other media (City of St. Helena 2018d). The library also includes the Napa Valley Wine Library, which encompasses approximately 3,500 titles and over 6,000 items. Furthermore, the Robert Louis Stevenson Museum is also located within the library (City of St. Helena 2018d).

The City's library has 6 full-time employees staffing the library 6 days a week, and 7 part-time employees. The library opens at 10:00 a.m. on Monday through Thursday and closes at 6:00 p.m. on Monday, 7:00 p.m. on Tuesday and Wednesday, and 9:00 p.m. on Thursday. The library is open from 2:00 p.m. until 6:00 p.m. on Friday and Saturday and is closed on Sunday. The library currently serves approximately 42 people per hour on average. No formal plans have been made for development of new library facilities (Kreiden, pers. comm. 2018).

Recreation

The City's Parks and Recreation Department oversees the development and operation of parks and recreational facilities within the City. There are eleven active parks and four trails within the City limits, which include a variety of recreational facilities, including tennis courts, softball fields, bocce courts, playgrounds, fitness courses, and picnic facilities. In addition, the Parks and Recreation Department provides a variety of recreational programs, including youth and adult sports programs, community classes and events, youth and teen programs, after-school and educational programs, summer camps, and special events. Maintenance of City recreational facilities is provided by the Parks Division of the Public Works Department (City of St. Helena 1993, 2018e). Table 3.12-2, below, lists the City's active parks, park acreage, and amenities/facilities available in each park.

Table 3.12-2
City of St. Helena Recreational Facilities

Recreational Facility	Type	Acreage	Amenities
Baldwin Park (1591 Spring St.)	Mini	0.76	Grassy Area, Pathway, Picnic Tables
Crane Park (360 Crane Avenue)	Community	11.27	Baseball field, Bocce Ball Courts (lighted), Horseshoe Pits, Picnic Area, Picnic Tables, Playground Equipment, Restrooms, Tennis Courts (lighted), Volleyball Court (lighted)
Jacob Meily Park (Pope St.)	Neighborhood	5.42	Parking, Paved Walking Trail, Picnic Area, Picnic Tables, Restrooms, Grass Area
Lewis Station (1100 Church St.)	Mini	0.13	Picnic Tables, Restrooms

Table 3.12-2
City of St. Helena Recreational Facilities

Recreational Facility	Type	Acreage	Amenities
Lyman Park (1498 Main Street)	Mini	0.89	Grass Area, Historic Gazebo, Playground Equipment
Mary Fryer Park (1300 Mitchell Dr.)	Mini	0.84	Picnic Tables, Playground Equipment
Mennen Park (1600 Voorhees Circle)	Mini	0.17	Grass Area, Pathway
St. Helena Skate Park (360 Crane Avenue)	Mini	0.41	Skate Park
Stephen C. McCullagh Park (1758 Crinella Drive)	Mini	0.14	Sandbox, Climbing Rock and Rope Structures, Benches, Play Area
Stone Bridge Park (Pope St.)	Mini	0.75	Grass Area
Wappo Park (201 Pope St.)	Neighborhood	6.65	Dog Park, Pathway, Picnic Tables
	Total	**27.43**	

Source: City of St. Helena 2018b.

The closest parks to the Project site include Lyman Park, Jacob Meily Park, and Lewis Station, all located approximately 0.3 miles from the site. Lyman Park is an approximately 0.9-acre park that contains a picnic area, turf areas, a children's play area and a historic gazebo (City of St. Helena 2018f).

- Jacob Meily Park is an approximately five-acre neighborhood park that includes a turf area, picnic tables, a playground, and a paved walking trail along Sulphur Creek (City of St. Helena 2018g).
- Lewis Station is a pocket-park, measuring 0.13 acres, which contains two picnic tables and benches (City of St. Helena 2018h).
- Stone Bridge Park and Wappo Park are both located approximately 0.4 miles south of the Project site. Stone Bridge Park consists of approximately 0.75 acres of turf/grass and benches, and Wappo Park is a newly constructed neighborhood park that contains passive recreation facilities such as a loop trail, two picnic areas, and a dog park (City of St. Helena 2018i,j).

Additionally, an approximately 0.6 miles pedestrian path/trail is located parallel to the gravel maintenance road located adjacent to the northern boundary of the Project site. The maintenance road is not a City recreation trail but is used informally as a trail by local residents. An open space parcel owned by the City is located adjacent to the project site to the north/east.

3.12.3 Regulatory Setting

Federal Regulations

There are no federal regulations regarding the provision of local services or recreational facilities.

State Regulations

The following state regulations pertaining to public services and recreational facilities would apply to the Proposed Project. There are no state regulations pertaining to law enforcement services.

Fire Protection

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.

Building, Fire and Residential Code

The State Fire Marshal's Building, Fire and Residential Code went into effect on January 1, 2011. The 2010 California Building Standards Code includes the requirement that all new one- and two-family dwellings and townhouses include residential fire sprinklers for all residences constructed after January 1, 2011. Fire sprinkler systems are also required in office buildings and multi-family dwellings (i.e. apartments).

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 has established minimum standards for fire suppression and emergency medical

services. The standards include 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.

California Department of Forestry and Fire Protection

The California Department of Forestry and Fire Protection (CAL FIRE) offers fire protection services for State Responsibility Areas and local jurisdictions with contracts with CAL FIRE. State Responsibility Areas are located along the western and eastern boundaries of the City within the unincorporated area of Napa County (CALFIRE 2007). CAL FIRE also aids local fire departments by providing wildfire abatement services for their jurisdictions through mutual and automatic aid agreements. CAL FIRE also endorses state-legislated fire safety standards, supports fuel management efforts, and implements fire-safety inspections to further its objectives. CAL FIRE is responsible by law for responding to uncontrolled fire that has the capability for destruction of life, property, or natural resources.

Parks and Recreation

Quimby Act

California Government Code Section 66477, Subdivision Map Act, referred to as the Quimby Act, permits local jurisdictions to require the dedication of land and/or the payment of in-lieu fees solely for park and recreation purposes. The required dedication and/or fee are based upon the residential density, parkland cost, and other factors. Land dedication and fees collected pursuant to the Quimby Act may be used for acquisition, improvement, and expansion of park, playground, and recreational facilities or the development of public schools.

Schools

California Education Code

The California Code of Regulations (CCR), Title 5, Education Code governs all aspects of education within the state. The California Education Code authorizes the California Department of Education to develop site selection standards for school districts which require districts to select a site that conforms to certain net acreage requirements established in the California Department of Education's 2000 School Site Analysis and Development guidebook. The guide includes the assumption that the land purchased for school sites will be in a ratio of approximately 2:1 between the developed grounds and the building area. If the "availability of land is scarce and real estate prices are exorbitant," the site size may be reduced. California Department of Education policy states that if a school site is less than the recommended acreage required, the district shall

demonstrate how the students will be provided an adequate educational program, including physical education, as described in the district's adopted course of study.

Senate Bill 50

Senate Bill (SB) 50 (Chapter 407, Statutes of 1998), known as the Leroy F. Greene School Facilities Act of 1998, created the School Facility Program where eligible school districts may obtain state bond funds. The new state program was funded with bond revenue from Proposition 1A, a $9.2 billion state bond initiative approved by voters in November of 1998. 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. SB 50 amended Government Code Section 5699(a) to state that payment of SB 50 fees would be the exclusive method of considering and mitigating impacts on school facilities that may result from a project.

Local Regulations

The following local/regional regulations pertaining to public services and recreation would apply to the Proposed Project.

City of St. Helena 1993 General Plan

The Public Health and Safety Element, Public Facilities and Services Element, and Parks and Recreation Element of the City of St. Helena 1993 General Plan provide guiding and implementing policies regarding public services and recreation facilities, including the following. The General Plan does not contain any policies that address law enforcement.

Public Health and Safety Element - Implementing Policies

Policy 8.5.6: Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

Policy 8.5.7: Ensure that all streets and roads are adequate in terms of width, turning radius, and grade to facilitate access by City firefighting apparatus, and to provide alternative emergency ingress and egress.

Public Facilities and Services Element – Guiding Policies

Policy 9.6.3: Support and cooperate with the St. Helena Unified School District in its efforts to ensure adequate financing for new school facilities. To this end, the City shall cooperate with the School District in the collection of school facility development fees

from new residential and non-residential development, and will work with the District to identify, establish, and implement additional measures that may be necessary to adequately finance school facilities in the city.

Parks and Recreation Element – Guiding and Implementing Policies

Policy 10.3.5: Encourage developers to provide open space and recreational facilities as part of new residential developments. The City may consider density bonuses for the inclusion of significant public recreational facilities in new development.

Policy 10.3.6: Assess park development fees on all new commercial, industrial, and residential development sufficient to fund City-wide park improvements.

Implementing Policy 10.3.9: Adopt 5 acres of developed parkland per 1,000 residents as the goal for citywide park acquisition and development.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Public Health and Safety Element, Public Facilities and Services Element, and Parks and Recreation Element of the City of St. Helena 2019 General Plan provide the following policies regarding public services and recreation facilities, including the following:

Public Health and Safety Element

Policy PS4.6: Ensure that all streets and roads are adequate in terms of width, turning radius, and grade in order to facilitate access by City firefighting apparatus, and to provide alternative emergency routes of ingress and egress.

Policy PS4.D: Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

Public Facilities and Services Element

Policy PF5.4: Require that the approval of residential, commercial, or industrial development be contingent upon the mitigation of the impact of such development on the St. Helena Unified School District's ability to serve school-age children.

Policy PF5.7: Set a goal of a maximum fire department response time of 8 minutes within the St. Helena city limits.

Policy PF5.8: Set a staffing ratio of 2 police officers per 1,000 population and for priority one calls, an average police department response time of 3 minutes or less.

Parks and Recreation Element

Policy PR1.1: Retain the park standard from the 1993 General Plan of 5.0 acres of parkland per 1,000 residents, while striving for the nationally recommended standard of 10.5 acres per 1,000 residents.

Policy PR1.4: Require park land dedications or civic improvement fees on all new residential, commercial, and industrial developments to meet the standard of 5.0 acres of parks per 1,000 residents.

St. Helena Municipal Code

Chapter 3.32, Development Impact Fees, of the City's Municipal Code, specifies that, in order for the City to implement the goals and objectives of the City's General Plan and to mitigate impacts from new development within the City, the City requires development impact fees to finance public improvement projects related to civic improvement projects, public safety, sewer projects, water projects, traffic mitigation, parks and storm drainage. Development fees for public safety, civic improvement projects, and parks are provided below.

Public Safety Impact Fee

Chapter 3.32, Section 3.32.050 addresses public safety impact fees. Public safety impact fees are used to fund the acquisition, construction, and reconstruction of facilities and equipment and other capital purposes needed for the City's fire and police departments. The impact fee is one dollar four cents ($1.04) per square foot for all new development projects.

Civic Improvement Fee

Civic improvement fees (Section 3.32.060) are used to fund the acquisition, construction, and reconstruction of City hall, the St. Helena library, community facilities, and equipment and other capital purposes needed for civic services. The impact fee is one dollar ninety-five cents ($1.95) per square foot for all new residential development projects.

Park and Recreation Impact Fee

Park and recreational impact fees (Section 3.32.065) are used to fund the acquisition, construction, and reconstruction of playgrounds, community facilities, recreation facilities and equipment and other capital purposes needed for park and recreation services. The impact fee is twelve dollars eighteen cents ($12.18) per square foot for all new medium and higher density (multi-family) residential development.

Fire Protection Systems

Chapter 15.36 Section 15.36.060 of the City's Municipal Code adopts the requirements of the California Fire Code, with amendments. Requirements for fire protection systems for new development within the city is included. The Ordinance requires that approved automatic sprinkler systems be installed in new buildings and structures, including accessory buildings intended for use as a dwelling unit. Furthermore, the Ordinance gives the Fire Code Official authority to require construction documents and calculations for all fire protection systems and to require permits be issued for the installation, rehabilitation or modification of any fire protection system. Construction documents for fire protection systems shall be submitted for review and approval prior to the issuance of a building permit.

3.12.4 Impacts

Methods of Analysis

The impact analysis evaluates the ability of the SHPD, SHFD, SHUSD, St. Helena Parks and Recreation Department, and the George and Elsie Wood Public Library to serve the Proposed Project through a qualitative review of Proposed Project characteristics, such as location, size, and current demand. The analysis also addresses whether the Proposed Project would require the need to add more staff or construct additional facilities to accommodate an increase in demand.

In order to assess whether the Proposed Project would have impacts related to the provision of public services and recreational facilities, the analysis below incorporates estimates for population growth generated by the Project. In order to determine demand for public services and recreation facilities, the number of proposed residential units was multiplied by the current demand factors contained in the City's Development Impact Fee Study Report (City of St. Helena 2013).

The Proposed Project would construct 51 single-family residences, 25 attached residential units, and 11 accessory dwelling units (ADU) within the 16.9-acre Project site.

The City uses a persons per household factor of 2.45 people per unit for medium/higher density residential land uses for purposes of calculating public safety, civic improvement, and park and recreation facilities demands (City of St. Helena 2013). Using this factor, the Proposed Project would conservatively generate 213 residents, including the ADUs. It is unlikely the 11 ADU's would accommodate more than one or two people; therefore, the population estimate of 213 is a conservative assumption for the purposes of evaluating Project impacts.

Table 3.12-3 considers the increase in demand for primary, elementary, middle and high schools generated by the Proposed Project. Student generation rates were derived from the

SHUSD Facility Master Plan, which outlines expected growth in demand for school facilities associated with projected development and plans how to fund and respond to such growth.

Table 3.12-3
Projected Proposed Project Student Generation

Grades	Residential Units	Student Generation Rate (per total number of units)	Students Generated
K-2	87	0.058	5
3-5	87	0.080	7
6-8	87	0.088	8
9-12	87	0.088	8
		Total	**28**

Note: For a conservative assumption a total of 87 residential units (including the 11 ADUs) is assumed. The likelihood of all 11 ADUs including school-age children is very low.
Source: SHUSD 2010.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act Guidelines, a significant impact would occur if the Proposed Project would do any of the following:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    - Fire protection.
    - Police protection.
    - Schools.
    - Other public facilities.
- Increase the use of existing neighborhood parks or other recreational services such that a substantial physical deterioration of the facility would occur or require the construction or expansion of facilities that could have a physical adverse effect on the environment.

While important to the quality of life in the Project area, impacts to schools from increased development do not necessarily result in physical environmental impacts. In *Goleta Union School District v. Regents of the University of California* (2d Dist. 1995) (37 Cal. App. 4th 1025, 1032, 1995), the Court of Appeal found that "[c]lassroom overcrowding, per se, does not constitute a significant effect on the environment." A General Plan may have policies relating to

public service levels in general or schools in particular. If a development project overwhelms the school district's capacity and quality of service, it could be inconsistent with the General Plan. Neither the City of St. Helena 1993 General Plan nor the 2019 General Plan have a specific policy related to school service levels. The Proposed Project applicant would pay the required school impact fees to the SHUSD.

Impacts and Mitigation Measures

3.12-1: Would the Proposed Project increase demand for public services requiring the need to construct new facilities, or expand existing facilities, the construction of which could cause significant environmental impacts? This impact would be less than significant.

Fire Protection

The Project site is currently undeveloped and requires minimal service from the SHFD. Development of the site with residential uses would result in increased demand for City fire protection services and facilities. Development of the site with residential uses is consistent with existing surrounding development that includes residential and office uses located to the south and southeast of the Project site and is consistent with the underlying land use designation and zoning. The Project site would be served by the City's fire department located at 1480 Main Street, approximately 0.2 miles from the Project site. As described above, the Proposed Project is expected to increase the City's population by approximately 213 residents. This population increase is within the projected population for proposed growth in the City's 1993 General Plan which assumed a residential density of up to 12.0 dwelling units per acre,[1] which would allow a maximum of 203 dwelling units and up to 497 residents, was assumed. Nevertheless, the Proposed Project would increase demand for fire protection services.

By increasing the population, development of the Project site would increase the demand for fire protection and emergency services, including additional staffing and vehicles, but would not necessitate the construction of a new facility or expansion of an existing facility. The SHFD measures adequate service by response time and not by the number or ratio of firefighters per population.

Fire protection services are funded through various City tax revenues. Development of the Proposed Project would generate revenue to finance the expansion of additional operational services. Furthermore, the Proposed Project applicant would pay required impact fees pursuant to the City's Public Safety Impact Fee, which funds the acquisition, construction, and

[1] The MR zoning permits a maximum density of 16.0 dwelling units per acre. This would permit a maximum of 270 residential units and 661 residents.

reconstruction of facilities and equipment and other capital purposes needed for the City's fire department. These fees are based on a proportionate share of the cost of new development for facilities and equipment serving the City. Therefore, because the City's existing facilities and equipment are planned to serve future development, public safety impact fees are largely intended to recoup a project's proportionate share of the depreciated replacement cost of existing facilities and equipment.

The Proposed Project would comply with Chapter 15.36 of the City's Municipal Code and the 2010 State Building Code, which requires installation of approved automatic sprinkler systems in all single-family and multi-family buildings. Furthermore, the Proposed Project would be consistent with 1993 General Plan Policy 8.5.6 and 2019 General Plan Policy PS4.D, which require new development to meet the minimum fire flow rates specified by the City's Fire Code, and 1993 General Plan Policy 8.5.7 and 2019 General Plan Policy PS4.6, which require all streets and roads to be adequate in terms of width, turning radius, and grade to facilitate access by City firefighting apparatus, and to provide alternative emergency ingress and egress. The site plan would be subject to plan review by the SHFD to ensure proper access for fire and emergency response is provided and required fire suppression features are included. The Proposed Project includes two access points as well as a separate Emergency Vehicle Access.

The increased demand for fire protection services associated with the Proposed Project would be offset by payment of required taxes and fees that would help fund ongoing service and new facilities; therefore, the Proposed Project would have a **less-than-significant impact** on the provision of fire protection services and would not require the construction of new, or expansion of existing fire facilities.

Police Protection

The Project site is undeveloped and requires minimal law enforcement services from the SHPD at present. Police services for the Project site would be provided from the SHPD's station located at 1480 Main Street, approximately 0.2 miles from the site. The 1993 General Plan does not include any policies that address law enforcement, but the 2019 General Plan does include Policy PF5.8 to set a staffing ratio of 2 police officers per 1,000 residents and to have an average police department response time of 3 minutes or less for priority one calls. The SHPD currently has a police officer to resident ratio of approximately 2.0 sworn officers per 3,500 residents. The Proposed Project would increase demand for law enforcement services by conservatively adding approximately 213 residents to the City's population, requiring one officer. The addition of one officer would not require the construction of new, or the expansion of existing, police facilities because adequate space is available in the SHPD Facility. This would be consistent with the staffing ratio required by Policy PF5.8 and would also improve police department response times due to the larger officer-to-resident ratio.

The City's law enforcement operational services are funded through various City tax revenues. Development of the Proposed Project would generate property tax and sales tax revenue to finance hiring new officers and the expansion of additional services when needed. In addition, the Proposed Project applicant would pay required impact fees pursuant to the City's Public Safety Impact Fee, which funds the acquisition, construction, and reconstruction of facilities and equipment and other capital purposes needed for the City's police department. The increased demand for police protection services associated with the Proposed Project would be offset by payment of required taxes and fees that would help fund ongoing service and new facilities; therefore, the Proposed Project would have a **less-than-significant impact** on the provision of police protection services and would not require the construction of new, or expansion of existing police facilities.

Schools

The SHUSD Facility Master Plan, adopted in July 2010, identifies future plans for new school facilities in the district in order to plan for the anticipated increase in demand for school facilities expected from 2010 through 2020. The projections for future enrollment and student generation are based on historical school enrollment data and trends of enrollment per grade level, district specific birth data, student migration, and land use trends and policies governing residential development (SHUSD 2010). The predicted enrollment is then compared with existing school capacities to determine the need for additional school facilities.

As shown in Table 3.12-3, the Proposed Project would conservatively generate a total of 28 students, based on the assumption that 87 (this includes 11 ADUs) residential units would be constructed and that historical enrollment trends remain relevant. Of these students, five elementary school students would attend St. Helena Primary School (K–2), seven students would attend St. Helena Elementary School (3–5), eight students would attend Robert Louis Stevenson Middle School (6–8), and eight students would attend St. Helena High School (9–12). This is a conservative estimate because it is unlikely that all 11 ADUs would include families with school-age children. As shown in Table 3.12-1, St. Helena Primary School has an estimated remaining capacity of 29 students, St. Helena Elementary School has an estimated remaining capacity of 141 students, Robert Louis Stevenson Middle School has an estimated remaining capacity of 123 students, and St. Helena High School has an estimated remaining capacity of 287 students, when accounting for the projected 2019–2020 enrollment. Therefore, the addition of school-age students generated by the Proposed Project would not exceed the capacity of schools within the SHUSD, and existing schools are estimated to have more than sufficient capacity for projected enrollment through 2025. Under SB 50, payment of required school impact fees is deemed complete and full mitigation for impacts to school facilities. The impact would be considered **less than significant**.

Other Public Facilities

As discussed previously, the Proposed Project would conservatively add 213 residents to the City's population. This would increase demand for existing public facilities within the City, including the George and Elsie Wood Public Library and City Hall. Payment of the City's civic improvement fee, as required by the City's Municipal Code Chapter 3.32, would ensure that the Proposed Project would offset impacts related to other public facilities, including the library, community facilities, and equipment and other capital purposes needed for civic services. These impact fees were calculated to ensure new development would pay their proportionate share of the cost of existing and future capital assets required to serve the City. This would ensure that the Proposed Project would have a **less-than-significant impact** on other public facilities.

Mitigation Measures

None required.

3.12-2: Would the Proposed Project increase the use of existing neighborhood parks or other recreational services such that a substantial physical deterioration of the facility would occur, or require the construction or expansion of facilities that could have a physical adverse effect on the environment? This impact would be less than significant.

The Proposed Project proposes to construct 87 residential units (including 11 ADUs). Using the average persons per household of 2.45, as stated in the City's Development Impact Fee Study Report (City of St. Helena 2013), the Proposed Project would conservatively generate 213 residents. As described in Section 3.12.3, the City's General Plan requires 5 acres of developed parkland per 1,000 residents. This standard ensures that recreational services are provided equally to all residents and that the quality of existing facilities can be maintained. The Proposed Project does not provide any on-site parks or recreational facilities. The City currently contains 27.43 acres of total parkland and has a population of 6,196 (City of St. Helena 2018d, U.S. Census Bureau 2018). On the basis of the 2018 population of 6,196 residents and park acreage of 27.43, the City's parkland to resident ratio is 4.43 acres per 1,000 residents. Assuming the addition of 213 new residents to the City, the City would have a ratio of 4.28 acres of parkland per 1,000 residents. This falls short of the City's parkland goal of 5 acres of parkland per 1,000 residents, which included as Implementing Policy 10.3.9 in the 1993 General Plan and Policy PR1.1 in the 2019 General Plan. Policy PR1.1 also states a goal to reach the nationally recommended standard of 10.5 acres of parkland per 1,000 residents, although this is not a requirement.

Parks within the vicinity of the Proposed Project include Lyman Park, Jacob Meily Park, and Lewis Station, which are all located approximately 0.3 miles from the Project site. These parks have adequate facilities, including picnic and turf areas, children's playgrounds, and a walking

trail, to support Proposed Project residents. The maintenance road adjacent to the northern boundary of the Project site is not a part of the Proposed Project, nor is it a City trail. There is an existing City trail located in the northside of the maintenance road. A small portion of the maintenance road would be paved to accommodate construction of the Adams Street extension, but sidewalks would be provided along the extension of Adams Street to provide a safe connection to the remainder of the maintenance road and the pedestrian trail, which would remain unaltered by the Proposed Project.

Park and recreational impact fees are imposed upon all residential development within the City. These impact fees are used to cover the cost of land acquisition and park improvements and are based on added population per unit, then converted into a cost per square foot for each type of residential development. The Proposed Project applicant would pay the required park fees to be used by the City to purchase land to construct new parks or upgrade existing recreation facilities. This would ensure that increased use of existing neighborhood parks due to the Proposed Project residents would not cause substantial physical deterioration and would account for construction and expansion of facilities to accommodate the increase in population associated with the Proposed Project.

Payment of the City's park and recreational impact fees as stipulated in the City's Municipal Code Chapter 3.32, consistent with the Quimby Act, would ensure that the Proposed Project would have a **less-than-significant impact** related to recreational facilities.

Mitigation Measures

None required.

3.12.5 Cumulative Impacts

This cumulative impact analysis does not rely on any list of specific pending, reasonably foreseeable development proposals in the general vicinity of the Proposed Project. The cumulative context includes projected buildout under the City's 1993 General Plan and other approved projects in the City. While the Proposed Project is required to be evaluated under the 1993 General Plan, any changes relative to the 2019 General Plan are also evaluated for informational purposes.

The geographic scope for the cumulative analysis for the provision of fire and police protection services, parks and recreation and other public services is the City limits which corresponds to the various provider district boundaries. The geographic scope for schools would be the SHUSD district boundary.

3.12-3: Would the Proposed Project contribute to a cumulative increase in demand for public services, schools, and recreation facilities? The Project's contribution would not be considerable.

Development of the Proposed Project would contribute to a cumulative increase in demand for public services and parks and recreational facilities. New fire and police personnel and facilities as well new schools and parks and recreation facilities may be required for 1993 General Plan buildout conditions. This could result in the need for new or physically altered governmental facilities in order to maintain acceptable service ratios, response times, or other performance objectives. However, future development within the City would be required to comply with policies set forth in the City's 1993 General Plan and pay applicable development impact fees as specified in Chapter 3.32, Development Impact Fees, of the City's Municipal Code.

The City recently updated its General Plan in 2019, and the Draft Environmental Impact Report prepared for the 2019 General Plan notes that the SHFD and the SHPD does not anticipate the need to increase staffing levels or construct any new facilities in order to provide service for future population growth. The projected addition of residents and employees by 2040 (including development of the Project site) would likely increase the demand for emergency fire and police response and preventive services; however, the increase is modest and not expected to create a need for new or expanded fire or police protection facilities and impacts were determined to be less than significant. Therefore, the Proposed Project's contribution would not be considerable.

The 2019 General Plan notes that the projected addition of residents and employees by 2040 (including development of the Project site) would likely increase the need for more parks and recreation facilities; however, the impact was determined to be less than significant. As discussed above, the Proposed Project would comply with all applicable City goals and policies and pay applicable fees. The Proposed Project's incremental contribution to the cumulative increase in demand is considered less than significant. Thus, the Proposed Project would not have a considerable contribution to a significant cumulative impact and the Proposed Project's contribution is less than significant resulting in a **less-than-significant cumulative impact**.

Mitigation Measures

None required.

3.12.6 References

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3.13 UTILITIES AND SERVICE SYSTEMS

3.13.1 Introduction

This section describes the utilities and service systems that would serve the proposed Hunter Subdivision Project (Proposed Project), specifically water supply, wastewater conveyance and treatment, storm drainage infrastructure, and solid waste disposal and identifies feasible mitigation measures to address impacts.

Comments received in response to the Notice of Preparation included concerns regarding increased water consumption, stormwater drainage capacity, existing sewer infrastructure, water conservation measures, cumulative impacts to water resources, and impacts of on-site groundwater pumping to City of St. Helena (City) groundwater supply wells. Please see Section 3.9, Hydrology and Water Quality for more information pertaining to capacity of the City's stormwater infrastructure and water quality impacts associated with stormwater discharge. The remaining issues are addressed in this section. A copy of the Notice of Preparation and comments received is included in Appendix A.

This section incorporates information from the following sources: Preliminary Water Calculations Technical Memorandum, included in Appendix J; City of St. Helena Storm Drainage Master Plan (City of St. Helena 2000); City of St. Helena Sewer System Management Plan (City of St. Helena 2014); and City of St. Helena Water Supply Plan (City of St. Helena 2010). Other documentation used in this analysis includes the City of St. Helena 1993 General Plan, City of St. Helena 2019 General Plan[1], and the City of St. Helena 2019 General Plan Draft Environmental Impact Report (EIR). Other sources consulted are listed in Section 3.13.6, References.

3.13.2 Environmental Setting

This section describes the existing conditions in the Project area and also identifies the public utilities and services that could be affected by future development of the Project site with residential uses.

Existing Site

The Project site is predominantly undeveloped, with the exception of approximately 40% of the site, which is under cultivation with a vineyard. There is an existing agricultural well in the southeastern end of the Project site (proposed to be located in Parcel B of the subdivision) that has been used historically to supply irrigation water to the site but is currently inoperable. This well is proposed to remain in a production capacity to supply irrigation water to meet the outdoor

[1] The 2019 General Plan is also known as the "General Plan Update 2040," but is referred to here by its adoption date.

landscaping demands of the Proposed Project, reducing the water demands on the existing City water supplies and delivery system.

The Project site gradually slopes to the east, with existing elevations ranging from approximately 243 feet above mean sea level in the western portion of the site, to approximately 214 feet above mean sea level in the eastern portion of the site. An existing 10-foot-wide public water line easement containing an active 12-inch water line bisects the north/northeast portion of the site. The easement is proposed to be abandoned as part of the Project and the water line relocated. The Project site is currently undeveloped and not served by City utilities.

Water

This section describes the existing and past water supplies and water demands within the City of St. Helena. Projected water demand for the City is also discussed. The baseline to establish the "existing conditions" is based on when the Notice of Preparation was released for the Project, which was in March 2018 (CEQA Guidelines Section 15125(a)). The existing conditions constitute the "baseline condition" against which project-related impacts are compared. Since 2018, the City's water supply conditions have changed due to a variety of factors; therefore, updated information regarding water supply and availability of water to serve the City is also provided.

City of St. Helena Water Supply

The Project site is located within the City's water service area and is requesting to receive potable water service from the City to meet the Proposed Project's estimated potable water demands associated with development of residential uses. The Project site is currently undeveloped with the exception of a small vineyard in the "panhandle" portion of the site with a larger vineyard located in the southwestern portion of the site. It is assumed these vineyards have previously been irrigated by the on-site well, which constitutes the only water use on site at present. However, since the well is currently inoperable it is not clear if the vineyard is receiving irrigation.

The City receives potable water from three sources: Bell Canyon Reservoir, the Stonebridge Well Complex, and contract water from the City of Napa. Additionally, the City uses the City-owned Lower Reservoir and a groundwater well located near the Napa River as sources of non-potable water (City of St. Helena 2018). Recycled water is not currently a source of water supply in the City. The following details each of the anticipated sources of water for the Proposed Project. Table 3.13-1 provides the contribution of groundwater and surface water to the City's historical water supplies and has been updated through 2020.

Table 3.13-1
City of St. Helena Potable Water Deliveries by Source

Year	Bell Canyon Reservoir	City of Napa Contract	Stonebridge Wells	Total
Supply (acre-feet)				
2013	927	555	400	1,882
2014	865	607	374	1,847
2015	739	523	308	1,570
2016	643	581	241	1,465
2017	736	588	270	1,594
2018	840	623	327	1,790
2019	836	612	240	1,688
2020	702	625	302	1,629
			Average	**1,637**

Source: City of St. Helena, 2021.

Bell Canyon Reservoir

The City holds water rights permits issued by the State Water Resources Control Board (SWRCB) for storage and diversion of water at the Bell Canyon Reservoir. These rights are detailed in permits 9157 and 14810 issued in 1952 and 1965 respectively (City of St. Helena 2010). As detailed in the City's 2019 General Plan EIR, the City has requested that the SWRCB allow the permits to become a licensed water right (City of St. Helena 2018). These water rights permits have not yet been converted to licenses.

Bell Creek, as impounded in Bell Canyon Reservoir, has served as the City's major water supply source for over 50 years. Bell Canyon Reservoir encompasses approximately 3,647 acres and has a storage capacity of 2,400 acre-feet. Average historical yield from the reservoir is approximately 1,800 acre-feet per year, and sustainable yield ranges from approximately 500 acre-feet in critically dry years to approximately 1,100 acre-feet in wet years (City of St. Helena 2018).

In total, the City is authorized to divert and store 3,800 acre-feet from Bell Canyon Reservoir each year, and directly divert 1 cubic foot per second between November 15 and April 15 (150 days) of each year. Of the City's total authorized amount, 2,000 acre-feet can only be diverted and stored between November 15 and April 15 of each year (City of St. Helena 2010). Table 3.13-2 provides quarterly storage data for the Bell Canyon Reservoir for 2018 through March 2020.

Table 3.13-2
Bell Canyon Reservoir Storage

Date[1]	Storage (acre-feet)
March 2020	1,670.888
January 2020	1,716.734
September 2019	1,708.644

Table 3.13-2
Bell Canyon Reservoir Storage

Date[1]	Storage (acre-feet)
June 2019	2,155.966
March 2019	2,383.69
January 2019	1,514.139
December 2018	1,453.859
September 2018	1,708.644
June 2018	2,155.966
March 2018	1,388.627
January 2018	1,328.850

Sources: City of St. Helena 2018, 2019a, 2019b, and 2020.
Note:
1 Data as recorded on the 1st of each month.

In recent years, the annual yield from Bell Canyon Reservoir has declined significantly due to required water releases into the Napa River to support fish habitat and also from drought conditions. Because of this, water from the City of Napa has become an increasingly large portion of the total water supply (City of St. Helena 2018).

City of Napa Contract

The City of Napa's surface water supplies are obtained from three water sources: State Water Project (SWP) water delivered via the North Bay Aqueduct, Lake Hennessey, and Lake Milliken. On November 8, 2011, the City approved a revised agreement with the City of Napa detailing the availability of treated water supplies from the City of Napa. Under the modified agreement, the City will receive a guaranteed delivery of 600 acre-feet annually from the City of Napa and deliveries are no longer subject to conditions of the City of Napa's water supplies, like the shortage provision that is tied to shortages imposed by the State Water Project on Napa County's state contract – even in drought conditions (City of St. Helena 2011). The City is obligated to pay for 600 acre-feet whether or not the City actually uses the 600 acre-feet. Additionally, the City may request up to 200 acre-feet of additional water supply and the City of Napa will deliver the requested quantity of water if it possesses enough water supply to fulfill the request. The City of Napa has the right to supply this additional water from its own existing supplies or to transport the water on behalf of the City for water purchased by the City from another supplier (City of St. Helena 2011). The initial term of this contract expires on December 31, 2035. As shown in Table 3.13-3, the City of Napa's water supply is expected to be about 31,778 acre-feet during normal years, 17,468 acre-feet during multiple-dry year periods, and about 10,267 acre-feet during single-dry years, according to the 2015 Urban Water Management Plan which is currently being updated (City of Napa 2017). As of 2021 due to the drought conditions water supplies from the City of Napa have been reduced (pers. comm. Wanger 2021).

Table 3.13-3
City of Napa Water Supply

Source	Normal-Year	Multiple-Dry Years	Single-Dry Year
Supply (acre-feet)			
Lake Hennessey	17,500	10,417	5,000
Milliken Reservoir	700	700	400
State Water Project	13,578	6,351	4,867
Total	**31,778**	**17,468**	**10,267**

Source: City of Napa 2017.

Lake Hennessey and Milliken Reservoir are two surface water reservoirs located along tributaries of the Napa River. SWP water is supplied through the North Bay Aqueduct as per an agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD), the SWP contract administrator for several municipalities in Napa County. The City of Napa's three existing water sources and the normal (average) year quantities available through 2035 are discussed below.

Lake Hennessey

Lake Hennessey, a reservoir located 13 miles north of the City of Napa with an approximate storage capacity of 31,000 acre-feet, is the primary local water source for the City of Napa system. The City of Napa obtains water rights to divert and store up to 30,500 acre-feet per year through a permit with the SWRCB Division of Water Rights. Lake Hennessey has an annual average inflow of 19,962 acre-feet, which is much lower than its storage capacity (City of Napa 2017). Water from Lake Hennessy is treated at the Hennessey Water Treatment Plant in Napa County. Table 3.13-4, below, provides information about Lake Hennessey's tributary watershed area, average annual inflow, total storage capacity, normal-year yield, multiple-dry years yield, and critical single-dry year yield. In addition, current storage volume as of June 2021 is also provided.

Table 3.13-4
Lake Hennessey Statistics

Tributary Watershed Area	35,000 acres
Average Annual Inflow	19,692 acre-feet (AF)
Total Storage Capacity (Maximum Yield)	31,000 AF
Normal-Year Yield	17,500 AF
Multiple-Dry Years Yield	10,417 AF
Single-Dry Year Yield	5,000 AF
Current (6/23/21) Storage Volume	19,776 AF

Source: City of Napa 2017 and City of Napa 2021.

Milliken Reservoir

Milliken Reservoir, located approximately five miles northeast of the City of Napa, serves as a seasonal water supply source during the summer months. The City of Napa has a license with the SWRCB that authorizes it to divert and store up to 2,350 acre-feet of water per year for beneficial use. The reservoir has an approximate storage capacity of 1,390 acre-feet and an annual average inflow of 3,656 acre-feet (City of Napa 2017). Water from Milliken Reservoir is treated at the Milliken Water Treatment Plant in Napa County. Table 3.13-5, below, provides information including Milliken Reservoir's normal-year yield, multiple-dry years yield, and critical single-dry year yield. In addition, current storage volume as of January 2021 (most recent data available) is also provided.

Table 3.13-5
Milliken Reservoir Statistics

Tributary Watershed Area	6,000 acres
Average Annual Inflow	3,656 acre-feet (AF)
Total Storage Capacity (Maximum Yield)	1,390 AF
Normal-Year Yield	700 AF
Multiple-Dry Years Yield	700 AF
Single-Dry Year Yield	400 AF
Current (1/28/2021) Storage Volume	1,131 AF

Source: City of Napa 2017 and City of Napa 2021a.

State Water Project

Starting in 1966, the City has sub-contracted with NCFCWCD for imported surface water from the SWP. The SWP diverts water from the Sacramento-San Joaquin Delta at the Barker Slough Pumping Plant east of the City of Vacaville. This water is then conveyed approximately 21 miles through the North Bay Aqueduct to Cordelia Forebay to serve contractors in Napa and Solano counties. The water is treated at the Edward I. Barwick Jamieson Canyon Water Treatment Plant, in the City of Napa. The majority of this water supply is for SWP entitlements for the City of Napa and the City of Calistoga. This water is also supplied to the City of American Canyon. The City of Napa was originally granted gradually increasing annual allotments, known as "Table A" entitlements, of SWP water in its original 1966 agreement with NCFCWCD. These allotments reached a maximum of 12,500 acre-feet by 1990. However, the agreement was modified in 1982 to reduce the City's short-term entitlement but increase its final overall entitlement to 18,800 acre-feet by 2021. In 2009, the contract was amended to accelerate the entitlement schedule, and the City of Napa was granted its full 2021 entitlement of 18,800 beginning in 2010. Additionally, in 2000, the City of Napa obtained an additional 1,000 acre-feet per year of SWP water in a transfer agreement between NCFCWCD and the Kern County Water Agency. In 2006, the City of Napa purchased the City of St. Helena's 1,000 acre-feet Kern County Water Agency entitlement.

Furthermore, in 2009, the City signed a water transfer agreement with the Town of Yountville, obtaining Yountville's total SWP Table A entitlement of 1,100 acre-feet per year, along with its North Bay Aqueduct conveyance capacity. Therefore, combined, the City of Napa has a total entitlement to 21,900 acre-feet of water per year. However, actual deliveries are determined by the Department of Water Resources depending on each year's hydrologic conditions. The full entitlement amount would typically only be available during very wet years. The Department of Water Resources estimates that 62% of SWP contractors' entitlements would be available for deliver in a normal year, 29% would be available during a multi-dry year period, and 11% would be available during a single-dry year (City of Napa 2017). The current SWP contract is due to expire in 2035 with an extension to 2085 anticipated. Table 3.13-6 lists SWP estimated delivery amounts during normal, multiple-dry, and critical single-dry years.

Table 3.13-6
SWP Reliability Assumptions

Water Year Type	Projected SWP Delivery (percent of Table A entitlement)	Advanced Table A entitlement (acre-feet)	Total SWP Deliveries (acre-feet)
Normal Year	62%	-	13,578
Multiple-Dry Years	5%	3,772	6,351
Single-Dry Year	29%	-	4,867

Source: City of Napa 2017.
Note:
[1] 100% Table A entitlement is 21,900 acre-feet

Groundwater

The groundwater basin applicable to the Project site is the Napa-Sonoma Valley Basin, which is further divided into the Napa Valley Subbasin, which contains about 209,619 acre-feet of water on average. This large basin is further divided into the St. Helena Subarea, which lies under the City (Napa County 2018). Groundwater levels within the northern portion of the St. Helena Subarea remain relatively stable but exhibit greater seasonal declines of about 20 feet elsewhere in the subarea; however, lower groundwater levels have been observed in 2020 due to a relatively dry year as discussed in Section 3.9 Hydrology and Water Quality (Napa County 2017 and DWR 2021). The City owns and operates two active groundwater wells, collectively known as the Stonebridge Well Complex, located 410 and 670 feet below the surface that have a combined capacity of approximately 595 gallons per minute. These wells have the potential to provide 960 acre-feet of potable water per year if both could be operated continuously. The wells derive their water source from the Sonoma Volcanic aquifer. Being the most flexible source in the system, groundwater functions as a buffer to balance system flows based on availability of water in Bell Canyon and flow rates being delivered by the City of Napa. The City currently restricts the use of groundwater from these wells with the goal of limiting extraction to 450 AF per year for long term

sustainability. There is an existing well on the Project site that is presently not in operation (see Section 3.9, Hydrology and Water Quality for more information on groundwater resources).

City of St. Helena Safe Yield Water Supply

The City's total water supply is dependent on annual rainfall. Therefore, the City uses various sources to ensure sustainable yields. Safe yield thresholds developed by the City's Safe Yield Committee (no longer active) are summarized in Table 3.13-7, below.

Table 3.13-7
City of St. Helena Safe Yields

Source	Normal Water Year (Annual Safe Yield) (acre-feet)	Dry Year (Phase 2 Water Emergency) (acre-feet)	Critical Year (Phase 3 Water Emergency) (acre-feet)
Bell Canyon Reservoir	1,000	600	500
Stonebridge Well Complex[1]	350	514	471
City of Napa	600	600	600
Total	**1,950**	**1,714**	**1,571**

Source: City of St. Helena 2018.

[1] In an agreement with the environmental advocacy group Water Audit California, the City is monitoring water levels with a goal of limiting extraction to 450 AF per year on average (Napa Valley Register, 2021)

Due to the ongoing drought the City Council declared a Phase II water emergency on October 27, 2020, which went into effect on November 1, 2020. The amount of water allocated to commercial and residential uses is limited under this water emergency. Residential users are limited to 65 gallons per person per day. Single-family residences will receive an additional 2,500 gallons per month from April through October for landscape irrigation. No new water connections are allowed to be permitted during a Phase II water emergency. The director of public works is providing reports to the City Council and will recommend lifting the water emergency once adequate water supplies are available. A project may proceed through entitlement process during a water emergency, however if a building permit is issued and the City is in a water emergency, no water connection would be provided until the termination of the water emergency.

Water Treatment and Distribution

Water treatment services are provided by the City of St. Helena Water Treatment Division. Water from the Bell Canyon Reservoir is treated by three licensed water treatment operators at the Louis Stralla Water Treatment Plant (WTP), located on Crystal Springs Road in the northeastern part of the City (City of St. Helena 2015a, 2019a). The Louis Stralla WTP has a capacity of 4.3 million gallons per day (MGD). However, there are flow limitations in the inlet piping which restricts use of the plant to less than its capacity (City of St. Helena 2016). The Louis Stralla WTP typically treats 3.5 MGD due to these flow limitations (City of St. Helena 2018). The two groundwater wells that the City uses as a water source include a filtration facility, comprised of filtration tanks, chlorination

facilities, and a backwash return system (City of St. Helena 2016). Water from the City of Napa is received at the City of St. Helena's Rutherford Pump Station (City of St. Helena 2018).

Water distribution within the City is managed by the Utilities Division of the City's Public Work's Department. The Utilities Division reads water meters and conducts fire hydrant maintenance and water leak repairs and provides customer service (City of St. Helena 2019a). The City's treated water is distributed through six storage tanks, four pump stations, pumps, and a network of distribution pipelines (City of St. Helena 2016). In 2015, the City provided water service to approximately 2,312 connections (City of St. Helena 2018).

Projected Water Demand and Supply

The City of St. Helena's 2010 Water Supply Plan (Water Supply Plan[2]) includes an analysis of current and future water demands within the City. The water use habits of existing customers, land use plans providing data for expected growth, and laws and regulations that affect future water use were used to calculate future water demands. Water conservation measures were not considered in future demand calculations.

The Water Supply Plan includes projected water demands for two potential 1993 General Plan buildout scenarios, the Likely Buildout Scenario and the Full Buildout Scenario. Under the Likely Buildout Scenario, the City has the potential to construct 379 more residential dwelling units until buildout of the 1993 General Plan is reached in 2030. Under this scenario, the projected number of dwelling units was limited by the City's Growth Ordinance and not by the 1993 General Plan Land Use. However, due to a recent change in state law (Senate Bill [SB] 330) the City is no longer limiting residential development. In addition, this scenario accounts for the construction of over 277,000 square feet of commercial, retail, and institutional floor space. Under the Full Buildout Scenario, the City has the potential to construct 891 more residential dwelling units until buildout is reached in 2030. This scenario also includes adding slightly more than 338,000 square feet of commercial, retail, and institutional floor space during the term of the 1993 General Plan (City of St. Helena 2010). As noted throughout this EIR, the City adopted the 2019 General Plan in May 2019. However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. Nonetheless, this EIR will also evaluate the City's adopted 2019 General Plan for informational and consistency purposes. Under the City's 2019 General Plan, it was also assumed that the allowed number of new residential units would be limited to 9 units per year, or a total of 72 units over the eight-year term of the Housing Element (2015 to 2023). As stated previously, the City is no longer allowed to limit residential development due to the passage of SB 330. The 2019 General Plan EIR determined there would

[2] The 2010 Water Supply Plan is the most recent document available; however, an Integrated Utility Master Plan is in the process of being prepared at the time of preparation of this document.

be no expected increase in water demand since new developers would be required to comply with the City's Water Neutral Policy for Development (see Section 3.9, Hydrology and Water Quality) and offset all new water demands with water conservation retrofits or in-lieu payments for the City to undertake such retrofits (City of St. Helena 2018).

Table 3.13-8 shows details for projected water supplies and demand in the City under the 2010 Water Supply Plan Likely Buildout Scenario and the Full Buildout Scenario.

Table 3.13-8
City of St. Helena Projected Water Supply and Demand

Buildout Scenario		Wet Year (40% exceedance) No WSE	Normal Year (60% exceedance) No WSE	Below Normal Year (82% exceedance) Phase II WSE	Dry Year (90% exceedance) Phase IV WSE	Critical Dry Year (100% exceedence) Phase V WSE
Annual Water Demand (acre-feet)/year						
Likely Buildout Scenario	Demand	2,350	2,350	2,115	1,674	1,321
	Supply	2,375	2,250	2,286	1,714	1,286
	Surplus (Deficit)	25	(100)	171	40	(35)
Full Buildout Scenario	Demand	2,600	2,600	2,340	1,966	1,499
	Supply	2,375	2,250	2,286	1,714	1,286
	Surplus (Deficit)	(225)	(350)	(54)	(252)	(213)

Source: City of St. Helena 2010.
Note: WSE = Water Shortage Emergency

As shown in Table 3.13-8, water supplies under both the Likely Buildout Scenario and the Full Buildout Scenario would not be sufficient to meet demands during all scenarios. The 2010 Water Supply Plan estimates that the City would likely face water supply shortages after 2020, but before 2030 under current operations (City of St. Helena 2010). Therefore, the City must consider what combination of water conservation measures, acquiring additional surface water from the City of Napa, and groundwater use can be used to meet future demands. The 2010 Water Supply Plan estimated that 495 acre-feet of metered potable water demand could be saved if water conservation measures were implemented. Recommended water conservation actions included (City of St. Helena 2010):

- Hiring a Water Conservation Coordinator
- Modifying and adopting a water rate structure that will ensure adequate program funding while encouraging water conservation by accounting for reduced water consumption in the base water rate and increasing high tier rates

- Increasing groundwater production reliability and winter pumping capacity

In 2010, the City's Safe Yield Committee was commissioned to analyze the reliability of the City's water supplies into the future. The Safe Yield Committee found that the long-term safe yield of the City's water supply is 1,950 acre-feet per year, which consists of 600 acre-feet from the City of Napa contract, a conservative 900 acre-feet from Bell Canyon reservoir, and an average use of 450 acre-feet from groundwater. As shown in Table 3.13-1, recent water usage (or deliveries as the table identifies) in the City is well below the 1,950 acre-feet target, with water usage ranging from 1,882 (2013) to 1,465 acre-feet (2016) over the last eight years. To reduce future water demand within the City, the City established a water-neutral policy, requiring future development to completely offset its water use. Future water demands estimated in the City's Water Supply Plan do not consider water conservation measures. Considering the current downward water usage trend due to water conservation measures and that future demands are required to offset their projected use, future water demand is not expected to exceed the existing policy limit of 1,950 acre-feet annual use set by the Safe Yield Committee (City of St. Helena 2011).

Wastewater

The City's Public Works Department provides wastewater collection and treatment services to the city. Wastewater in the city is collected and distributed through an over 22-mile system of 4-inch to 24-inch pipes and trunk lines and treated at the City's wastewater treatment plant (WWTP) (City of St. Helena 2014). The City currently provides sewer service to approximately 1,726 connections, of which approximately 75% are residential (City of St. Helena 2018). The WWTP, located at 1 Chaix/Thomann Lane in the southeastern portion of the city, currently has a permitted dry weather treatment capacity of 0.5 MGD. The WWTP has a permitted wet flow capacity of 2.8 MGD and treats 0.36 MGD of average wet weather flow. In 2020, approximately 0.384 MGD of wastewater was treated in the City on average. The plant provides secondary treatment for domestic and commercial wastewater from the City through a series of five ponds. Plant treatment processes include Type I and Type 2 Advanced Integrated Pond Systems, a comminuter (solids grinder), chlorine disinfection, and dechlorination. During dry weather conditions, the WWTP disposes effluent by spray irrigation onto a 90-acre grass field, and during wet weather, when irrigation fields are saturated, treated effluent is discharged into the Napa River in accordance with National Pollutant Discharge Elimination System (NPDES) permit No. CA0038016 (SFB RWQCB 2016). In 2020, the WWTP discharged approximately 54 million gallons of reclaimed water for irrigation and 13 million gallons into the Napa River (pers. comm. Erin Sanders, City of St. Helena 2021).

In 2016, the City received a cease and desist order from the California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. The cease and desist order was received because the WWTP did not have the ability to implement advanced secondary treatment of waters discharged into the Napa River, a requirement imposed by the NPDES permit reissued to the

WWTP in 2016. As the plant is currently designed only to provide secondary treatment, in order to meet the RWQCB's requirements, the plant would be required to undergo modifications to achieve advanced secondary treatment. The RWQCB establishes a time schedule of no more than five years for the WWTP to undergo the necessary improvements. At this time, the City has produced a Final Feasibility Study that evaluates options to come into compliance with the reissued NPDES permit (SFB RWQCB 2016). The study details two alternatives, Alternative 1, which involves converting the WWTP's Pond 4 to constructed wetlands that would provide additional treatment through a series of physical, chemical, and biological mechanisms, and Alternative 2, which involves implementation of trickling filters for secondary treatment. Alternative 2 was ultimately recommended for further examination and detailed design in a Facility Master Plan (City of St. Helena 2016). The City has recently completed plans for modifying and upgrading the WWTP to a Title 22 Tertiary Treatment Plant identified as Alternative 2, and work on upgrading the plant is anticipated to begin sometime in Summer 2021 to be completed by late summer 2022. The City is also pursuing a recycled water distribution system for landscape irrigation. It is not known if the City has funding to implement this project.

The 2015 Facilities Evaluation for the WWTP concluded that the total WWTP capacity was sufficient when operated under design conditions. The average dry weather flow treated in 2014 was 0.36 MGD, the average annual flow treated in 2014 was 0.47 MGD, and the highest daily flow treated was 1.03 MGD during wet weather. The 2015 Facilities Evaluation indicated that as the service area population was growing only slightly and per capita wastewater flows are declining due to conservation measure, the existing WWTP capacity is sufficient in the short-term. The report projected that the 2030 average dry weather flows into the WWTP would be approximately 0.50 MGD. However, the report indicated that the capacity should be increased to 0.65 MGD by 2030 to account for uncertainty (City of St. Helena 2016). As of 2020, the average dry weather flow treated was 0.36 MGD, the average annual flow treated was 0.38 MGD, and the highest daily flow treated was 1.05 MGD during wet weather (pers. comm. Sanders. 2021).

Stormwater Drainage

The direction of stormwater flow in the city is generally from the mountain ranges to the west to the Napa River at the City's eastern boundary. This drainage is largely collected by creeks that flow into the Napa River, including York Creek and Sulphur Creek. The City's stormwater drainage system, which consists of a variety of inlet structures and collection systems, discharges into these creeks or directly into the Napa River. Drainage is collected through a system of gravity flow pipes, ditches, channels, and creeks. The City's storm drainage pipes range from 4 to 60 inches in diameter (City of St. Helena 2000). The City's Public Works Department maintains drain inlets and drain manholes. Several of the storm drainage facilities are located within sidewalks or other public rights-of-way.

At present, stormwater moves as sheet flow across the Project site. The Project site does not contain any existing storm drain infrastructure. Section 3.9, Hydrology and Water Quality evaluates capacity of the City's stormwater infrastructure and water quality impacts associated with stormwater discharge.

Solid Waste

Upper Valley Disposal & Recycling (UVD) provides solid waste services to residents and businesses within the city. UVD provides weekly residential and commercial refuse and recycling pickup and disposal throughout upper Napa County. UVD also offers a Business Food Compost Program for commercial food collection (UVD 2019). In addition, UVD provides a variety of waste reduction programs, including municipal solid waste, nonhazardous materials, mixed recycling and yard waste recycling. A single-stream recycling program accommodates a wide array of wastes including plastic, glass, steel, tin, aluminum, and most types of paper and cardboard. The agency also conducts public education to teach residents and businesses about composting and its recycling and electronic waste disposal programs (City of St. Helena 2010). As of 2016, approximately 69% of collected waste was diverted from landfills by UVD (City of St. Helena 2018).

Solid waste generated within the city is disposed of at the Clover Flat Landfill, an approximately 79-acre Class III landfill site located at 4380 Silverado Trail Road, north of the city (CalRecycle 2019). The Clover Flat Landfill has a maximum permitted throughput of 600 tons per day and total permitted site capacity of 4.9 million cubic yards. The landfill receives approximately 150-175 tons per day of solid waste on average and has an estimated remaining capacity of 2.62 million cubic yards. The facility has an estimated closure date of 2047 (CalRecycle 2018). The landfill accepts nonhazardous solid waste and inert waste; hazardous wastes, liquid wastes, sewage sludge, or infectious wastes are not accepted at this facility. The landfill accepts food waste for composting and transfer, along with mixed loads of construction and demolition materials for recycling (CFL Inc. 2018).

3.13.3 Regulatory Setting

Federal Regulations

The following federal regulations pertaining to utilities and service systems would apply to the Proposed Project.

Water

Federal Water Pollution Control Act

The Federal Water Pollution Control Act (33 USC 1251 et seq.), otherwise known as the Clean Water Act (CWA), sets forth national goals that waters shall be "fishable, swimmable" waters (CWA Section 101 (a)(2)). To enforce the goals of the CWA, the U.S. Environmental Protection Agency (EPA) established the NPDES program. NPDES is a national program for regulating and administering permits for discharges to receiving waters, including non-point sources. Under Section 1251 (b) of the CWA, Congress and the U.S. EPA must recognize and preserve the primary responsibilities and rights of states concerning the reduction of pollution in water resources.

Numerous agencies have responsibilities for administration and enforcement of the CWA. At the federal level this includes the U.S. EPA, the U.S. Army Corps of Engineers, 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, with the exception of tribal lands, the California EPA and its sub-agencies, including the SWRCB, have been delegated primary responsibility for administering and enforcing the CWA in California.

Safe Drinking Water Act

The Safe Drinking Water Act of 1974 gave the U.S. EPA the authority to set standards for contaminants in drinking water supplies. The U.S. EPA was required to establish primary regulations for the control of contaminants that affected public health and secondary regulations for compounds that affect the taste, odor, and aesthetics of drinking water. Title 22 of the California Administrative Code establishes Department of Public Health and SWRQCB implementing authority and stipulates state drinking water quality and monitoring standards.

Wastewater

National Pollution Discharge Elimination System Permit

Discharge of treated wastewater to surface water(s) of the United States, including wetlands, requires a NPDES permit. In California, the RWQCBs administer the issuance of these federal permits. Obtaining an NPDES permit requires preparation of detailed information, including characterization of wastewater sources, treatment processes, and effluent quality. Whether or not a permit may be issued, the conditions of a permit are subject to many factors such as basin plan water quality objectives, impaired water body status of the receiving water, historical flow rates of the receiving water, effluent quality and flow, the air quality State Implementation Plan, the California Toxics Rule, and established total maximum daily loading rates for various pollutants. These factors are highly specific to the potential discharge point. Obtaining an NPDES permit is

generally considered difficult in inland areas and may not be possible in sensitive areas. The City is within the jurisdiction of the San Francisco RWQCB and has a current NPDES permit No. CA0038016 (SFB RWQCB 2016).

Federal and State Clean Water Act

The Porter–Cologne Water Quality Control Act gives the ultimate authority over California water rights and water quality policy to the SWRCB. The Porter–Cologne Act also established nine RWQCBs to ensure that water quality on local/regional levels is maintained. The Project site is under the jurisdiction of the Central Valley RWQCB.

Stormwater

Clean Water Act

The Clean Water Act (CWA), as amended by the Water Quality Act of 1987, is the major federal legislation governing water quality (33 USC 1251 et seq.). The objective of the CWA is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." The CWA establishes basic guidelines for regulating discharges of both point and non-point sources[3] of pollutants into the waters of the United States. The CWA requires that states adopt water quality standards to protect public health, enhance the quality of water resources, and ensure implementation of the CWA. See Section 3.9, Hydrology and Water Quality, for more information.

Federal Antidegradation Policy

The federal antidegradation policy (40 CFR Section 131.12) of the federal CWA is designed to protect water quality and water resources. The policy requires states to develop statewide antidegradation policies and identify methods for implementing them. State antidegradation policies and implementation measures must include the following provisions: (1) existing instream uses and the water quality necessary to protect those uses shall be maintained and protected; (2) 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 (3) 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. State permitting actions must be consistent with the federal

[3] Point source discharges are those emanating from a pipe or discrete location/process, such as an industrial process or wastewater discharge. Non-point source pollutants are those that originate from numerous diffuse sources and land uses, and which can accumulate in stormwater runoff or in groundwater.

Antidegradation Policy. See Section 3.9, Hydrology and Water Quality, for a detailed discussion of federal stormwater regulations.

Solid Waste

Resource Conservation and Recovery Act, Subtitle D

Code of Federal Regulations, Volume 40, Part 258 (Resource Conservation and Recovery Act, Subtitle D) states criteria for the location, operation, design, monitoring, and closure of municipal solid waste landfills. The code requires states to conduct their own permitting program for landfills that follow this criteria.

State

Water

Porter–Cologne Water Quality Control Act

The Porter–Cologne Water Quality Control Act (Porter–Cologne) gives the ultimate authority over California water rights and water quality policy to the California SWRCB. Porter–Cologne also established nine RWQCBs to ensure that water quality on local/regional levels is maintained. The city is under the jurisdiction of the San Francisco RWQCB.

Urban Water Management Planning Act

In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610–10656). The act requires that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet per year shall prepare and adopt an Urban Water Management Plan. The City does not meet the population requirements for preparation of an Urban Water Management Plan.

Drinking Water Quality

It is the responsibility of the SWRCB and the Department of Public Health to implement the Federal Safe Drinking Water Act, as well as California statutes and regulations related to drinking water. The SWRCB inspects and provides regulatory oversights to public water systems within California, to ensure their compliance. The San Francisco RWQCB protects the beneficial uses, including municipal drinking water supply, of state waters in the San Francisco Bay area.

In accordance with Title 22 of the California Code of Regulations, public water system operators regularly monitor their drinking water sources for microbiological, chemical, radiological, and aesthetic contaminants to ensure that they do not exceed the primary maximum contaminant

levels. The amount of contaminants in drinking water needs to be disclosed to the public annually, by the water supplier, in a consumer confidence report. It is the responsibility of the water supplier to produce and distribute the report and the responsibility of the U.S. EPA to prepare annual summary reports of water system compliance.

Senate Bill X7-7

On November 10, 2009, Governor Arnold Schwarzenegger signed SB X7-7, which requires each urban water supplier to select one of four methods for achieving water conservation targets for 2020. This bill establishes a statewide goal of achieving a 20% reduction in urban per capita water use by 2020 for urban retail water suppliers. The City and its customers have been and continue to implement conservation measures that are moving the City toward desired statewide reductions. On-going statewide, regional, and City efforts, combined with natural attrition and replacement of water fixtures and appliances with more water efficient units will continue to decrease future water demand for future customers.

California Green Building Standards Code

In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CalGreen) that requires the installation of water-efficient indoor infrastructure for all new projects beginning after January 1, 2011. CalGreen was incorporated as Part 11 into Title 24 of the California Code of Regulations (CCR). CalGreen applies to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure. All development projects must satisfy the indoor water use infrastructure standards necessary to meet CalGreen.

CalGreen requires residential and nonresidential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside the building by 20%. The 20% water savings can be achieved in one of the following ways: (1) installation of plumbing fixtures and fittings that meet the 20% reduced flow rate specified in CalGreen, or (2) by demonstrating a 20% reduction in water use from the building “water use baseline.”

California Model Water Efficient Landscape Ordinance and County Ordinance

In 2006, the California Legislature enacted, and the Governor signed, the Water Conservation in Landscaping Act, which required the Department of Water Resources to update the Model Water Efficient Landscape Ordinance (MWELO). On September 10, 2009, the Office of Administrative Law approved the updated MWELO, which required that a retail water supplier and county adopt the provisions of the MWELO by January 1, 2010, or enact its own provisions equal to or more restrictive than the MWELO provisions. The County of Napa adopted the MWELO as its ordinance so all water use calculations have been following the MWELO steps. The City also has a

landscaping ordinance, which issues landscaping approval after reviewing project-specific landscaping plans. The City ordinance follows the MWELO calculation methods.

California Water Code Section 525

California Water Code Section 525 requires water purveyors to install meters on all new service connections after January 1, 1992. As a result, homes constructed after January 1, 1992 all have water meters installed. California Water Code Section 527 requires water purveyors to charge for water based upon the actual volume of water delivered if a meter has been installed.

Wastewater

General Waste Discharge Requirements for Sanitary Sewer Systems

The General Waste Discharge Requirements (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. The WDRs require that the local jurisdiction approve the SSMP.

Stormwater

General NPDES Permits and WDRs

To enable efficient permitting under both the CWA and the Porter–Cologne Act, the SWRCB and the RWQCBs run permit programs that group similar types of activities that have similar threats to water quality. These "general permit" programs include the Phase II Small Municipal Separate Storm Sewer System (MS4)[4] Permit, the construction general permit, and other general permits for low-threat discharges. The Construction Stormwater Program and the Small MS4 Permit are administered by the SWRCB, while other general WDRs are administered by the Central Valley RWQCB. Point source discharges or other activities that threaten water quality that are not covered under a general permit must seek individual NPDES permits and/or WDRs, depending on the type, location and destination of the discharge. For these types of discharges, the initial step in the process is to submit a "Report of Waste Discharge" to the San Francisco RWQCB, who then determines the appropriate permitting pathway. See Section 3.9, Hydrology and Water Quality, for more information.

[4] A small MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that serve populations of fewer than 100,000 persons.

California Sustainable Groundwater Act

The Sustainable Groundwater Management Act is a package of three bills (Assembly Bill [AB] 1739, SB 1168, and SB 1319) that provides local agencies with a framework for managing groundwater basins in a sustainable manner. The Sustainable Groundwater Management Act establishes minimum standards for sustainable groundwater management, roles and responsibilities for local agencies that manage groundwater resources, as well as priorities and timelines to achieve sustainable groundwater management within 20 years of adoption of a Groundwater Sustainability Plan. Central to the Sustainable Groundwater Management Act is the identification of critically over-drafted basins and the prioritization of groundwater basins, the establishment of Groundwater Sustainability Agencies, and the preparation and implementation of Groundwater Sustainability Plans for medium priority, high priority, and critically over drafted basins. Groundwater Sustainability Agencies must be formed by June 30, 2017; and Groundwater Sustainability Plans must consider all beneficial uses and users of groundwater in the basin, as well as include measurable objectives and interim milestones that ensure basin sustainability. A basin may be managed by a single Groundwater Sustainability Plan or multiple coordinated Groundwater Sustainability Plans. See Section 3.9, Hydrology and Water Quality, for more information.

Solid Waste

California Integrated Waste Management Act—AB 939

To minimize the amount of solid waste that must be disposed of by transformation (i.e., recycling) and land disposal, the State Legislature passed the California Integrated Waste Management Act of 1989 (AB 939), effective January 1990. According to AB 939, all cities and counties are required to divert 25% of all solid waste from landfill facilities by January 1, 1995, and 50% by January 1, 2000. Solid waste plans are required to explain how each city's AB 939 plan will be integrated within the respective county plan. They must promote (in order of priority) source reduction, recycling and composting, and environmentally safe transformation and land disposal. Cities and counties that do not meet this mandate are subject to $10,000–per-day fines. The City of St. Helena participates in the Upper Valley Waste Management Agency to achieve compliance with AB 939.

Mandatory Commercial Recycling – AB 341

AB 341 was adopted as part of the AB 32 Scoping Plan by the Air Resources Board pursuant to the California Global Warming Solutions Act on January 17, 2012. The regulation requires businesses that generate 4 cubic yards or more of commercial solid waste per week and multifamily residential dwellings of five units or more to arrange for recycling services. The measure focuses on increasing commercial waste diversion to reduce greenhouse gas emissions.

Mandatory Commercial Organics Recycling – AB 1826

AB 1826 was enacted in October 2014 in order to divert commercial organic waste from landfills. The measure requires businesses and multifamily residential dwellings of five or more units to recycle organic waste on and after April 1, 2016 depending on how much solid waste they generate per week. The law includes phasing of requirements over time to ensure that the minimum threshold of organic waste generation by businesses decreases gradually.

Local

City of St. Helena 1993 General Plan

The Public Facilities and Services Element of the St. Helena 1993 General Plan provides guiding policies regarding utilities and service systems, including the following:

> **Policy 9.2.1:** Approval of new development shall be contingent upon the ability of the City to provide water without exceeding the safe annual yield of its water supply system.
>
> **Policy 9.2.3:** Adopt and implement water conservation measures as a means of extending the capabilities of the City's water supply.
>
> **Policy 9.3.1:** Provide adequate sewage treatment capacity at the City treatment plant to meet the needs of population growth permitted under the City's Growth Management System.
>
> **Policy 9.3.3:** Require extension of City sewer to areas with limited sewerage capacity prior to approval of future growth in these areas.
>
> **Policy 9.4.1:** New development should provide adequate drainage improvements to handle generated storm runoff from the site to the nearest major watershed. The watersheds include York Creek, Sulphur Creek and the Napa River.
>
> **Policy 9.4.2:** If a City storm drain is available, the developer should participate in the funding to the extent it benefits the development.
>
> **Policy 9.4.3:** Extension of existing downstream drains which have adequate capacity should be completed at the developer's expense with future reimbursement for oversizing costs at the time of connection by others.

City of St. Helena 2019 General Plan ("General Plan Update 2040")

The Public Facilities and Services Element of the St. Helena 2019 General Plan provides guiding policies regarding utilities and service systems, including the following:

Policy PF1.1: Require that the approval of new development be contingent upon the ability of the City to provide water without exceeding the safe annual yield of its water supply system.

Policy PF1.2: Adopt and implement equitable water conservation measures for both residential and non-residential users so that the City can supply water within the safe yield of its water system.

Policy PF2.1: Ensure adequate sewage treatment capacity at the City treatment plant to meet the needs of population growth, taking into account the City's Growth Management System, the Regional Housing Needs Allocation, and the needs of non-residential users.

Policy PF3.1: Ensure that new developments provide adequate drainage improvements and detention to mitigate flooding from increased stormwater runoff attributable to the development.

City of St. Helena Municipal Code

St. Helena Water Conservation and Emergency Shortage Ordinances

The City has ordinances addressing water supply availability and water shortage contingencies including Chapter 13.12, Water Use and Efficiency of the Municipal Code requiring new developments to "completely offset its water requirement" by identifying residential or non-residential properties eligible for retrofitting with water efficient hardware and verifying that the required number of retrofits have been completed prior to the issuance of a certificate of occupancy. Section 13.04.220 of the Municipal Code also addresses water shortage emergency conditions.

Water Use and Efficiency and New Development Municipal Code Section 13.12.030

Chapter 13.12 of the Municipal Code Section 13.12.030 requires new development projects within the City to be water-neutral from the City-delivered water system. Prior to construction, any project is required to offset its water demand by providing for the implementation of conservation measures for existing households. The City's Municipal Code requires that this be demonstrated through a quantitative water analysis of the Proposed Project and can be achieved through any combination of on-site water conservation measures and/or off-site retrofitting and/or using well water. The quantitative water analysis must include a calculation of the baseline existing water demand, the proposed water demand, a comparison of the two and the proposed retrofits to achieve a zero water use increase from the proposed development. Specifically, new development shall completely offset its water requirement by installing city-approved ultra-low flush (ULF) toilets and associated water efficient hardware in a sufficient number of existing homes or nonresidential properties. Therefore, under this section, residential projects are required to complete toilet retrofits

or other City approved conservation measures to offset water use. This effectively locks City water demand at its current levels with the only minor climate related fluctuations. If the city council determines that retrofitting of existing residential or nonresidential buildings is impractical or constitutes an unusual hardship on an applicant, it may authorize the payment to the city of an in-lieu retrofit fee. The in-lieu fee shall be the equivalent of the cost of retrofitting a sufficient number of existing homes with the ULF toilets and other required water-saving devices. The City will administer a rebate program to retrofit existing homes using the fees collected or may use the fees for another water use efficiency purpose as approved by the city council. The Proposed Project applicant completed a Water Neutral Report included in Appendix J.

Developer Impact Fees Municipal Code Section 3.32.020

Pursuant to Chapter 3.32 of the Municipal Code Section 3.32.020, the City collects development impact fees on new development or conversions within the city to pay for public improvements related to civic improvement projects, public safety, sewer projects, water projects, traffic mitigation, and storm drainage.

Municipal Code Chapter 13.32

Chapter 13.32, Stormwater and Runoff Pollution Control of the City's Municipal Code contains the City's Stormwater and Runoff Pollution Control Ordinance. This ordinance empowers the City's Public Works Department to enforce stormwater pollution regulations, including:

- Prohibiting illicit discharges to the stormwater conveyance system;
- Establishing minimum requirements for stormwater management, including source control requirements, to prevent and reduce pollution;
- Establishing requirements for development project site design to reduce stormwater pollution and erosion;
- Establishing requirements for the management of stormwater flows from development projects, both to prevent erosion and to protect and enhance existing water-dependent habitats; and
- Establishing standards for the use of off-site facilities for stormwater management to supplement on-site practices at new development sites.

Title 16, Subdivisions, includes Chapter 16.32, Design Standards and Improvements, including Section 16.32.070, Drainage, which requires stormwater runoff from subdivisions to be collected and conveyed by an approved storm drainage system. The storm drainage system shall be designed by a registered civil engineer for ultimate development of the watershed and shall be capable of collecting and conveying runoff generated by the 10-year flood. The system shall

provide for the protection of abutting and off-site properties that may be adversely affected by any increase in runoff attributed to the development; off-site storm drain improvements may be required to satisfy this requirement. In addition, retention ponds, drainage swales and/or check dams may be required to reduce off-site peak storm flow generated by projects to the historic flow.

City of St. Helena Sewer System Management Plan

The City's SSMP was developed originally in 2006 to comply with requirements of a 2005 Order from the San Francisco RWQCB. Since then, the SSMP has been revised several times to comply with Provision D.13 of State Water Board Water Quality Order (WQO) 2006-0003 Sanitary Sewer System WDRs and the associated Monitoring Reporting Program. The SSMP was last updated in May 2016, and includes the City's sewer system management goals, operation and maintenance program, design and performance provisions, overflow emergency response plan, fat, oils, and grease control program, system evaluation and capacity assurance plan, and monitoring, measurement and program modifications.

City of St. Helena Storm Drainage Master Plan

The City's Storm Drainage Master Plan (Plan) was prepared in September 2000 to analyze the existing storm drain system within the city and to develop a long-term plan for improving the City's drainage facilities. The plan evaluates the capacity of the storm drain system to support existing development and identifies necessary improvements for future development. Preliminary cost estimates for recommended storm drainage improvements are also included to assist the City in establishing a capital improvements financing program and to confirm development impact fees. The City is in the process of completing a comprehensive update to the Plan and anticipates adoption sometime in Summer or Fall 2021.

Basin Analysis Report for the Napa Valley Groundwater Subbasin

Napa County submitted the Final Alternative Groundwater Sustainability Plan/Basin Analysis Report to the California Department of Water Resources on December 16, 2016, to meet the requirements of the 2014 Sustainable Groundwater Management Act. The report provides an analysis of the Napa Valley Subbasin, including the St. Helena Subarea, and includes groundwater management considerations and data.

City of St. Helena Source Reduction and Recycling Element

The City adopted a Source Reduction and Recycling Element to meet the requirements outlined in AB 939. The Source Reduction and Recycling Element sets forth goals that direct the City toward the solid waste diversion requirement and reduce the City's solid waste impact. The City of St. Helena participates in the Upper Valley Waste Management Agency to achieve compliance with AB 939.

3.13.4 Impacts

Methods of Analysis

The impact analysis considers the Proposed Project's effect on the demand for water supply, wastewater infrastructure and treatment, adequacy of stormwater infrastructure, and capacity of the landfill provider to attain solid waste reduction goals and compares this to the thresholds of significance listed below. The analysis considers whether existing utilities and service systems have adequate capacity and infrastructure to serve the demand generated by the Proposed Project and whether the Proposed Project would necessitate modifications to existing facilities or construction of new facilities to accommodate the increase in demand. Proposed Project demands for water, wastewater and solid waste are quantified below.

Water

Residential water demand factors are broken into two categories: single-family and multifamily. The dwelling unit demands for the 51 single-family units reflect detached homes located on an average lot of 8,330 square-feet, with individual landscaping, hardscapes, pools, and other anticipated outdoor features. Typically, single-family residences have a higher number of people per house than multi-family housing units and a larger landscaped area on a per person basis. The 25 multifamily units share common landscaped areas and have minimal or no individual landscape demand. Multifamily residences typically have a lower average number of people per unit than a single-family unit. These factors result in lower dwelling unit water demand for multi-family residential units. The Proposed Project also includes 11 accessory dwelling units (ADUs) that are treated as multifamily units for the purposes of quantifying demand. The residential unit demand factors described below reflect two distinct uses: indoor use and outdoor use.

A Water Neutral Report (Appendix J) was prepared for the Proposed Project to demonstrate compliance with the City's Water Neutral Policy. The water analysis calculates the estimated water demand of Proposed Project operation and potential water off-set measures. Indoor water usage factors used in the analysis are based on water usage from water fixtures and appliances in relation to the number of occupants as defined by the City's Water Neutral Policy. See Appendix J for a breakdown of water demand factors used to calculate total Proposed Project water demands. Note that the ADUs are not identified separately in the preliminary water calculation. However, the water demand for single family residences assumes eight persons per home, based on the City's demand factor of four bedrooms and two persons per bedroom. This assumes a higher persons per household for the purposes of calculating water demand, as compared to the City's persons per household of 2.45 to determine a project's population (City of St. Helena 2015b). Given the size of the ADUs, one to two persons would be a typical occupancy. Therefore, the residential indoor water demand calculations could accommodate an above-average size household and an occupied ADU.

Residential lots with ADUs would not have additional outdoor water demand (and may have less outdoor water demand, as the area occupied by the ADU might otherwise be landscaped).

The Proposed Project's water demand is provided below in Table 3.13-9. The Proposed Project is estimated to have a total water demand of 37.04 acre-feet per year at completion, including 17.16 acre-feet for outdoor landscaping. The impact analysis for available water supply is based on a comparison of these water demand numbers to the listed thresholds of significance. Table 3.13-10 provides a more detailed breakdown of the indoor water demand

Table 3.13-9
Proposed Project Water Demands (acre-feet per year)

Water Sources	Indoor Water Demand[1]	Outdoor Water Demand	Total Demand
Municipal Water	19.88	0	19.88
On-Site Groundwater Well	0	17.16	17.16
Total Water Demand (acre-feet)	**19.88**	**17.16**	**37.04**

Source: Appendix J.
Note:
1 Existing water meters in the City do not separately track indoor and outdoor residential water use.

Table 3.13-10
Proposed Project Breakdown of Water Demand

Fixture	Flow Rate gal/min or gal/flush	Flow Duration (min., flush, load)	Daily Uses per Occupant	Number of Occupants1	Gallons per Day	Acre-feet Per Year
Showerheads	2	8	1	508	8,128	9.10
Sink Faucets	1.5	0.25	3	508	572	0.64
Kitchen Faucet	1.5	4	1	508	3,048	3.41
Toilet	1.3	1	3	508	1,981	2.22
Clothes Washer	19.7	1	0.37	508	3,703	4.15
Dish Washer	6.3	1	0.1	508	320	0.36
				Total Water Demand	**17,752**	**19.88**

Source: Appendix J.
Note:
1 For the purposes of determining the Proposed Project's water demand, the City's demand factor is based on the number of bedrooms and persons per bedroom, which differs from the City's persons per household (PPH) to determine the number of residents a residential project would generate, which is 2.45 PPH.

Wastewater

Projected wastewater generation for the Proposed Project is based on indoor water demand calculations included in the Water Neutral Report (Appendix J) prepared for the Proposed Project. The impact analysis for available wastewater capacity is based on a comparison of this wastewater generation calculation to the listed thresholds of significance. As shown in Table 3.13-10, the

Proposed Project would result in an indoor water use of approximately 19.88 acre-feet per year during operation. This translates to a wastewater generation rate of 19.88 acre-feet per year, or 0.018 MGD (Appendix J).

Solid Waste

The impact analysis for solid waste was based on a comparison of projected solid waste demand to the listed thresholds of significance. Table 3.13-11 displays the projected solid waste demand associated with Proposed Project operation. The solid waste generation rates used for Proposed Project operation are based on default generation rates used by CalEEMod, which uses CalRecycle data. The solid waste generation rates used for Proposed Project construction are based on U.S. EPA's 2003 report Estimating 2003 Building-Related Construction and Demolition Materials Amounts. To determine the approximate amount of construction debris the square footage of development was conservatively estimated to be 733,000 square feet, with 584,000 square feet for single-family lots and ADUs and 149,000 square feet for attached housing. Using the solid waste generation rate of 0.0022 tons per square feet, the Proposed Project is estimated to produce 1,445.4 tons of construction debris (U.S. EPA 2003).

To determine the amount of solid waste generated during Proposed Project operation, generation rates provided by CalRecyle were used and include the following:

Single Family Residential = 0.0033 tons/day/dwelling unit

Multifamily Residential = 0.0013 tons/day/dwelling unit

The projected amount of solid waste generated by Proposed Project operation is 0.2251 tons per day of residential solid waste or 82 tons per year, shown in Table 3.13-11. The City encourages contractors to use recycling and/or reuse (diversion) measures to reduce the amount of construction waste and other materials sent to landfills.

Table 3.13-11
Proposed Project Projected Waste Generation

Land Use	Number of Units	Generation Rate	Waste Disposed (tons per day)
Single Family	51	0.0033	0.1683
ADU	11	0.0013	0.0143
Multifamily/Attached	25	0.0013	0.0325
		Total	**0.2251**

Source: CalRecycle 2018.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act Guidelines, considerations for whether a significant impact may occur include whether the Proposed Project would:

- Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects.
- Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.
- Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.
- Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.
- Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

Impacts and Mitigation Measures

3.13-1: Would the Proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities? This impact is less than significant.

The Proposed Project would require new water, sewer, storm drain, electric power, natural gas, and telecommunications infrastructure on site to serve the proposed residential development designed in compliance with City specifications. The Project site is currently not served by City utilities. The Proposed Project's on-site water, sewer, and storm drain lines are proposed to be located within the street/driveway rights-of-way within the Project site. The City's water and wastewater treatment and conveyance facilities, stormwater drainage facilities, and electric power, natural gas, and telecommunication facilities are expected to have the capacity to accommodate the demands of the Proposed Project, as discussed below.

Water Treatment

An existing 10-foot wide public water line easement containing an active 12-inch water line bisects the north/northeast portion of the Project site. This easement is proposed to be abandoned as part of the Project and the water line relocated.

The Proposed Project is proposing a looped 8-inch water main within Streets A and B that would connect to the existing water main at two locations. A new 8-inch water main is also proposed within the extension of Adams Street to connect to the existing water main at the southwest end of the Project site. An existing well is located near the southeastern end of the Project site that is proposed to be maintained in place (in proposed Lot 19) and used to provide non-potable irrigation of exterior public landscaping areas. The Proposed Project would be designed not to exceed 0.4 acre-feet/year/dwelling unit of water based on the installation of increasingly efficient and lower-water-using fixtures and appliances and irrigation systems.

The Proposed Project's demand for treated water would be supported by the City's existing water treatment and delivery infrastructure, as well as necessary improvements. As shown in Table 3.13-9, the Proposed Project is expected to generate a water demand of approximately 37.04 acre-feet per year at build out. As described in the Setting section above, the Louis Stralla WTP, which treats water that is sourced from the Bell Canyon Reservoir, typically treats 3.5 MGD (3,920 acre-feet per year) and has a capacity of 4.3 MGD (4,817 acre-feet per year) (City of St. Helena 2018). The Proposed Project's water demand would represent a minimal percentage of the treatment capacity of the Louis Stralla WTP. In addition, the Proposed Project would be served by water from the City of Napa and the City's groundwater wells, which have treatment facilities of their own. As noted in the setting section, under a contract with the City of Napa the City receives 600 acre-feet annually and may request up to 200 acre-feet of additional water supply if the City of Napa has water supplies available. Furthermore, the City's groundwater would only account for a minimal amount of water use on the Project site, as the City currently limits the use of groundwater from the City's wells in an agreement with the Water Audit.

Therefore, water treatment facilities would be able to adequately serve the potable water demand of the Proposed Project and the Proposed Project would not exceed the capacity of these facilities. The Proposed Project would be served by a variety of available water supply sources, and the Proposed Project's landscape irrigation demand would be offset through water conservation measures and use of the on-site well (see Appendix J). Pursuant to Municipal Code Section 3.32.020, the City collects development impact fees on new development to pay for public improvements related to water projects. The Proposed Project applicant would pay these fees, which would help offset any increased demands on the City's water system. Therefore, the Proposed Project would not require or result in the relocation or construction of new or expanded water facilities, the construction or relocation of which could cause significant environmental effects. This impact would be **less than significant**.

Wastewater Treatment

Wastewater flows from the western portion of the Proposed Project are proposed to drain into an existing public manhole at the corner of Starr and Hunt Avenue via new 8-inch sewer pipes. The area

east of Starr Avenue, lower in elevation, is proposed to drain east through the Project site via new 8-inch sewer pipes, through Lot 21 within a public easement and into an existing public manhole on the adjacent parcel in the Vineyard Valley Mobile Home Park. The Proposed Project would install 8-inch sewer lines within all roadways to service the proposed residences. All sewer mains are sized to accommodate Proposed Project flows, per City standards, and designed at slopes to provide required self-cleaning velocities. Sewer laterals would be installed per City specifications.

The Proposed Project would increase the amount of wastewater requiring treatment at the City's WWTP. The Proposed Project is expected to generate approximately 0.018 MGD of wastewater during operation. The Proposed Project would not exceed the City's current permitted dry weather capacity of 0.5 MGD when combined with the average flow of 0.384 that is treated at the WWTP. Furthermore, pursuant to Municipal Code Section 3.32.020, the City collects development impact fees on new development to pay for public improvements related to sewer projects. The Proposed Project applicant would pay these fees, which would help offset any increased demands on the City's sewer system. Therefore, the Proposed Project would not result in or require the relocation or construction of wastewater treatment facilities, the construction or relocation of which could cause significant environmental effects. Impacts would be **less than significant**.

Stormwater Drainage

The Proposed Project would connect to the City's stormwater drainage system. The Project site drains to an existing City-owned detention basin that was constructed as part of the City's Flood Protection Project. New storm drain lines would be installed in Streets A, B, and C, and Adams Street. The southwesterly portion of the site is proposed to drain via gutter flow and proposed storm drain pipes and discharge into the existing Starr Avenue storm drain at several different locations. The remainder of the Proposed Project is proposed to drain to the northeast via gutter flow and storm drain pipes and discharge into the City's existing detention basin. The City requires that all storm drain pipes be sized to accommodate a 10-year storm within the pipe and 100-year storm within the street section.

The Proposed Project would result in an increase in stormwater runoff by converting predominantly undeveloped land to roadways, driveways, and residences, thereby increasing impervious coverage on the Project site. The Proposed Project would result in the addition of 10.91 acres of impervious surface, which is equivalent to an impervious surface coverage of 58%. The Proposed Project would be required to comply with the Bay Area Stormwater Management Agencies Association (BASMAA) requirements designed to prohibit non-stormwater discharges to storm drains and require use of Best Management Practices (BMPs) to minimize the amount of pollutants in runoff in accordance with the City's Phase II Stormwater NPDES Permit for small MS4s. The NPDES Permit includes a provision (Provision E.12) that mandates municipalities to require specified features and facilities (i.e., vegetated swales, LID features) to control pollutant sources,

control runoff volumes, rates, and durations, and to treat runoff before discharge from the site be included in development plans as conditions of issuing approvals and permits (BASMAA 2019). The Project is also designed to construct storm drains or as required, improve existing storm drains so that they have adequate capacity to carry the runoff produced by a 10-year storm. On-site storm flows from the single-family residential portion would be conveyed to the City's detention basin via underground storm drain lines varying in diameter from 15 to 30 inches. Storm runoff from the Project area east of the proposed Starr Avenue extension would be collected by 15-inch storm drains connected to the City's existing 36-inch storm drain. Stormwater flows would then be directed to the City's detention basin. Title 16 of the City's Municipal Code requires a new stormwater drainage system be designed by a registered civil engineer for ultimate development of the watershed, and to convey runoff generated by a 10-year flood event. Per Title 16, the stormwater drainage system must also be designed to provide for the protection of abutting and off-site properties, and off-site storm drain improvements may be required to satisfy this requirement. Street curbs would be designed to adequately collect and convey the runoff produced by a 100-year storm event. As indicated above, the City's detention basin was designed to accommodate stormwater runoff assuming 70% of the Project site would be developed with impervious surfaces (i.e., roads, sidewalks, homes).

Pursuant to Municipal Code Section 3.32.020, the City collects development impact fees on new development to pay for public improvements related to stormwater drainage projects. The Proposed Project applicant would pay these fees, which would help offset any increased demands on the City's stormwater drainage system. Therefore, the Proposed Project would not require or result in the relocation or construction of new or expanded stormwater drainage facilities; this impact would be **less than significant.**

Electric Power, Natural Gas, or Telecommunications Facilities

The Proposed Project would be served by Marin Clean Energy for electricity service and Pacific Gas & Electric Company for natural gas service. Telecommunications services are offered by various service providers within the City. The Project site is located in a developed area of the City, surrounded by commercial, office and residential uses to the west and south. Electric power, natural gas, and telecommunications services all exist adjacent to the Project site and the Proposed Project would tie into these services. The Proposed Project would not require the construction of new or relocation of electric power, natural gas, or telecommunications facilities. On-site electrical, natural gas and telecommunications connections would all be installed subsurface, no overhead facilities would be provided. Therefore, impacts would be **less than significant.**

Mitigation Measures

None required.

3.13-2: Would sufficient water supplies be available to serve the Proposed Project and reasonably foreseeable future development during normal, dry, and multiple dry years? This impact would be less than significant.

On March 22, 2011, the City Council adopted the definition of "Safe Yield" as proposed by the Safe Water Yield Committee.[5] The Safe Yield Committee found that the long-term safe yield of the City's water supply is 1,950 acre-feet per year, which consists of 600 acre-feet from the City of Napa contract, a conservative 900 acre-feet from Bell Canyon reservoir, and an average use of 450 acre-feet from groundwater. As shown in Table 3.13-1, recent water usage in the City is well below the 1,950 acre-feet target, with water usage ranging from ranging from 1,882 (2013) to 1,465 acre-feet (2016) and averaging 1,637 acre-feet over the last eight years. To reduce future water demand within the City, the City established a water-neutral policy, requiring future development to completely offset its post-construction water use. As discussed in the setting section, the City is currently under a Phase II water emergency that limits the amount of water for all commercial and residential uses and does not allow approval of new water connections. At this time, it is uncertain when the restrictions will be lifted. The analysis assumes adequate water supplies would be available, but it is under the purview of the City Council to make that determination. The 1993 General Plan Policy 9.2.1 requires approval of new development be contingent upon the ability of the City to provide water without exceeding the safe annual yield of its water supply system.

All new development in the state is required to comply with CalGreen that requires the installation of water-efficient indoor infrastructure to conserve water. In addition to CalGreen, all landscape irrigation is required to comply with the water requirements set forth in the MWELO, which the City has codified in the Municipal Code. Lastly, water meters would be installed for each single-family and multifamily unit.

The Proposed Project's estimated indoor water demand is 19.88 acre-feet per year at completion during normal water years (see Table 3.13-10). The Proposed Project's landscape irrigation demand would account for 17.16 acre-feet per year. Assuming the Proposed Project's entire water demand of 37.04 acre-feet per year, adding it to the highest water demand in recent years of 1,882 results in 1,919 acre-feet, below the Safe Yield of 1,950. In addition, the Proposed Project must comply with the City's water neutrality policy. In order to comply with this policy, a Water Neutral Report (Appendix J) was prepared for the Proposed Project, which estimates proposed water demand and quantifies water off-set mitigations. The report shows that the 37.04 acre-feet per year of water that would be used during Proposed Project operation would be completely offset through a combination of using the on-site water well for irrigation needs and implementation of water conserving measures, which are detailed in Appendix J. To comply with the City's water neutrality policy, the Proposed Project applicant is required to off-set the Proposed Project's water

[5] The March 2011 report is the most current version available.

demand as a condition of approval. To comply with this requirement the Proposed Project applicant would be required to provide in-lieu funds consistent with Municipal Code Section 13.12.030, which permits payment of in-lieu fees equivalent to the cost of retrofitting a sufficient number of existing homes with ULF toilets, funding water meter replacements (smart meter upgrade), old pipeline replacement, and other City-approved projects. The City would use the in-lieu fees to retrofit existing homes or for another water use efficiency purpose as approved by the City Council.

The existing on-site agricultural well is proposed to be used to provide non-potable supplies to the separately plumbed landscape irrigation systems throughout the Project site to irrigate public and private landscaping. Historically, this well has been used to serve the irrigation needs of the vineyard located on the property but is currently inoperable. The Proposed Project's landscape water demand is estimated at 17.16 acre-feet per year, which is within the capacity of the on-site well (groundwater impacts are further discussed in Section 3.9 Hydrology). In addition, the Proposed Project would be required to comply with the MWEL Ordinance.

The City has been well below the Safe Yield of 1,950 acre-feet per year in recent years with adequate water supplies through the use of the three different water supply sources. The City has adequate water to serve the demands of the Proposed Project. In addition, as a condition of approval, the Proposed Project applicant would pay the required fees to offset the Proposed Project's water demand in addition to implementing mandated water conserving measures. Therefore, sufficient water supplies are available to serve the Proposed Project and the impact would be **less than significant**.

Mitigation Measures

None required.

3.13-3: Would adequate wastewater treatment capacity be available to serve the Proposed Project's increase in demand in addition to the provider's existing commitments? This impact would be less than significant.

The City's WWTP would provide wastewater treatment service to the Project site. The City's WWTP operates under a NPDES permit and is permitted to discharge up to 0.5 MGD during dry weather and up to 2.8 MGD during wet weather of treated effluent (City of St. Helena 2016). The Proposed Project is expected to generate an average of 0.018 MGD of wastewater. As the WWTP currently treats an average flow of 0.384 MGD, the additional 0.018 MGD combined with the current average flow of 0.384 MGD would not exceed the plant's permitted allowable average dry weather flow effluent limit of 0.5 MGD, as specified under its NPDES permit (City of St. Helena 2016). The 2015 Facilities Evaluation for the WWTP concluded that the total WWTP capacity was sufficient when operated under design conditions. The 2015 Facilities Evaluation indicated that as

the service area population was growing only slightly and per capita wastewater flows are declining due to conservation measures, the existing WWTP capacity is sufficient in the short-term. The report projected that the 2030 average dry weather flows into the WWTP would be approximately 0.50 MGD. However, the report indicated that the capacity should be increased to 0.65 MGD by 2030 to account for uncertainty (City of St. Helena 2016). The San Francisco RWQCB specifies that water treatment facilities must follow conditions under their NPDES permit. The City has been notified by the RWQCB that treatment plant upgrades and an amended permit are required as part of a cease and desist order. The capacity issues of the plant are a function of nutrient load (intensity of effluent) and dry weather flow (amount of effluent). The RWQCB has not requested that there be a moratorium on new connections to the treatment plant.

Wastewater generated by the Proposed Project is not expected to be comprised of any new or substantially different chemical constituents than those that are typically present in these types of residential projects and are not expected to be of concern regarding permitted effluent limitations for chemical parameters. Because adequate capacity is available at the WWTP to serve the Proposed Project, this is considered a **less-than-significant impact**.

Mitigation Measures

None required.

3.13-4: Would the proposed project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? This impact would be less than significant.

Construction

The Proposed Project would increase solid waste generation in the City during construction. Using the solid waste generation rate of 0.0022 tons per square feet, it is estimated that during Proposed Project construction approximately 1,612.6 tons of solid waste would require disposal. The City encourages recycling of construction debris to the extent feasible. In addition, the 2016 CALGreen Tier 1 mandatory measures require preparation of a Construction Waste Management Plan that documents the diversion of materials as required by CALGreen and at least 65% of nonhazardous construction waste would be required to be recycled or salvaged. Assuming a 6-year buildout, the amount of construction-related solid waste would be approximately 201.6 tons per year (0.55 tons per day) at maximum. The Clover Flat Landfill has a maximum permitted throughput of 600 tons per day. As the landfill receives approximately 150–175 tons per day of solid waste on average, this allows for a remaining capacity of approximately 425 tons of solid waste per day. Therefore, the Proposed Project's construction waste, conservatively assuming none would be diverted or recycled, would contribute less than 0.1% of the landfill's remaining permitted capacity per day. As this is a minimal contribution, the Clover Flat Landfill would have adequate landfill capacity for the

Proposed Project's construction debris and the Proposed Project would not impair the attainment of solid waste goals resulting in a **less-than-significant impact.**

Operation

In addition to construction waste, the Proposed Project would generate about 0.225 tons per day of solid waste during operation, as shown in Table 3.13-11. As described above, the Clover Flat Landfill has a maximum permitted throughput of 600 tons per day and a total permitted site capacity of 4.9 million cubic yards. The amount of solid waste generated during Proposed Project operation would be 0.04% of the average unused daily capacity of the Clover Flat landfill, and therefore would not exceed the capacity of the landfill. UVD provides solid waste services to residents and businesses within the City and diverted approximately 69% of collected waste from landfills in 2016 (City of St. Helena 2018). The amount of solid waste generated during Proposed Project operation would not cause the maximum permitted use capacity of the Clover Flat landfill to be exceeded. The Proposed Project would comply with the City's Source Reduction and Recycling Element solid waste diversion requirement and the California AB 939 solid waste diversion requirements. The Clover Flat Landfill provides mandated commercial recycling processing services, production of organic feedstocks for composting, and renewable energy generation. The Proposed Project would be required to comply with all applicable local and state solid waste diversion, minimization and recycling regulations. Therefore, the Proposed Project's solid waste demands would not exceed the capacity of the Clover Flat landfill or impair the attainment of solid waste reduction goals and the impact is **less than significant.**

Mitigation Measures

None required.

3.13-5: Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? This impact would be less than significant.

The Proposed Project would be required to comply with federal, state, and local statutes and regulations related to solid waste during Proposed Project construction and operation. Solid waste collection would be provided by UVD and disposal and recycling would be provided at the Clover Flat Landfill. The volume and type of solid waste generated during construction and operation of the Proposed Project would be consistent with this type of residential development. As described previously, the Proposed Project would comply with the City's Source Reduction and Recycling Element solid waste diversion requirement, which addresses the solid waste reduction requirements set forth in AB 939, and the 2016 CalGreen Tier 1 mandatory measures. The Proposed Project would be required to comply with all applicable federal, state, and local statutes and regulations related to solid waste, and impacts would be **less than significant.**

Mitigation Measures

None required.

3.13.5 Cumulative Impacts

The cumulative analysis for impacts to public utilities is based on buildout of development identified in the City's 1993 General Plan. The geographic scope of the cumulative impact analysis for public utilities includes the service areas for the Louis Stralla WTP, the City's WWTP, UVD, and the Clover Flat Landfill. While the Proposed Project is required to be evaluated under the 1993 General Plan, any changes relative to the 2019 General Plan are also evaluated for informational purposes. Both the 1993 General Plan EIR and the 2019 General Plan EIR determined that cumulative impacts associated with buildout of the City related to utilities would be less than significant.

3.13-6: The Proposed Project would contribute to an increase in demand for water supply, wastewater treatment, stormwater and solid waste. The Project's contribution would not be considerable.

Past, present and probable future projects within the City are anticipated to increase demands on treated water supplies and infrastructure, wastewater treatment needs, stormwater drainage facilities and solid waste disposal, which could affect the capacity of existing facilities that serve the City and potentially necessitate improvements or expansion of these facilities which could result in environmental impacts.

Water Supply

The City's 2010 Water Supply Plan includes an analysis of current and future water demands within the city under two potential 1993 General Plan buildout scenarios, the Likely Buildout Scenario and the Full Buildout Scenario. As described in Section 3.13.2 and shown in Table 3.13-8, the City would not have sufficient water supplies available to meet demands during all scenarios. In order to analyze the reliability of the City's water supplies into the future, the City's Safe Yield Committee produced a report that calculated the long-term safe yield of the City's water supplies. The Safe Yield Committee found that the long-term safe yield of the City's water supply is 1,950 acre-feet per year, which consists of 600 acre-feet from the City of Napa contract, a conservative 900 acre-feet from Bell Canyon reservoir, and an average use of 450 acre-feet from groundwater. Over the last eight years, the City's water use was less than the 1,950 acre-feet target, averaging 1,637 acre-feet per year and never getting higher than 1,882 acre-feet in a single year. The Water Supply Plan estimated that 495 acre-feet of metered potable water demand could be saved if water conservation measures were implemented, such as hiring a Water Conservation Coordinator, modifying and adopting a water rate structure with a reduced base water rate and increasing high tier rates, and increasing groundwater production reliability and winter pumping

capacity. In order to ensure that the City's future water demand is met by its supplies, the City established a water-neutral policy, which requires all new development to completely offset its water use. With the implementation of this water-neutral policy and other water conservation measures in the City, the City has determined that future water demand is not expected to exceed the 1,950 acre-feet annual use policy limit set by the Safe Yield Committee (City of St. Helena 2011). As discussed in Impact 3.13-2, the Proposed Project would comply with the City's water-neutral policy by completing offsetting its water use from the City through the use of water conservation measures and the on-site well for landscape irrigation. Additionally, future development in the City would be required to pay for public improvements related to water projects. The Proposed Project applicant would pay these fees. Because Project impacts on a project specific level would be fully offset and future projects would also be required to fully offset their impacts, there would be no incremental cumulatively significant impacts to water supply. Therefore, the Proposed Project would not contribute to a significant cumulative impact to future water supplies and infrastructure within the City, and impacts would not be considerable resulting in a **less-than-significant cumulative contribution**.

Wastewater

As discussed previously, the City's Public Works Department provides wastewater collection and treatment services to the City, and wastewater is treated at the City's WWTP. The Proposed Project would increase wastewater generation in the City by producing approximately 0.018 MGD at buildout. The WWTP currently has a permitted dry weather treatment capacity of 0.5 MGD and a permitted wet flow capacity of 2.8 MGD. Approximately 0.384 MGD of wastewater was treated on average in 2015. The 2015 Facilities Evaluation for the WWTP concluded that the total WWTP capacity was sufficient when operated under design conditions. The 2015 Facilities Evaluation indicated that as the service area population was growing only slightly and per capita wastewater flows are declining due to conservation measures, the existing WWTP capacity is sufficient in the short-term. However, the report concluded that the capacity of the WWTP would need to be increased to 0.65 MGD by 2030 (City of St. Helena 2016). Therefore, expansion of the WWTP may be necessary to accommodate future wastewater treatment demands. All future projects in the City that would be required to pay for public improvements to the City's sewer system, including the WWTP. In the case that expansion occurs, potential environmental impacts may include ground disturbance impacts, noise impacts, water and air quality impacts and impacts to cultural and natural resources. Any impacts tied to the WWTP's daily operation would not differ substantially from current operational conditions. The WWTP would still be required to follow applicable state, federal, and local water quality regulations. This includes standards set forth by the RWQCB, designed to ensure water quality impacts and impacts to aquatic resources remain minimal. Additionally, future development in the City would be required to pay for public improvements related to water projects. The Proposed Project applicant would contribute a minimal portion of the WWTP's current wastewater treatment capacity and would pay public improvement fees. The

Proposed Project would not contribute to a significant cumulative impact to future water supplies and infrastructure within the City, and impacts would not be considerable resulting in a **less-than-significant cumulative contribution.**

Stormwater

The Proposed Project would connect to the City's existing storm drain infrastructure and would discharge stormwater into the existing Starr Avenue storm drain at several different locations. The rest of the Project site would drain to the northeast via gutter flow and storm drain pipes and discharge into the City's existing detention basin. The detention basin is designed to accept flows associated with future development within the City and has been sized to accommodate runoff resulting from development of the Project site (see Section 3.9 Hydrology for additional information on drainage).

The Proposed Project's contribution of stormwater would not contribute to a cumulatively considerable impact on stormwater and drainage facilities within the City. Therefore, the Proposed Project's contribution would not be considerable resulting in a **less-than-significant cumulative contribution**.

Solid Waste

The Proposed Project, along with other future development would be served by the Clover Flat Landfill for solid waste sorting and disposal and be served by UVD for solid waste collection and disposal. UVD provides weekly residential and commercial refuse and recycling pickup and disposal throughout upper Napa County. As of 2016, approximately 69% of collected waste was diverted from landfills by UVD (City of St. Helena 2018). The 2019 General Plan EIR determined that future development of the City through 2040 would contribute to the total capacity of the Clover Flat Landfill resulting in a significant cumulative impact on the landfill.

The Clover Flat Landfill has enough capacity to remain open until 2047. As described under Impact 3.13-4, the Proposed Project would generate approximately 0.55 tons per day during the 6-year construction period, which is less than 0.1% of the landfill's average unused daily capacity, and 0.225 tons per day of solid waste during operation, which is 0.04% of the average unused daily capacity of the Clover Flat Landfill. This would not result in a substantial reduction of the landfill's capacity or lifetime. In combination with other anticipated projects served by the landfill, these increases would be a very minimal input to the cumulative contribution to solid waste facilities. The Proposed Project would also comply with all applicable local, state, and federal solid waste regulations to minimize the contribution of solid waste to the landfill. Due to the small amount of solid waste anticipated to be generated by the Proposed Project, the Proposed Project's contribution to the cumulative impact would not be considerable resulting in a **less-than-significant cumulative contribution.**

Mitigation Measures

None required.

3.13.6 References

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3.14 TRANSPORTATION AND CIRCULATION

3.14.1 Introduction

The transportation and circulation section discusses existing and buildout transportation and circulation conditions associated with implementation of the proposed Hunter Subdivision Project (Proposed Project). The analysis includes consideration of vehicle-miles traveled (VMT), potential impacts to transit, bicycle, and pedestrians due to conflicts with existing plans or policies, hazards due to a design feature, and inadequate emergency access. In addition, an evaluation of construction impacts is also included.

Comments received in response to the Notice of Preparation included concerns regarding an increase in neighborhood traffic and the potential for traffic to use the Project site to avoid Main Street, potential lack of parking supply, safety issues for pedestrians and bicyclists, intersection improvements, potential road closures and impacts to emergency access due to the wine train passing through the City, and potential traffic impacts due to the limitations posed by the Pope Street bridge. In December 2018, the California Environmental Quality Act (CEQA) Guidelines were updated to remove evaluation of the delay that vehicles experience at intersections and on roadway segments, which is often measured using a level of service (LOS) metric. Therefore, the operational aspects of the Proposed Project that contribute to delay and congestion on local roadways is no longer considered an environmental impact under CEQA. These concerns are discussed in the Proposed Project's Traffic Impact Study (TIS) in relation to consistency with General Plan policies (see Appendix K). A copy of the Notice of Preparation and comments received is included in Appendix A.

The transportation analysis below uses the VMT metric to assess transportation impacts, per CEQA Section 15064.3(b). The TIS includes a LOS analysis for General Plan consistency and is included in Appendix K. Other sources cited are included under Section 3.14.6, References.

3.14.2 Environmental Setting

Existing environmental settings relevant to transportation and circulation are described below. These include descriptions of the roadway network, pedestrian, bicycle, and transit networks. Figure 3.14-1 illustrates the roadway system near the Proposed Project study area. Figure 3.14-2 illustrates the General Plan Roadway System for the City of St. Helena (City).

Roadway System

Characteristics of the existing street system are described below. Regional access to the Project site is provided by Main Street (SR 29), which has connections to State Route (SR 128) to/from the east, Interstate 80 (I-80) to/from the south, and Spring Mountain Road to/from the west. The Project site is located without access to roadways; however, Adams Street and Starr

Avenue would be extended to service the site. Primary access to the Project site would be provided via the eastern extension of Adams Street as well as the northern extension of Starr Avenue. Street classification data is derived from the Circulation Element of the St. Helena 2019 General Plan[1] (City of St. Helena 2019). As shown on Figure 3.14-1, the primary access points to the Project site is provided via Adams Street or Starr Avenue. The existing traffic controls and geometrics at the study area intersections are shown in Figure 3.14-2.

Main Street (SR 29) is generally a two-lane, undivided regional collector that runs north-south within the study area. There is parallel parking on both sides of the street, and two-way-left-turn-lanes between Dowdell Lane and Madrona Avenue. Main Street serves as the main thoroughfare for the City and the downtown area. The posted speed limit is 25 miles per hour (MPH), and while bicycle lanes are not provided, sidewalks exist on both sides of the street.

Silverado Trail is generally a two-lane, undivided rural throughway that runs north-south within the study area. The road is partially located in Napa County and is one of the roadways used as an alternative route due to traffic congestion along Main Street. The posted speed limit is 50 MPH, and there is Class II bicycle lanes provided, however there is no pedestrian facilities or parking permitted.

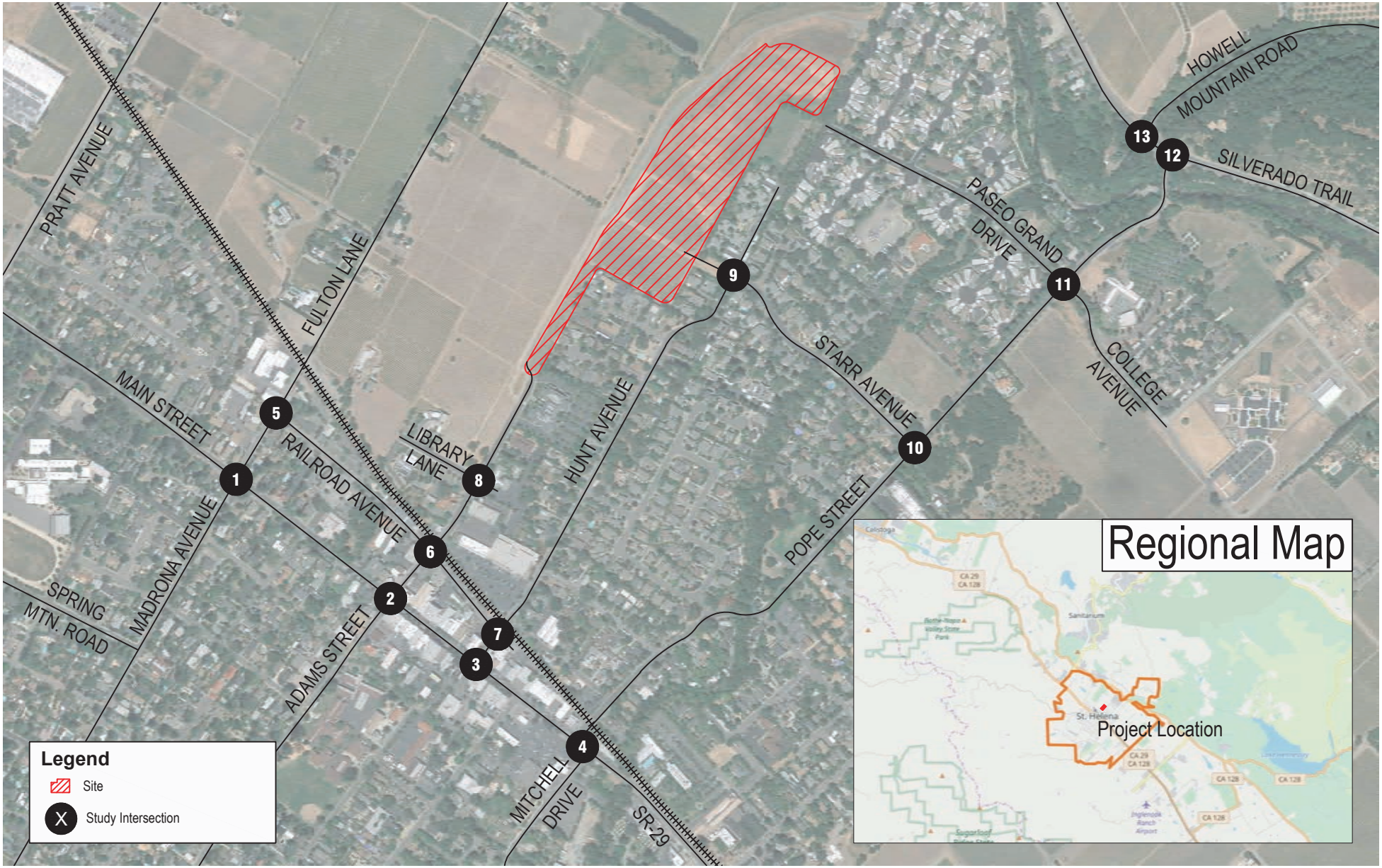
Starr Avenue is a two-lane, undivided residential street that runs north-south within the study area. The roadway dead ends at Hunt Avenue and at Pope Street and serves mainly the residential neighborhood. The posted speed limit is 25 MPH, there are Class II bicycle lanes provided, which are striped and demarcated areas of roadway that clearly separate bicyclists from motorists. Sidewalks are provided on both sides of the street and parking is available along most sections of the road.

Railroad Avenue is a two-lane, undivided downtown/mixed-use street oriented north-south that runs parallel to the railroad tracks within the study area. The roadway dead ends at Fulton Lane and south of Hunt Avenue and serves mainly the industrial and commercial uses in the downtown area. The posted speed limit is 25 MPH, and there are no bicycle lanes provided, however there are sidewalks and parking provided along most sections of the road.

Pope Street is a two-lane, undivided downtown/mixed-use street that runs east-west within the study area. The road bisects the railroad and provides a connection between Main Street and Silverado Trail, via the historic Pope Street Bridge over the Napa River.

Pope Street also serves the residential neighborhoods on the east side of the City. The posted speed limit is 25 MPH, and there are Class II bicycle lanes from Paseo Grand Drive to Church Street and Class III bicycle routes, which are areas of roadway meant to be shared equally between bicyclists and motorists. Sidewalks and parking are provided along some sections of the roadway.

[1] The 2019 St Helena General Plan is also known as the “St Helena General Plan Update 2040,” but is referred to in this EIR by the year of its adoption.



SOURCE: Google Maps,05/2017; Open Street Map, 01/2018

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FIGURE 3.14-1

Project SIte Location and Study Area

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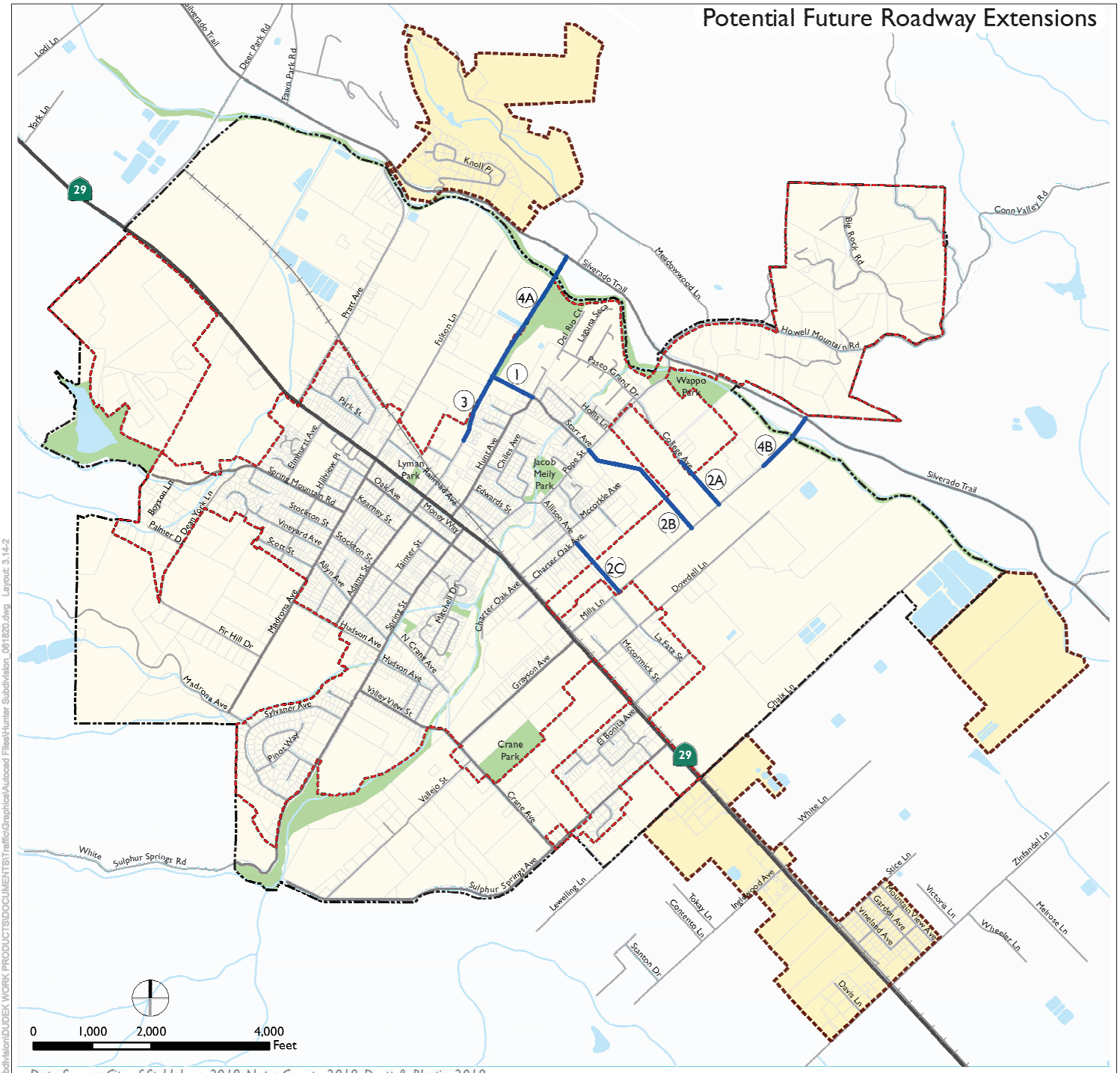

Data Source: City of St. Helena, 2018; Napa County, 2018; Dyett & Bhatia, 2018

Potential Future Roadway

Parks and Open Space

Urban Limit Line

Study Areas

City of St. Helena

(1) Starr Avenue extension north to Adams Street

(2A) (2B) (2C) College Avenue, Starr Avenue or Allison Avenue extension to Mills Lane

(3) Adams Street from its current eastern terminus to Starr Avenue

(4A) (4B) Extension to Silverado Trail, by extending Adams Street or Mills Lane.

SOURCE: St. Helena General Plan Update 2040

FIGURE 3.14-2

General Plan Future Roadway Network

Hunter Subdivision Project

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Adams Street is a two-lane, undivided downtown/mixed-use street that runs east-west within the study area. The roadway is one of the main downtown streets and bisects the railroad tracks to provide access to the residential areas west of Main Street. The posted speed limit is 25 MPH, and there are no bicycle lanes provided, however there are sidewalks on both sides of the street and parking is available along most sections of the road.

Hunt Avenue is a two-lane, undivided residential street that runs east-west within the study area. The road begins at Main Street and bisects the railroad tracks to provide access to the residential areas west of Main Street to where the road dead ends. The posted speed limit is 25 MPH, and there are Class III bicycle facilities provided, however sidewalks and parking are limited along sections of the street.

Fulton Lane/Madrona Avenue is a two-lane, open space/rural street that runs east-west within the study area. The roadway provides access to residential neighborhoods and to Spring Mountain Road. Parking is provided on most sections of the roadway, except for east of the railroad tracks along Fulton Lane. The posted speed limit is 25 MPH, and while bicycle lanes are not provided, sidewalks exist on both sides of the street

Howell Mountain Road is a two-lane, open space/rural street that runs east-west within the study area. The roadway provides a connection to Silverado Trail and a connection to wineries and residences east of the City limits. The posted speed limit is 35 MPH, and no bicycle, parking or pedestrian facilities are available.

Pedestrian Facilities

The Napa Countywide Pedestrian Plan, released August 2016, provides an inventory of existing and proposed pedestrian facilities in the City. More recently, the St. Helena 2019 General Plan also provides a detailed map of existing facilities, including an inventory of curbs, and areas that are missing adequate pedestrian facilities. The pedestrian infrastructure within the study area depends largely on the types of land uses, as agricultural or open space uses generally lack pedestrian amenities, as seen in segments of Adams Street near the edge of the Project site boundary. Around the perimeter of developed land along Starr Avenue and Hunt Avenue, the study area generally contains sidewalks, lighting, landscaping, signage, and Americans with Disabilities Act (ADA)-compliant curb ramps. Railroad crossings are generally in good condition to allow safe crossings for pedestrians. Near the Project site, Adams Street and Starr Avenue would be extended to provide vehicle, bicycle and pedestrian access to the site. Sidewalks would be provided along both sides of the street allowing safe pedestrian access to the site. The Proposed Project would facilitate accessibility to the downtown St. Helena corridor by way of existing sidewalks that would provide access to several neighborhood services such as Main Street, retail and grocery stores, and the St. Helena Public Library. F**i**gure 3.14-3 is from the St.

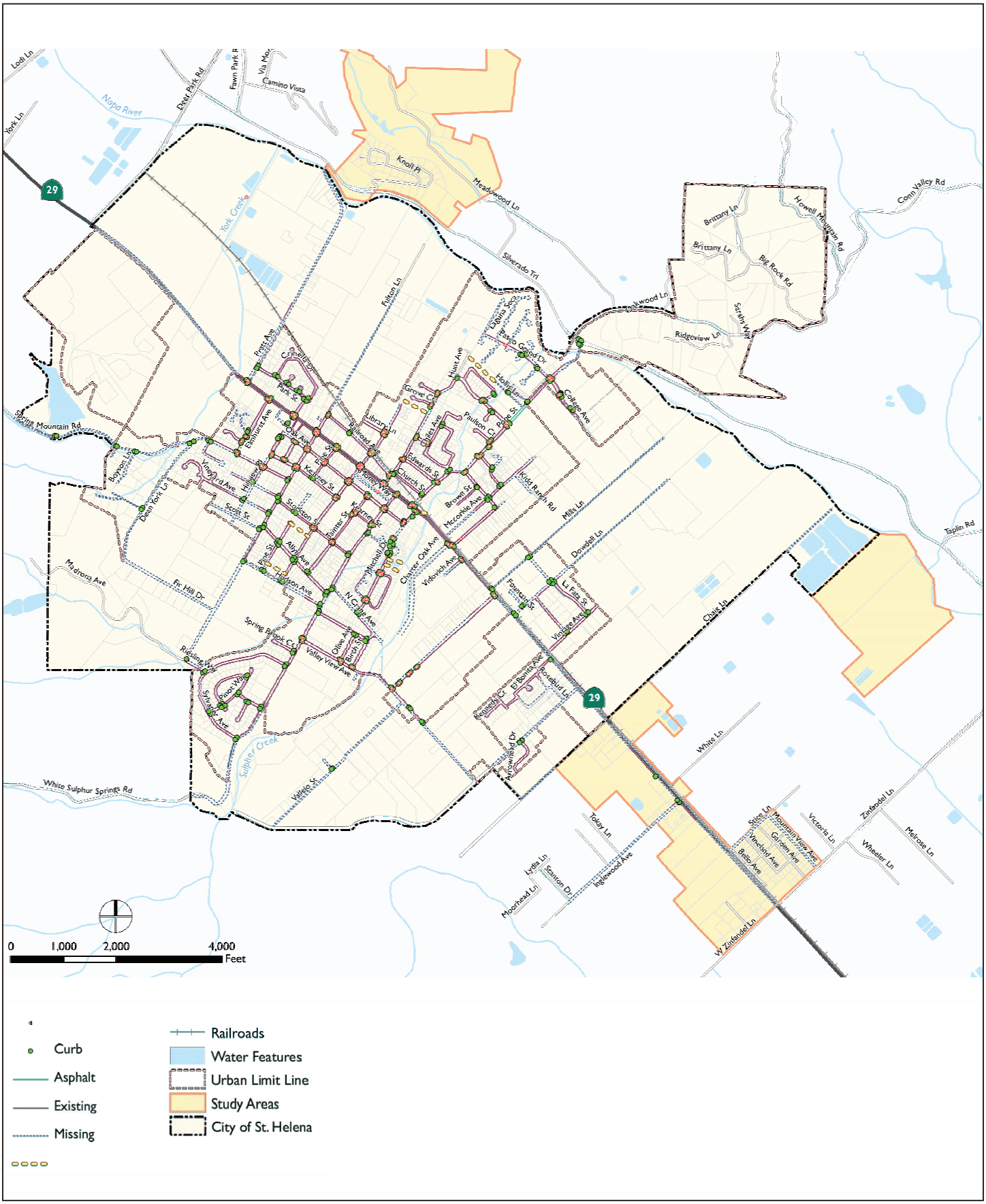
Helena 2019 General Plan and illustrates the Existing Pedestrian Facilities in the vicinity of the Proposed Project.

Bicycle Facilities

Class I bikeways, also known as bike paths or shared-use paths, are facilities with an exclusive right-of-way for bicyclists and pedestrians, separated from roadways. The Proposed Project is not proposing any Class I bike paths. Class II bicycle lanes, which are striped and demarcated areas of a roadway that separate bicyclists from motorists, are available along the entirety of Starr Avenue and Silverado Trail and the majority of Pope Street from Railroad Avenue to Paseo Grand Drive-College Avenue. Class III bicycle routes are shared roadways where vehicles and bicyclists equally share the road, but do not contain a striped bike lane. Class III bicycle routes are provided along Hunt Avenue and portions of Pope Street, east of Railroad Avenue and west of Paseo Grand Drive-College Avenue, towards the approach to the Pope Street Bridge. Along the Proposed Project access, Starr Avenue connects the site to the larger City bicycle network via Pope Street or Hunt Avenue. The Napa Countywide Bicycle Plan presents a 25-year vision for building a complete bicycling system for the community. It provides goals, objectives and policies to guide the ongoing evolution of that system. Several improvements were identified such as Class III bicycle routes along Main Street and Class II bicycle lanes along Adams Street. The Napa Valley Transportation Authority (NVTA) adopted the Countywide Bicycle Plan in October 2019, but the City has not yet adopted the plan. As part of the St. Helena 2019 General Plan, a detailed bicycle network is presented, both for existing facilities, and for the proposed 2040 bicycle facility network. Figure 3.14-4 illustrates the Proposed Bicycle Network in the vicinity of the Project site, as referenced from the St. Helena 2019 General Plan.

Transit System

The NVTA manages Vine Transit, which provides transit service in the greater Napa County region and most closely serves the Project study area and site. The St. Helena Shuttle, Vine Route 10, and Vine Route 29 all provide differing levels of frequency and connectivity to transit riders within the study area.



SOURCE: City of St. Helena 2019, NVTA 2019, Dyett & Bhatia 2019

FIGURE 3.14-3

Existing Pedestrian Facilities

Hunter Subdivision Project

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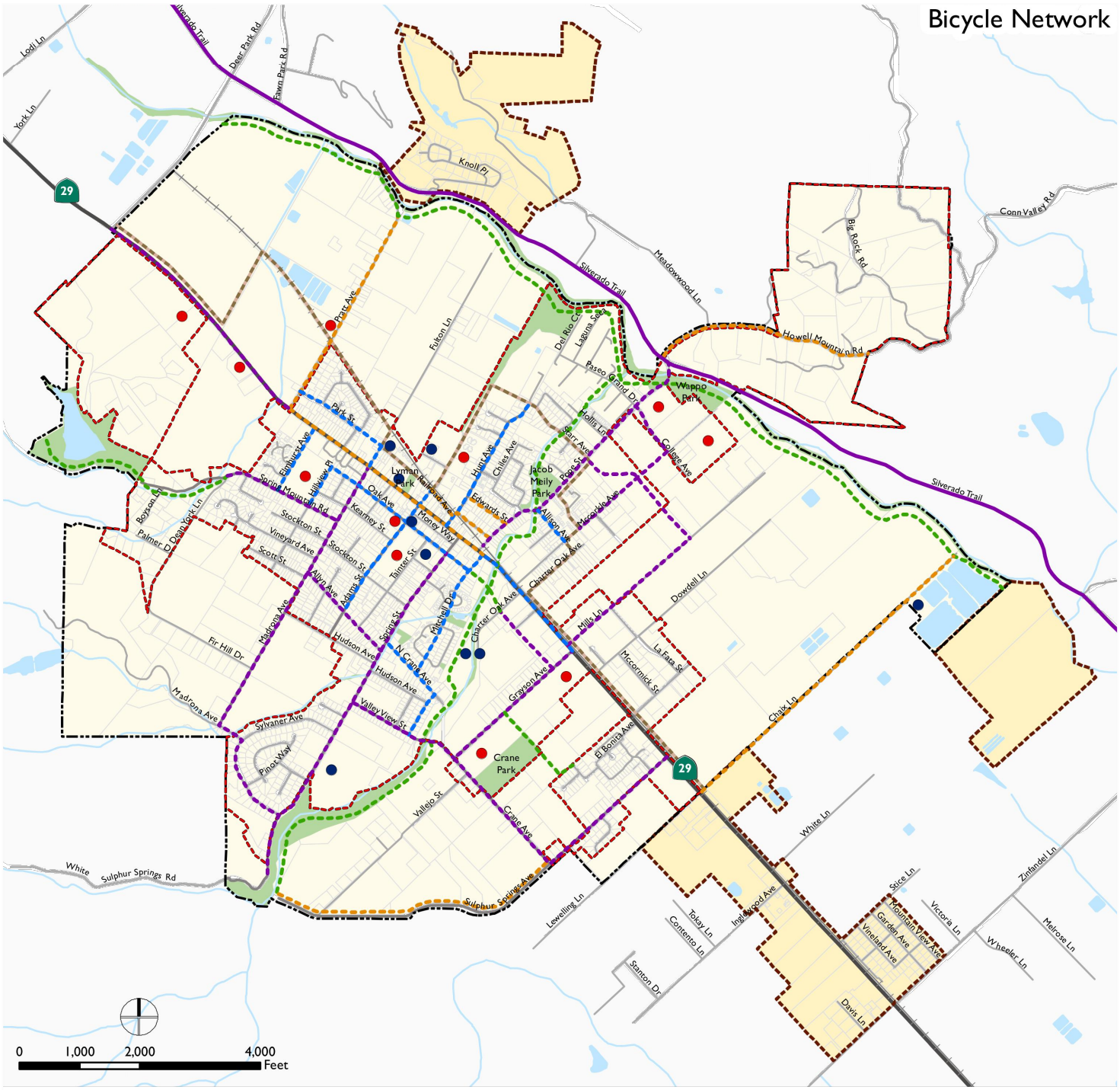

SOURCE: St. Helena General Plan Update 2040

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FIGURE 3.14-4

Proposed Bicycle Network

Hunter Subdivision Project

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The St. Helena Shuttle route operates every weekday for one morning and one afternoon on a fixed route starting at 7:50 a.m. and then again, at 3:15 p.m., circulating throughout the city and stopping directly adjacent to the Project site at the intersection of Starr Avenue/Hunt Avenue. The shuttle provides access to several schools in the city as well as an east-west connection through the city. Outside of the fixed route, the shuttle operates as an on-demand, door-to-door service within much of the city limits Monday to Thursday from 7:45 a.m. to 6:00 p.m. with extended hours Friday until 11:00 p.m. Weekend service is also provided with service on Saturdays from 10:00 a.m. to 11:00 p.m., and on Sundays from 12:00 p.m. to 7:00 p.m. Service is not provided on major holidays.

Vine Route 10 is a regional transit route that connects the cities of Calistoga and Napa, with stops within the study area along Main Street at Adams Street and at Pope Street/Mitchell Drive. Weekday service generally occurs every 45 minutes starting at 6:15 a.m. and ending at 10:45 p.m. Weekend service is provided every hour and is truncated during the morning and night periods. Service is not provided on weekends or major holidays.

Vine Route 29 connects Calistoga southward towards the greater Napa County residential core, connecting to the Vallejo Ferry and finally the El Cerrito BART station. The nearest stop within the study area is the St. Helena Post Office located on Main Street. Service is primarily provided twice during the morning and afternoon periods starting at 5:22 a.m. and ending at 6:35 p.m. Service is not provided on weekends or major holidays.

The Napa Valley Wine Train also passes through the city; however, it is mainly used as a tourist attraction and not for commuting purposes. Stops are limited and occur on an irregular basis in the city. The Wine Train's proximity to Main Street can result in increased congestion and vehicle queueing, as well as the potential to impede emergency access across Adams Street and Hunt Avenue. The Wine Train blocks egress and ingress at Adams Street and Hunt Avenue for up to two minutes at a time departing and arriving, therefore these crossings will be closed or delayed for a maximum of eight minutes per day. The Wine Train is mandated to keep all grade crossings clear; therefore, the limited speed in the area is what constitutes the delay described above.

Pope Street Bridge

The Pope Street Bridge is a narrow two-lane historic bridge that spans the Napa River and connects the City with Silverado Trail, a regional roadway that provides north-south access through Napa County. Silverado Trail also serves as an alternative route to Main Street/SR 29. The Pope Street Bridge is largely unimproved, and is constructed of stone, creating narrow lanes and reduced speed for motorists. This also creates a situation where bicyclists share the road with vehicles, creating potential areas of conflict. Operationally, the Pope Street Bridge allows for one lane of westbound traffic, creating conflicts between vehicles turning onto Pope Street versus vehicles turning onto Silverado Trail. Collisions between these conflict points were

analyzed in depth in the following sections. Additionally, emergency access can be impeded due to congestion along the bridge, creating difficulty for services to be provided to areas along Silverado Trail.

3.14.3 Regulatory Setting

Federal Regulations

There are no federal traffic and circulation regulations, plans, and policies that are applicable to the Proposed Project.

State Regulations

Senate Bill 743

On September 27, 2013, Senate Bill (SB) 743 was signed into law, which creates a process to change the way that transportation impacts are analyzed under CEQA. SB 743 required the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts from LOS and automobile delay to one that promotes the reduction of greenhouse gas (GHG) emissions, the development of multimodal transportation networks, and a diversity of land uses for transit priority areas. Under the new transportation guidelines, LOS, or vehicle delay, is no longer considered an environmental impact under CEQA and the Guidelines have been updated to include VMT as the most appropriate measure of transportation impacts. The updates to the CEQA Guidelines required under SB 743 were approved on December 28, 2018. The OPR's regulatory text indicates that a public agency may immediately commence implementation of the new transportation impact guidelines, and that the guidelines were required to be implemented statewide on July 1, 2020. The City has not yet adopted VMT specific guidelines and significance criteria for transportation impact analysis. However, the City, along with other cities in the Napa County, are currently following OPR's CEQA VMT requirements. Therefore, this assessment uses the statewide guidelines for the Proposed Project's VMT analysis.

California Department of Transportation

As the owner and operator of the State Highway System, the State of California Department of Transportation (Caltrans) implements established state planning priorities in all functional plans, programs, and activities. Caltrans has the responsibility to coordinate and consult with local jurisdictions when proposed local land use planning and development may impact state highway facilities. Pursuant to Section 21092.4 of the Public Resources Code (PRC), for projects of statewide, regional, or area-wide significance, the lead agency shall consult with transportation

planning agencies and public agencies that have transportation facilities which could be affected by a project.

In anticipation of SB 743 implementation, Caltrans released the Draft Transportation Impact Study Guide (TISG) in February 2020, replacing the 2002 Guide for the Preparation of Traffic Impact Studies. Per the 2020 TISG, consistent with SB 743, Caltrans' primary review focus is now VMT, replacing LOS as the metric used to evaluate traffic impacts in CEQA transportation analyses. Caltrans recommends use of OPR's recommended thresholds for land use projects and recommends following the guidance on methods of VMT assessment found in OPR's Technical Advisory (OPR 2018).

In addition to VMT, the 2020 TISG states that it may request a targeted operational and safety analysis to address a specific geometric or operational issue related to the State Highway System and connections with the State Highway System. Caltrans also notes that a future update of the TISG will include the basis for requesting transportation impact analysis not based on VMT and define elements to be included in non-VMT analysis. At the time of this study, this update has not been released; however, the TIS provided in Appendix K includes LOS analysis of three intersections along Main Street (SR 29) near the Project site.

Regional Regulations

Plan Bay Area 2040

Plan Bay Area 2040 (Plan), adopted in 2017, is a state-mandated, integrated long-range transportation and land use plan. The region adopted its previous plan — Plan Bay Area — in July 2013. As the Bay Area's first regional transportation plan to include a Sustainable Communities Strategy (SCS) as required by SB 375, the original Plan Bay Area (2013) charted a course for reducing per-capita greenhouse gas emissions through the promotion of more compact, mixed-use residential and commercial neighborhoods near transit. The Plan projects household and employment growth in the Bay Area over the next 24 years, provides a roadmap for accommodating expected growth, and connects it all to a transportation investment strategy that strives to move the Bay Area toward key regional goals for the environment, economy and social equity.

Applicable goals from the Plan include:

> **Goal 8:** Reduce adverse health impacts associated with air quality, road safety, and physical inactivity by 10%.
>
> **Goal 8:** Increase by 20% the share of jobs accessible within 30 minutes by auto or within 45 minutes by transit in congested conditions.

Goal 11: Increase non-auto mode share by 10%.

Goal 13: Reduce per-rider transit delay due to aged infrastructure by 100%.

Napa County General Plan

The Napa County General Plan, adopted in June 2008, serves as a broad framework for planning the future of Napa County. The General Plan provides transportation policies aimed at addressing congestion, safety, and accessibility, emphasizing alternatives to the private automobile and limited road improvements. Because the Proposed Project contributes traffic to roadways under the County's jurisdiction, the following policies from the Transportation Element area provided.

Policy CIR-6: The County's roadway improvements should minimize disruption to residential neighborhoods, communities, and agriculture.

Policy CIR-7: Roadway improvements shall be designed to conform to existing landforms and shall include landscaping and/or other treatments to ensure that aesthetics and rural character are preserved.

Policy CIR-13: The County seeks to provide a roadway system that maintains current roadway capacities in most locations and is both safe and efficient in terms of providing local access. The following list of improvements, illustrated as the County's ultimate road network in Figure CIR-1, has been supported by policy makers within the County and all five incorporated cities/town, and will be implemented over time by the County and other agencies to the extent that improvements continue to enjoy political support and funding becomes available:

- Construct safety and flow improvements to SR 29 between Oakville and St. Helena.
- Develop and implement methods to divert traffic from downtown St. Helena and Calistoga to reduce congestion and improve intra-county traffic flow.
- Install safety improvements on rural roads and highways throughout the county including but not limited to new signals, bike lanes, bikeways, shoulder widening, softening sharp curves, etc.
- Consider roundabouts as effective alternatives to stop signals or signal controlled intersections, where appropriate.

Policy CIR-17: Where traffic signals are within ¼ mile of each other, work with the agencies who have jurisdiction to synchronize the signals in order to reduce delay, improve traffic flow, and reduce energy consumption and air pollutant emissions.

Policy CIR-21: The County shall support provision of alternate (parallel) routes for local residents to avoid traffic congestion on major thoroughfares.

Objective CIR-3: The County shall work with Caltrans and other agencies to construct or designate approximately 40 miles of additional bicycle lanes in Napa County by 2030, consistent with priorities identified in the Napa Countywide Bicycle Master Plan.

Policy CIR-36: The needs of pedestrians and bicyclists shall be routinely considered and, where possible, accommodated in all roadway construction and renovation projects.

Napa Valley Transportation Authority: Vision 2040 Moving Napa Forward

The Vision 2040: Moving Napa Forward is a long-range transportation plan for Napa County, adopted in 2015. The plan establishes policy and spending priorities for the County's transportation system over the next 25 years (through the year 2040). Objectives applicable to the Proposed Project are provided.

Selected Objectives:

2.1: Design roadways and other transportation facilities to enhance coexistence of users of all modes.

2.5: Prioritize projects that expand travel options for cyclists and pedestrians as well as those projects that improve operation and safety for vehicles, pedestrians, and cyclists.

5.5: Prioritize projects that expand travel options for cyclists and pedestrians as well as those projects that improve operation and safety for vehicles, pedestrians, and cyclists.

Napa Countywide Bicycle Plan

The Napa Countywide Bicycle Plan presents a 25-year vision for building a complete bicycling system for the community. It provides goals, objectives and policies to guide the ongoing evolution of that system. The current plan was adopted in 2012 and a draft plan was released for review in February 2019. The NVTA adopted the Countywide Bicycle Plan in October 2019, but the City has not yet adopted the plan although the City did participate in the development of the plan.

Objective 2.0 Design:

Policy 2.1: Utilize Chapter 1000, "Bikeways Planning and Design," of the California Highway Design Manual, the California Manual of Uniform Traffic Control Devices, and the American Association of State Highway Transportation Officials (AASHTO) Guide for

the Development of Bicycle Facilities, as well as evolving “best practices” for the development of bicycle facilities.

Policy 2.2: Consistent with Assembly Bill 1581 (Fuller) and Caltrans Policy Directive 09-06, assure that all approaches to signalized intersections include bicycle detection devices that are operational and properly marked.

Policy 2.3: Provide consistent enhanced crossing features at uncontrolled intersections with Class I trails.

Policy 2.4: Where standard Class II bike lanes are infeasible under current conditions, consider innovative approaches to safely accommodate bicycles. (Approaches may include but are not limited to: striped edge lines, signs, shared lane markings, “road diets,” eliminating parking, etc.)

Policy 2.5: Install way-finding signage, markers, and stencils on off-street paths, on-street bikeways, local Class III routes, and State Routes to improve way finding for bicyclists, assist emergency personnel, and heighten motorists’ awareness.

Policy 2.6: Improve safety and access for bicyclists at all at-grade railroad crossings by providing appropriate enhancements such as proper track structure, safe crossing angles, track fillers, lighting, and adequate warning and guidance information among other features.

Objective 5.0 Safety and Security:

Policy 5.2: Focus on improving safety at intersections by using or installing routine pedestrian signal cycles; pedestrian push buttons; high-visibility crosswalk markings; appropriate warning and directional signs; and reassurance or directional markings for bicyclists such as shared lane markings, skip lines, etc.; and through the use of focused education.

Policy 5.3: Focus on improving safety at railroad crossings by providing safe track crossing angles for bicyclists, using concrete panels and flange way fillers to avoid surface irregularities, and through the use of quad crossing gates and warning signs.

Objective 9.0 Maintenance:

Policy 9.5: Maintain geometry, pavement surface condition, debris removal, markings, and signage on Class II and Class III bikeways to the same standards and condition as the adjacent motor vehicle lanes.

Local Regulations

City of St. Helena 1993 General Plan

The Transportation Element of the St. Helena 1993 General Plan provides guiding policies regarding transportation that are applicable to the Proposed Project, including the following:

General Plan Street System

Policy 5.3.2: Add the following streets to the existing system:

- Adams Street from its current eastern terminus to Silverado Trail
- McCorkle Avenue from Mariposa Lane to the extension of Starr Avenue
- Oak Avenue from Mitchell Drive to Grayson Avenue
- Library Lane from its current terminus to Fulton Lane
- An unnamed new street located east of Edwards Street connecting Hunt Avenue and Pope Street
- Starr Avenue from the extension of Adams Street to the Urban Limit Line

Policy 5.3.3: Preserve rights-of-way for future collector streets within the planning area of the City as follows:

- Starr Avenue from Pratt Avenue to Adams Street and from the Urban Limit Line to Dowdell Lane
- Mills Lane from SR 29 to Starr Avenue, including a potential realignment with Grayson Avenue at SR 29
- Oak Avenue from Vidovich Avenue to Grayson Avenue

The City recognizes that development may or may not proceed along the lines envisioned in this plan, and that some areas not currently identified for potential development may in fact precede those that are so designated. The intent of the right-of-way preservation designation is to clearly define the interest of the City in maintaining the option for extending its collector street system into these areas. Special setback areas shall be established along collector streets to allow for future widening.

Roadway Improvement Standards

Policy 5.5.2: Local streets in newly developing areas should be laid out in a manner consistent with the grid system currently in place in the older portions of St Helena and

in conformance with adopted City standards. Care should be taken to insure that these grids contain enough discontinuity to discourage their use by non-local traffic. Local streets should have a paved width of 36 feet with a ten-foot wide area adjacent to curb for sidewalk and landscaping.

Pedestrian Routes and Bikeways

Policy 5.8.1: All new development on collector streets shall provide sidewalks or walkways to be located with the City's right-of-way for the collector street. Further, unless exempted or deferred by the City Council, all residential developments shall provide sidewalks on all local streets within the development

It is a goal of the City that it continues to remain at a size where the majority of development is within a 10 minute walk of downtown. Sidewalks or walkways will reinforce the pedestrian orientation of the City.

Improvements and Phasing

Policy 5.10.1: All new collector streets shown in the Circulation Diagram shall be constructed as development occurs along the proposed streets. The exception to this policy is that the City Council may require additional construction to reinforce system continuity.

Policy 5.10.2: The City desires that the Adams Street extension to Silverado Trail be completed in an expeditious manner; the City will work with potential developers to acquire the needed combination of public and private financing required to implement this project.

Policy 5.10.3: The City shall collect Traffic Mitigation Fees to assist in financing improvements to the citywide circulation system.

St. Helena 2019 General Plan ("General Plan Update 2040")

The Circulation Element of the St. Helena 2019 General Plan provides the framework for a comprehensive and multimodal transportation network along with standards and guiding principles for implementation of transportation improvements. While the City's 1993 General Plan would still apply to the Proposed Project because this General Plan was in effect when the Proposed Project application was deemed complete in September 2011, the following objectives and policies from the City's 2019 General Plan are provided for informational purposes.

Goals

(b) Provide a complete bicycle and pedestrian network between residential areas, downtown, recreational open space areas, and other major activity centers identified by the City.

(h) Provide a safe, efficient, and well-maintained circulation system that supports safe and efficient travel for all modes and users.

Relevant policies and implementing actions include:

Balanced and Multimodal System

Policy CR1.1: Promote a connected street and bicycle and pedestrian network within the city to provide better internal automobile, bicycle, and pedestrian connections for residents.

- **Action CR1.C**: Evaluate the following new connections to promote increased bicycle, pedestrian, and non-automobile-based transportation, consistent with the requirement for the preparation of a "Special Study" as described in the Circulation Element. Where feasible, preserve existing rights-of-way.
    - Starr Avenue extension north to Adams Street
    - Consider three options for a connection to Mills Lane: a) Starr Avenue extension to Mills Lane; b) College Avenue extension to Mills Lane; or c) Allison Avenue extension to Mills Lane
    - Adams Street from its current eastern terminus to Starr Avenue
    - Consider two options to connect downtown St. Helena to Silverado Trail: a) Adams Street extension to Silverado Trail; b) Mills Lane extension to Silverado Trail

Policy CR1.4: Develop and use, in addition to intersection level of service standards, performance measures that consider all road users to determine transportation impacts of new development.

Policy CR1.5: Avoid mitigation measures that negatively impact the walking and bicycling environment and encourage driving.

Policy CR1.11: Establish a multimodal transportation impact fee program as part of the City's existing transportation impact fee, to finance and implement project mitigations that help achieve the City's traffic reduction goals. As part of the multimodal transportation impact fee program, require new development to analyze travel demand and finance and construct all required off-site circulation improvements, including

proposed road extensions, necessary to mitigate impacts to reduce the severity of cumulative transportation impacts to all modes of travel.

Comprehensive Pedestrian and Bicycle Network

Policy CR2.2: Promote walking and bicycling as safe and convenient modes of transportation.

Policy CR2.4: Preserve and enhance pedestrian connectivity and safety throughout St. Helena.

Policy CR2.6: Encourage walking and bicycling trips to St. Helena schools.

Sustainable Mobility Practices

Policy CR3.2: Support the implementation of NVTA goals to reduce/restrain growth of automobile vehicle miles traveled (VMT).

Policy CR3.3: Shift travel from single-occupancy vehicles to other modes so that by 2040, 45 percent of work trips by St. Helena residents and workers are by carpool, transit, walking or bicycling.

Safe and Well-Maintained Circulation System

Policy CR4.2: Ensure safety on residential neighborhood streets to promote walking and bicycling and preserve neighborhood livability.

Policy CR4.3: Continue efforts to calm traffic and minimize traffic volumes and speeds in residential areas.

Improvements and Phasing

Policy CR6.2: Require concurrent infrastructure development for any new development projects that have impacts on the circulation system, including streets, paths, trails, sidewalks, and public transit.

Policy CR6.3: Consider requiring dedications and mitigations in addition to traffic mitigation fees for any development that occurs adjacent to proposed streets corridors in order to reinforce circulation system continuity. Traffic mitigation fees are necessary to mitigate existing traffic congestion and congestion caused by new development. Consider revising fee schedules to fund needed vehicular, bike, and pedestrian improvements in order to

> appropriately mitigate impacts. The fee schedule must be based on an established "nexus" between new development and the planned improvements.

The Public Health, Safety, and Noise Element of the 2019 General Plan includes the following policy related to circulation:

> **Policy PS4.6:** Ensure that all streets and roads are adequate in terms of width, turning radius, and grade in order to facilitate access by City firefighting apparatus, and to provide alternative emergency routes of ingress and egress.

City of St. Helena Municipal Code

The City's Municipal Code, Chapter 12, Streets, Sidewalks and Public Places, Chapter 16, Subdivisions and Chapter 17, Zoning, include requirements applicable to the Proposed Project. Section 12.12.050 states that projects are required to prepare a temporary traffic control plan for construction activities, to be approved by the City's traffic engineer. Section 16.32.060 states the requirements for subdivisions in creating adequate circulation and standards to preserve the public health, safety and welfare. Section 17.124.030 provides the minimum number of parking spaces required for residential projects. Section 3.32.100 states the components of the City's traffic mitigation impact fee program and the role the City's impact fee study plays in establishing the costs associated with new development.

Chapter 10.36 defines the City's truck traffic routes that apply to heavy trucks associated with construction activities and chapter 8.24, Noise, sets forth days and times when construction-related noise is allowable and construction activities can occur in the city.

3.14.4 Impacts

Methods of Analysis

This section describes the analysis techniques, assumptions, and results used to identify potential impacts of the Proposed Project on the City's transportation and circulation system. As stated in Chapter 2, Project Description, the Proposed Project is only requesting approval of a Tentative Subdivision Map at this time to subdivide the Project site into 51 single-family lots with 11 of the 51 lots developed with an ADU and a 3.4-acre lot designated for 25 multifamily units. Subsequent discretionary approvals would be required in order to commence site clearing, grading and construction.

Vehicles Miles Traveled

As described in Section 3.14.2, OPR prepared a comprehensive update to the CEQA Guidelines in 2017 that were approved by the California Natural Resources Agency in

December 2018, requiring that lead agencies use VMT for analyzing transportation impacts. CEQA Section 15064.3 of the Guidelines, states compliance will be required beginning July 1, 2020 and that "generally, vehicle miles traveled (VMT) is the most appropriate measure of transportation impacts" and define VMT as "the amount and distance of automobile travel attributable to a project." It should be noted that "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. Heavy-duty truck VMT could be included for modeling convenience and ease of calculation (for example, where models or data provide combined auto and heavy truck VMT). Other relevant considerations may include the effects of a project on transit and non-motorized traveled.

As mentioned above, the City has not adopted methodologies for performing VMT analysis per SB 743. Therefore, the following VMT assessment has been prepared consistent with OPR's December 2018 Technical Advisory (2018), the NVTA regional travel demand model (Solano-Napa Activity Based Model – SNABM), and discussions with City staff.

The following outlines the primary methods used to conduct the VMT analysis:

1. Determine whether the project can be screened out from further VMT analysis and presumed to have a less-than-significant impact by comparing the project features to screening criteria presented in the OPR Technical Advisory.
2. If the project is not screened out, determine the VMT per capita (for residential projects) using the VMT Screening Maps from the SNABM travel demand and forecasting model available at https://arcg.is/1nea4W.
3. Compare the project results to the applicable or most appropriate threshold as directed by the City. For the Proposed Project, the VMT/capita is compared to the Citywide average to determine if the Proposed Project would have a potentially significant impact.

Screening for Land Use Projects

To provide guidance on how to conduct a VMT analysis, OPR released *Updates to Technical Advisory on Evaluating Transportation Impacts in CEQA* (Technical Advisory). The Technical Advisory suggests that agencies may screen out VMT impacts using project size, maps, transit availability, and provision of affordable housing. While OPR's Technical Advisory is not binding on public agencies, CEQA allows lead agencies to "consider thresholds of significance... recommended by other public agencies, provided the decision to adopt those thresholds is supported by substantial evidence" (CEQA Guidelines, Section 15064.7, subd. (c)).

- *Screening Threshold for Small Projects (110 daily trips or less):* Absent substantial evidence indicating that a project would generate a potentially significant level of VMT, or inconsistency with a Sustainable Communities Strategy (SCS) or general plan,

projects that generate or attract fewer than 110 trips per day[2] generally may be assumed to cause a less-than significant transportation impact. Based on Proposed Project's trip generation shown in Table 3.14-1, more than 110 trips per day would be generated; therefore, it would not screen out using the small project criteria.

- *Map Based Screening for Residential and Office Projects*: Residential and office projects that locate in areas with low VMT, and that incorporate similar features (i.e., density, mix of uses, transit accessibility), will tend to exhibit similarly low VMT. Per the Technical Advisory, maps created with VMT data, from a travel survey or a travel demand model, can illustrate areas that are currently below threshold VMT. Because new development in such locations would likely result in a similar level of VMT, such maps can be used to screen out residential and office projects from needing to prepare a detailed VMT analysis. The Proposed Project's VMT per capita would exceed the Citywide average VMT per capita, and therefore the Proposed Project would have a potentially significant impact.
- *Presumption of Less-than-Significant Impact Near Transit Stations*: The Project site is not located within ½ mile of an existing major transit stop or an existing stop along a high-quality transit corridor. Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop[3] or an existing stop along a high quality transit corridor[4] would have a less-than-significant impact on VMT. This presumption would not apply, however, if project-specific or location-specific information indicates that the project would still generate significant levels of VMT. For example, the presumption might not be appropriate if the project:
    - Has a Floor Area Ratio (FAR) of less than 0.75;

---

2 CEQA provides a categorical exemption for existing facilities, including additions to existing structures of up to 10,000 square feet, so long as the project is in an area where public infrastructure is available to allow for maximum planned development and the project is not in an environmentally sensitive area. (CEQA Guidelines, § 15301, subd. (e)(2).) Typical project types for which trip generation increases relatively linearly with building footprint (i.e., general office building, single tenant office building, office park, and business park) generate or attract an additional 110-124 trips per 10,000 square feet. Therefore, absent substantial evidence otherwise, it is reasonable to conclude that the addition of 110 or fewer trips could be considered not to lead to a significant impact.

3 Pub. Resources Code, § 21064.3 ("'Major transit stop' means a site containing an existing rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.").

4 Pub. Resources Code, § 21155 ("For purposes of this section, a high-quality transit corridor means a corridor with fixed route bus service with service intervals no longer than 15 minutes during peak commute hours.").

- Includes more parking for use by residents, customers, or employees of the project than required by the jurisdiction (if the jurisdiction requires the project to supply parking);
- Is inconsistent with the applicable Sustainable Communities Strategy (as determined by the lead agency, with input from the Metropolitan Planning Organization); or
- Replaces affordable residential units with a smaller number of moderate- or high-income residential units.

From review of pre-COVID frequency of transit services provided by Vine Transit Route 10, Vine Route 29 and St. Helena Shuttle near the Project site, the Proposed Project is not located near a major transit stop or high-quality transit corridor. Therefore, the presumption of less-than-significant VMT impact near a transit station would not apply.

- *Presumption of Less-than-Significant Impact for Affordable Residential Development*: The Technical Advisory notes that adding affordable housing to infill locations generally improves jobs-housing match, in turn shortening commutes and reducing VMT.[5,6] In areas where the existing jobs housing match is closer to optimal, low income housing nevertheless generates less VMT than market- rate housing.[7,8] Therefore, a project consisting of a high percentage of affordable housing may be a basis for the lead agency to find a less-than-significant impact on VMT. Evidence supports a presumption of less-than-significant impact for a 100% affordable residential development (or the residential component of a mixed-use development) in infill locations. Furthermore, a project which includes any affordable residential units may factor the effect of the affordability on VMT into the assessment of VMT generated by those units. The Proposed Project includes 25 multifamily units designated to meet affordable housing requirements which would account for 28.73% affordable housing; however, this would not meet the Technical Advisory's recommended screening criteria of 100% affordable housing. Therefore, presumption of a less-than-significant VMT impact for affordable residential development is not applicable.

5 Karner and Benner (2016) The convergence of social equity and environmental sustainability: Jobs housing fit and commute distance ("[P]olicies that advance a more equitable distribution of jobs and housing by linking the affordability of locally available housing with local wage levels are likely to be associated with reduced commuting distances").

6 Karner and Benner (2015) Low-wage jobs-housing fit: identifying locations of affordable housing shortages, available at https://regionalchange.ucdavis.edu/sites/g/files/dgvnsk986/files/inline-files/Urban%20Geography%20benner%20karner.pdf.

7 Chapple et al. (2017) Developing a New Methodology for Analyzing Potential Displacement**,** available at https://www.arb.ca.gov/research/apr/past/13-310.pdf.

8 CAPCOA (2010) Quantifying Greenhouse Gas Mitigation Measures**,** pp. 176-178, available at http://www.aqmd.gov/docs/default-source/ceqa/handbook/capcoa-quantifying-greenhouse-gas-mitigation-measures.pdf.

Therefore, the exceptions listed above are not applicable to the Proposed Project.

As outlined above, the Proposed Project does not meet the screening criteria identified in the Technical Advisory. Therefore, an assessment of the Proposed Project's VMT impact under base year conditions has been provided using available significance thresholds and guidance from OPR and the Technical Advisory.

Methodology for VMT Estimation

For residential projects, such as the Proposed Project, the Technical Advisory indicates that "tour- and trip-based approaches offer the best methods for assessing VMT from residential/office projects and for comparing those assessment to VMT thresholds." Tour-based assessments are recommended, when available, as they typically capture a more comprehensive representation of travel behavior; however, when tour-based tools or data are not available, the Technical Advisory indicates that "…trip-based assessment of VMT can serve as a reasonable proxy."

The recent update to the NSABM model is an activity-based model (i.e., tour-based) that provides VMT estimates for traffic analysis zones (TAZ) as well as the VMT average for cities within the Napa County. Therefore, the average VMT/capita at the TAZ level within which the Proposed Project is located was used for comparing the VMT thresholds for the City. The VMT maps available for Napa County from NSABM were used to determine the VMT/capita in the TAZ in which the Proposed Project is located.[9]

Project Trip Generation

Trip generation estimates for the Proposed Project were calculated based upon trip rates provided in the Institute of Transportation Engineers' Trip Generation, 10th Edition (ITE 2017). Average trip generation rates represent weighted averages from studies conducted throughout the United States and Canada since 1980 that surveyed the identified use.[10] For example, "single-family detached housing," which has the highest trip generation rate per dwelling unit of all residential uses, specifically identifies all detached homes on individual lots, with a typical site being a suburban subdivision.

Trip rates for accessory dwelling units (ADUs) are not widely available, and if they are, the rates are unreliable due to the limited (low) number of studies provided. Therefore, in order to

[9] The VMT map is available on following link: https://www.arcgis.com/home/webmap/viewer.html?webmap=765f96cb16d34c8486eaf995012e14ec&extent=-122.554,37.9494,-121.5659,38.6993

[10] Single-Family and multifamily land uses are based on surveys and weighted averages. Rates are not based on a specified number of bedrooms or vehicles per household.

conservatively estimate traffic generated from those uses, the ITE multifamily housing rate was used for the ADU rate. Since the ITE multifamily housing rate was used for the proposed ADUs, the ITE single family detached housing rate was used for the proposed multifamily units which assumes that these units may generate more traffic than the proposed ADUs. This would provide for conservative daily and peak hour trip generation estimates of the Proposed Project. The calculation of Proposed Project trip generation estimates for weekdays and Saturday are shown in Tables 3.14-1 and 3.14-2, respectively.

As shown in Table 3.14-1, during a weekday the Proposed Project would generate 798 daily trips, 62 AM peak hour trips (16 inbound and 46 outbound), and 82 PM peak hour trips (52 inbound and 30 outbound).

Table 3.14-1
Weekday Proposed Project Trip Generation

Trip Generation Rates[1]								
			AM Peak Hour			*PM Peak Hour*		
Land Use	*Daily Trip Rate*	*Unit*	*% In*	*% Out*	*Total*	*% In*	*% Out*	*Total*
Single-Family Detached Housing (ITE Code 210)	9.44	DU	0.19	0.56	0.74	0.62	0.37	0.99
Multifamily Housing (Low-Rise) (ITE Code 220)	7.32	DU	0.11	0.35	0.46	0.35	0.21	0.56

Trip Generation									
				AM Peak Hour			*PM Peak Hour*		
Land Use	*Total No. of Units*	*Unit*	*Daily*	*In*	*Out*	*Total*	*In*	*Out*	*Total*
Single-Family Detached Housing	51	DU	481	10	28	38	32	19	51
Accessory Dwelling Units	11	DU	81	1	4	5	4	2	6
Multifamily Housing[2]	25	DU	236	5	14	19	16	9	25
Total Trip Generation			**798**	**16**	**46**	**62**	**52**	**30**	**82**

Notes:
1 Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
2 Reflects use of a single-family home to provide a conservative estimate.
Source: ITE 2017; Dudek 2020.

As shown in Table 3.14-2, during a Saturday the Proposed Project would generate 815 daily trips, and 80 peak hour trips (40 inbound and 40 outbound).

Table 3.14-2
Saturday Proposed Project Trip Generation

Trip Generation Rates[1]					
			Peak Hour		
Land Use	Saturday Trip Rate	Unit	% In	% Out	Total
Single-Family Detached Housing (ITE Code 210)	9.54	DU	0.47	0.47	0.93
Multifamily Housing (Low-Rise) (ITE Code 220)	8.14	DU	0.35	0.35	0.70

Trip Generation						
				Peak Hour		
Land Use	Total No. of Units	Unit	Daily	In	Out	Total
Single-Family Detached Housing	51	DU	487	24	24	48
Accessory Dwelling Units	11	DU	90	4	4	8
Multifamily Housing[2]	25	DU	239	12	12	24
Total Trip Generation			**815**	**40**	**40**	**80**

Notes:
1 Trip rates from the Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
2 Reflects use of a single-family home to provide a conservative estimate.
Source: ITE 2017; Dudek 2020.

Proposed Project Trip Distribution and Assignment

Proposed Project trips were distributed to the study area intersections using the existing travel patterns and logical commute routes for Proposed-Project-related traffic. Project trips were assigned to the study area intersections by applying the Proposed Project trip generation estimates to the trip distribution percentages at each study area intersection. Single-family units and ADUs were distributed and assigned together, as shown on Figure 3.14-5, while multifamily housing was distributed and assigned separately, as shown on Figure 3.14-6. The total Proposed Project trip assignment is shown in Figure 3.14-7. The Proposed Project's trip distribution and assignment for Saturday includes all uses combined and is shown on Figure 3.14-8.

Planned Pedestrian and Bicycle Facility Improvements

The pedestrian infrastructure within the study area would remain largely unaffected by the Proposed Project. As Starr Avenue is extended northward and Adams Street extended eastward, additional sidewalks connecting the Proposed Project to the surrounding area would provide pedestrian access to the surrounding residential community. Additionally, the NVTA has plans for the Vine Trail, a network of bicycle and pedestrian paths that will eventually connect all Napa County communities, with construction in the City anticipated to begin as early as 2021. The Vine Trail, as tentatively proposed, would proceed through sections of the Project site by way of Adams Street and Starr Avenue.

Transit System

The NVTA has published a report, *Vision 2040 Moving Napa Forward Transportation Plan*, which outlines policies to improve system safety of all users, serve the transportation needs of all users regardless of age, income or ability, and to improve overall reliability of the transit system. As the shift from one-car trips to multi-modal and active transportation uses increases, the plan would require collaboration with the City and other jurisdictions to modify service as needed to serve the community. The plan would also promote the Vine Trail as an active transportation use, and along with the 2019 General Plan's "Complete Streets" approach, improve overall connectivity, ease of access, and safety for all members of the community.

The Wine Train is not expected to increase frequency or add stops within the city, and additional commuter or freight train traffic is not expected to occur by 2040.

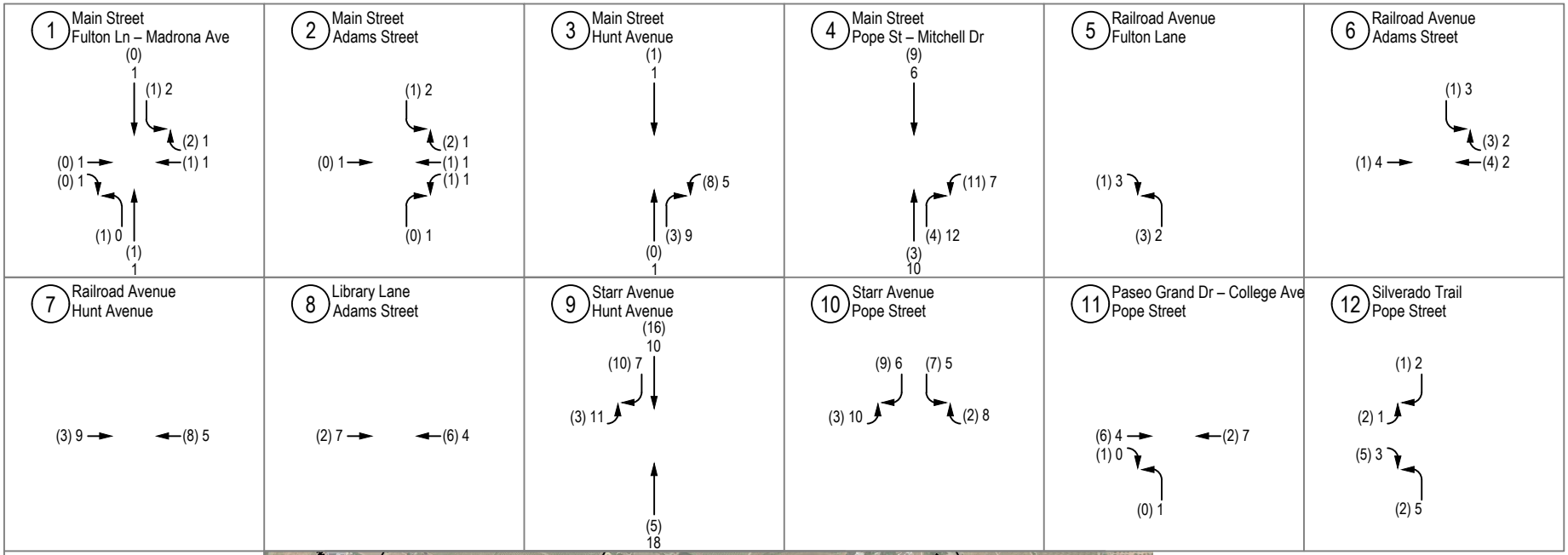
Thresholds of Significance

Consistent with Appendix G of the CEQA Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
- Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b).
- Substantially increase hazards due to a geometric design feature (e.g., sharp curves, or dangerous intersections) or incompatible uses (e.g., farm equipment).
- Result in inadequate emergency access.

VMT CEQA Analysis

The updated State CEQA Guidelines do not establish a significance threshold for evaluating VMT impacts; however, OPR's Technical Advisory recommends a threshold of significance for residential, office and other land uses. While the recommended threshold for per capita or per employee for residential or office projects, respectively, is 15% below that of existing development, lead agencies can use more location-specific information to develop their own specific threshold for other project/land use types.



SOURCE: Google Maps 2017

FIGURE 3.14-5

Project Trip Distribution & Assignment - Single Family & Accessory Dwelling Units

Hunter Subdivision Project

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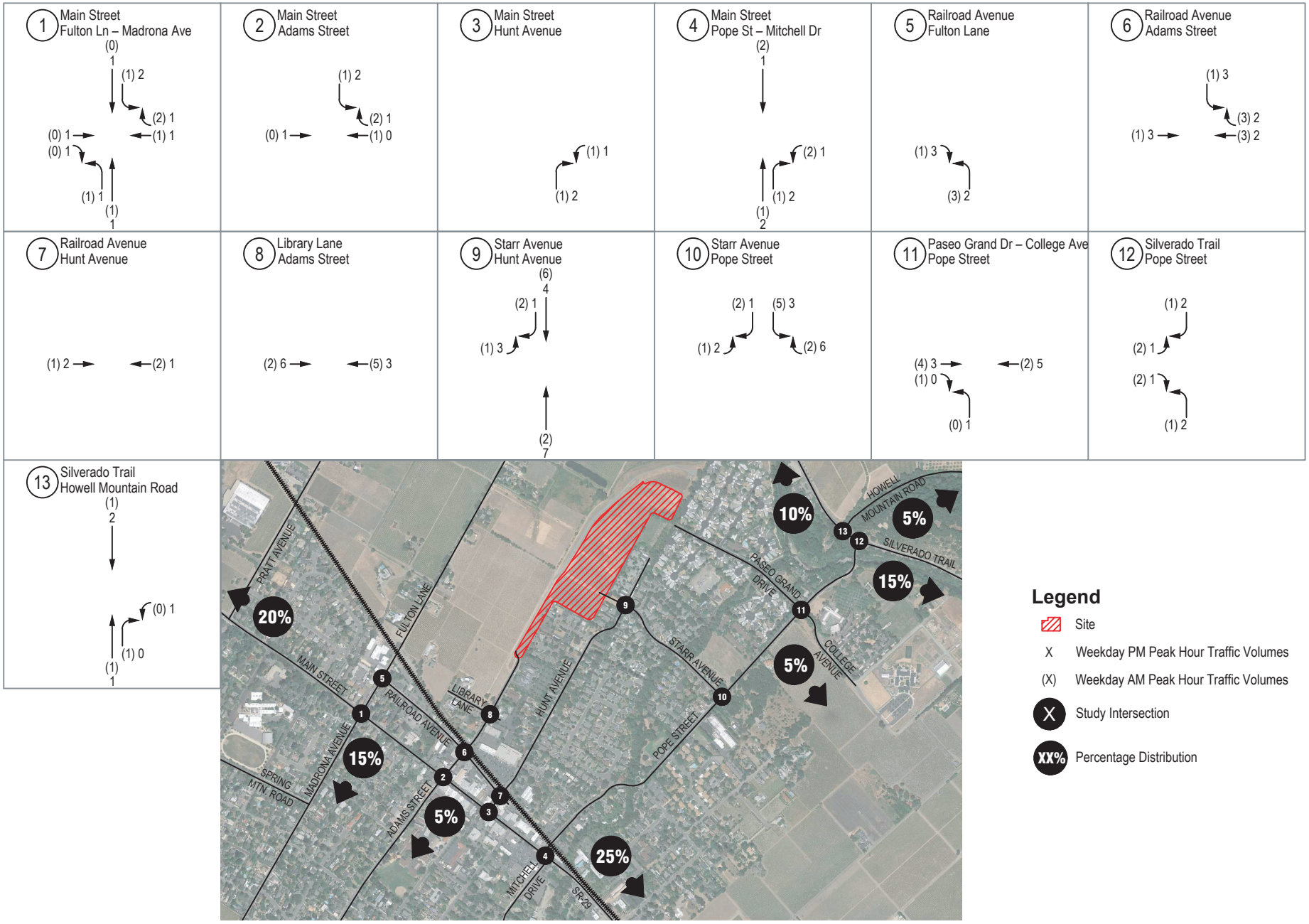

SOURCE: Google Maps,05/2017

FIGURE 3.14-6

Project Trip Distribution & Assignment - Multi-Family Housing

Hunter Subdivision Project

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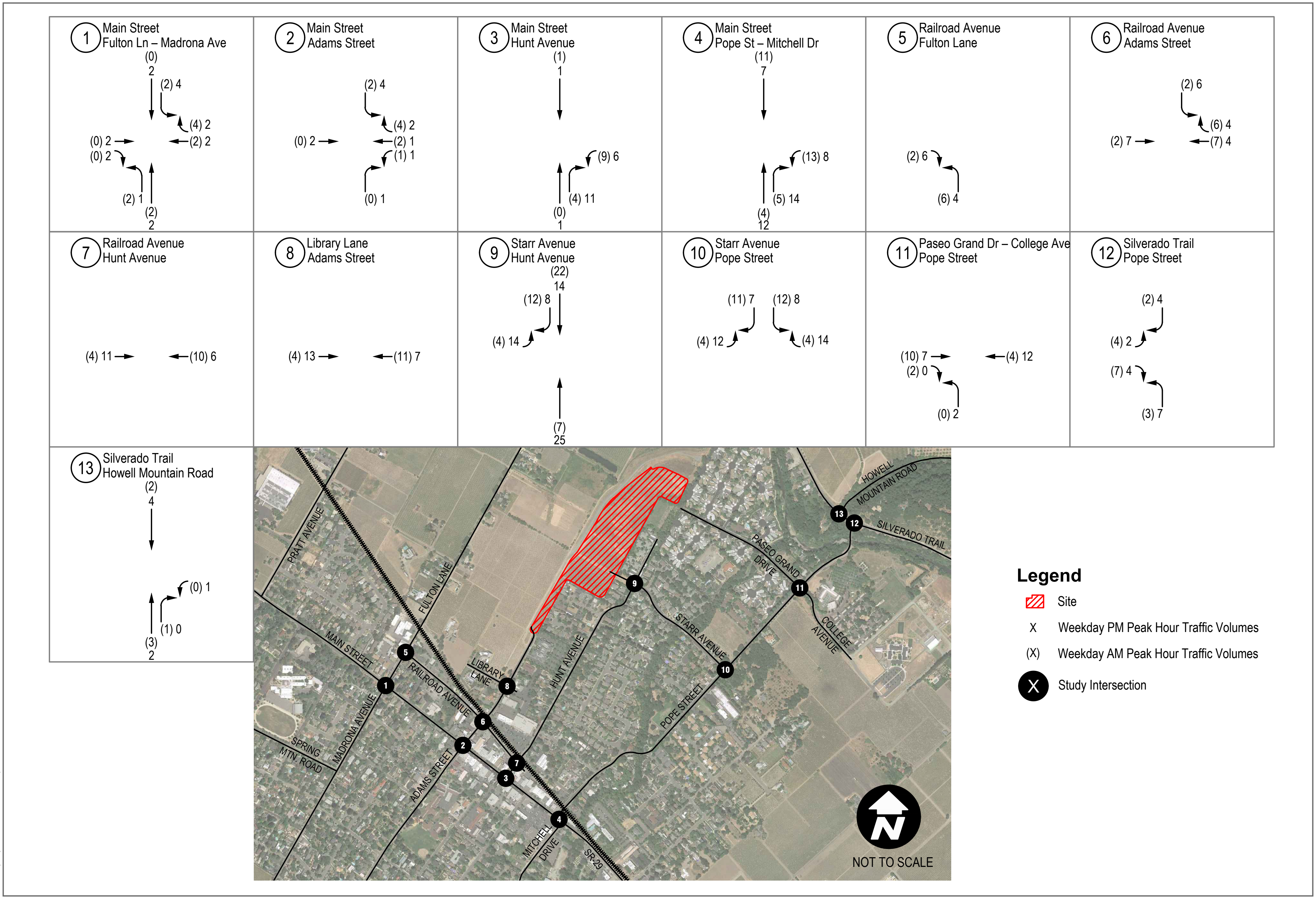

SOURCE: Google Maps 2017

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FIGURE 3.14-7

Project Trip Distribution & Assignment - Total (All Uses)

Hunter Subdivision Project

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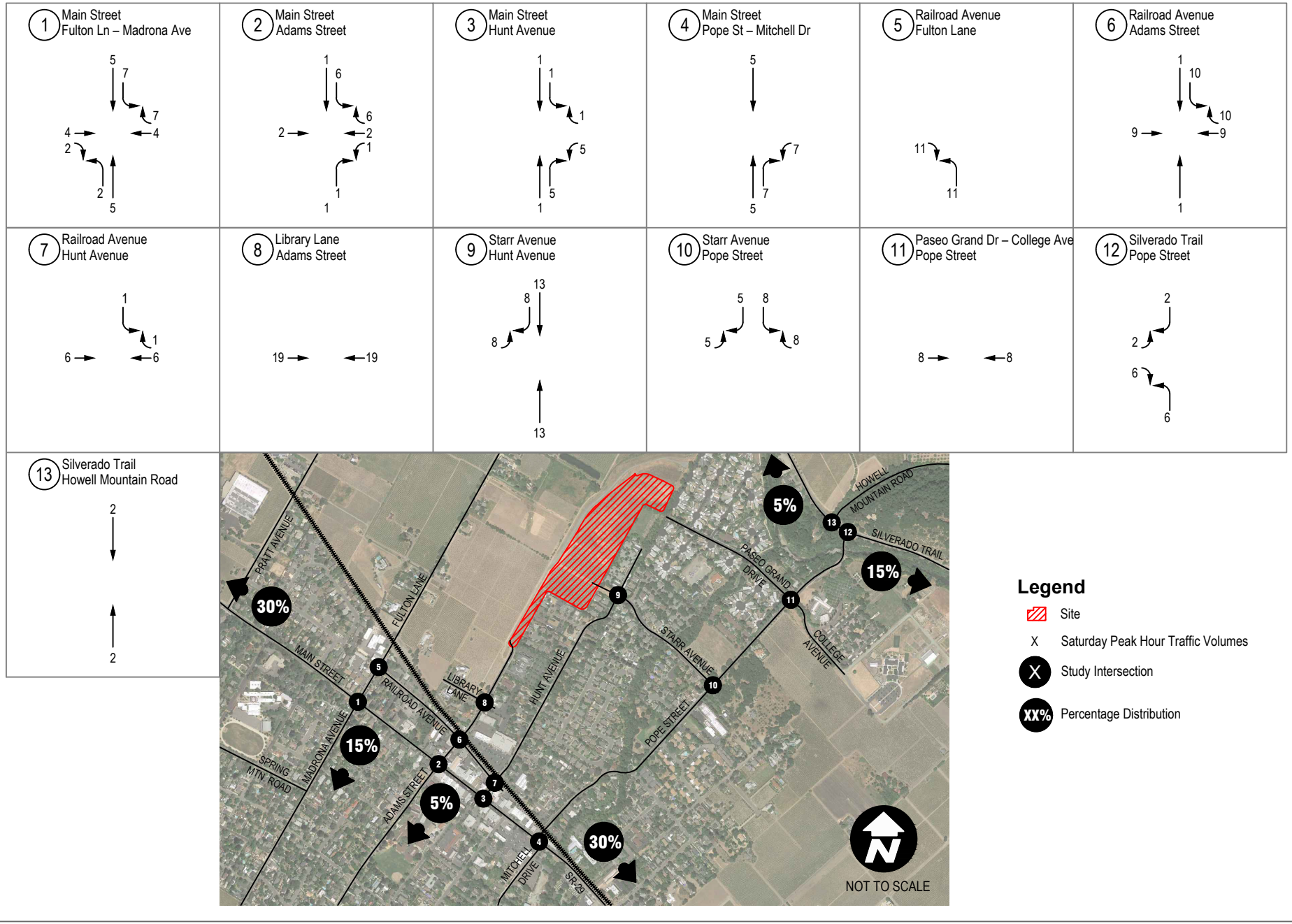

SOURCE: Google Maps 2017

FIGURE 3.14-8

Project Trip Distribution & Assignment - Saturday (All Uses)

Hunter Subdivision Project

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Since the City has not yet adopted VMT significance thresholds, the following significance threshold for residential projects provided in the OPR's Technical Advisory has been used for the Proposed Project:

- Residential: Exceed a level of 15% below existing VMT per capita, which may indicate a significant transportation impact. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. Proposed development referencing a threshold based on city VMT per capita (rather than regional VMT per capita) should not cumulatively exceed the number of units specified in the adopted SCS for that city and should be consistent with the SCS. The VMT analysis for the Proposed Project uses the Citywide VMT per capita as the significance threshold.

Impacts and Mitigation Measures

3.14-1: Would the Proposed Project conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? This impact would be less than significant.

As shown in the overview of applicable plans and policies under Section 3.14.3, the Proposed Project would be consistent with applicable plans, city ordinances or policies addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.

As noted in the TIS (Appendix K), the Proposed Project would exceed the City's General Plan consistency criteria for evaluating LOS. However, as indicated above, under the current CEQA Guidelines, LOS, or vehicle delay, is no longer considered an environmental impact under CEQA, and VMT has been adopted as the most appropriate measure of transportation impacts. Improvement measures to address potential inconsistencies with General Plan policies are provided in the Proposed Project's TIS.

In addition, the TIS also addresses Policy CR1.1 and Action CR1.C included in the City's 2019 General Plan, and acts as the "Special Study" required to evaluate the new pedestrian and bicycle networks on the extension of Starr Avenue, north to Adams Street; and, the extension of Adams Street, east to Starr Avenue. A summary of the analysis of the Starr Avenue and Adams Street extensions are summarized below.

Transit, Pedestrian, and Bicycle

The NVTA manages Vine Transit, which provides transit service in the greater Napa County region and serves the Project site. The St. Helena Shuttle, Vine Route 10, and Vine Route 29 all provide differing levels of frequency and connectivity to transit riders. Access to these transit stops are a few blocks from the Project site and sidewalks are available to ensure safe pedestrian access. No transit stops would be included within the Project site.

In developed areas to the south/southeast sidewalks are present. As part of the Proposed Project, Adams Street and Starr Avenue would be extended to provide vehicle, bicycle and pedestrian access to the site, consistent with the 1993 General Plan Policy 5.8.1 and Policy CR1.1 from the City's 2019 General Plan. Sidewalks would be provided along both sides of the street allowing safe pedestrian access to the site from adjacent areas. Sidewalks are also available connecting the Project site to downtown St. Helena.

Class II bicycle lanes are available along the entirety of Starr Avenue and Silverado Trail and the majority of Pope Street from Railroad Avenue to Paseo Grand Drive-College Avenue. Class III bicycle routes are provided along Hunt Avenue and portions of Pope Street, east of Railroad Avenue and west of Paseo Grand Drive-College Avenue, towards the approach to the Pope Street Bridge. The extension of Starr Avenue and Adams Street would provide Class III bicycle access to the site and on roadways throughout the site.

The Project site would facilitate accessibility to downtown St. Helena by way of existing sidewalks that would provide access to several neighborhood services such as Main Street, retail and grocery stores, and the City's Public Library. As shown on the Bicycle Network of the City's 2019 General Plan, Napa Valley Vine Trail is proposed along Adams Street from Railroad Avenue to Starr Avenue and continues along Starr Avenue to Pope Street. The proposed Napa Valley Vine Trail would include Class I, Class II and Class III bicycle network segments.

The Proposed Project supports the NVTA's and Vine Transit's initiatives to foster local accessibility and adequate transit facilities for City residents. The Proposed Project would provide adequate sidewalks and bicycle amenities and would not conflict with any plans or policies supporting either the development of these facilities or the use of these facilities. The Proposed Project does conflict with any plans or policies that address transit, pedestrian and bicyclist facilities; therefore, impacts are **less than significant.**

Mitigation Measures

None required.

3.14-2: Would the Proposed Project conflict or be inconsistent with CEQA Guidelines Section 15064.3(b)? This impact would be potentially significant.

CEQA Guidelines Section 15064.3(b), focuses on newly adopted VMT criteria for determining the significance of transportation impacts.

As mentioned above, the Proposed Project is requesting approval of a Tentative Subdivision Map to subdivide the Project site into 51 single-family lots with 11 of the 51 lots developed with an ADU and a 3.4-acre lot designated for 25 multifamily units. As directed by the City, the average VMT/capita at the TAZ level was used for comparing the Proposed Project's VMT

relative to the Citywide VMT. The VMT maps available for Napa County from NSABM were used to determine the VMT/capita in the TAZ in which the Proposed Project is located.

Figure 3.14-9, VMT Screening Map, illustrates the VMT/capita estimate that was used in screening the Proposed Project. As shown in Figure 3.14-9, the Proposed Project is located is SNABM Zone 199. The VMT per capita of this zone is 11.37 per capita. The Proposed Project's VMT (Project TAZ VMT of 11.37) was compared with the City's 2015 baseline VMT per capita from the NSABM model (11.34 VMT per capita). As mentioned above, the City is using OPR's criteria indicating that a residential project that exceeds a level of 15% below existing VMT per capita would have a potentially significant transportation impact. As shown in the Table 3.14-3, the TAZ within which the Proposed Project is located has an existing VMT per capita of 11.37 which is above the Citywide VMT per capita of 11.34, as well as above the Citywide VMT per capita of 9.64. Therefore, the Proposed Project would exceed OPR's significance threshold of 15% less than the existing VMT resulting in a potentially significant impact.

Table 3.14-3
Proposed Project VMT Summary

Boundary/Threshold	VMT per capita
SNABM Zone 199 (Proposed Project TAZ)1	11.37
St. Helena (City)1	11.34
15% below Citywide Threshold2	9.64
Proposed Project TAZ VMT Above Threshold (greater than Citywide Threshold of 9.64)	**Yes**
Proposed Project VMT % Above Threshold3	15.2%

Notes:
1 VMT per capita value is from the VMT Tool for NSABM for 2015 Baseline conditions.
2 15% below Citywide VMT threshold of 11.34 = 9.64.
3 Increase calculated as 11.37-9.64 ÷ 11.37 = 0.152 or 15.2%.

Source: Dudek 2021.

Mitigation Measures

To mitigate the Proposed Project's impact related to VMT, the following Transportation Demand Management (TDM) strategies and Proposed Project design features were evaluated to determine feasibility for the Proposed Project. Based on the assessment of the potential TDM strategies it was determined implementation of these strategies would reduce the Proposed Project's VMT nominally (by approximately 2.0%). Therefore, as shown in Table 3.14-3, because the Proposed Project's VMT would be 15.2% higher than the Citywide VMT per capita under existing conditions a reduction of 2.0% would not reduce VMT to below the Citywide threshold of 9.64. Because there are no feasible mitigation measures available to substantially reduce or lessen the impact of the Proposed Project to less than significant, the impact is a **significant and unavoidable impact**.

Land Use Strategies

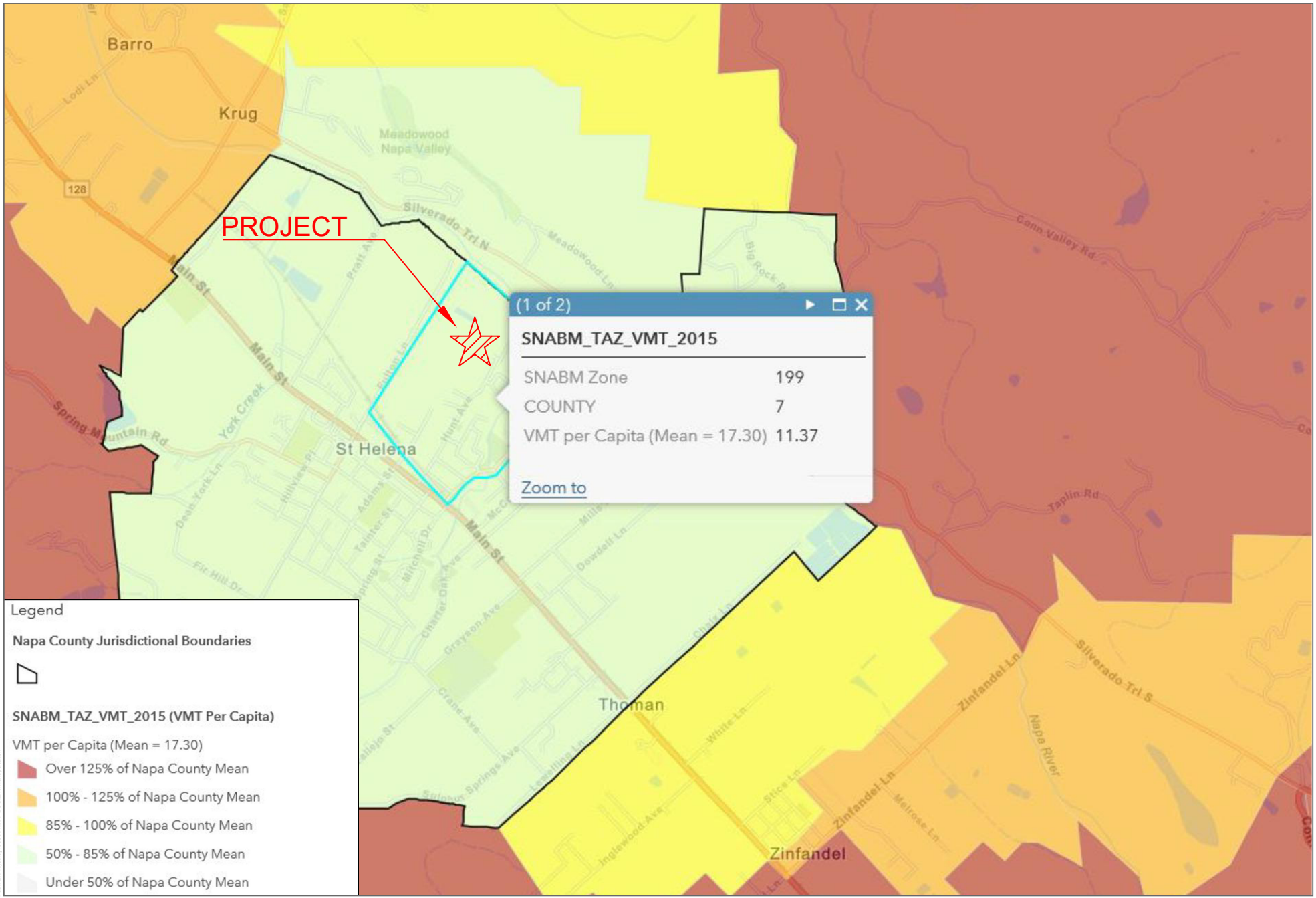
These land use strategies include land use diversity and supporting design features that encourage residents to walk, bike and/or use transit facilities and thereby reduce the total VMT. The Project site would facilitate accessibility to downtown St. Helena (i.e., approximately 0.7 miles from the Project site) by way of existing and new sidewalks that would provide access to downtown St. Helena including several neighborhood services along Main Street, such as retail and grocery stores, and to the St. Helena Public Library (located 0.1 miles from the Project site).

Due to the Proposed Project location, future residents could walk and bicycle to and from the town center. However, because the Proposed Project does not propose a mix of uses (i.e., retail or commercial) most of the Proposed Project's VMT would be to external (off-site) destinations and there would be no internal trip capture. Therefore, because the Proposed Project does not include a mix of uses a VMT reduction cannot be applied for any land use strategy.

Neighborhood /Site Design

- *Pedestrian Network/ Bicyclist Trail Network*

As mentioned under Section 3.14.2 Environmental Setting, pedestrian facilities are located near the Project site and Adams Street and Starr Avenue would be extended as part of the Proposed Project to provide vehicle, bicycle, and pedestrian access to the site. Sidewalks would be provided along both sides of Starr Avenue and Adams Street allowing safe pedestrian access to the site. The Project site would facilitate accessibility to downtown St. Helena by way of existing and proposed sidewalks that would provide access to several neighborhood services such as Main Street, retail and grocery stores, and the City's Public Library. Guidance for VMT reduction strategies is available in the document Quantifying Greenhouse Gas Mitigation Measures, August 2010 from the California Air pollution Control Officers Association (CAPCOA). CAPCOA estimates that for urban and suburban projects, providing a pedestrian network within the Project site that also connects to off-site pedestrian networks would reduce VMT by 2.0%. (CAPCOA SDT-1)



SOURCE: SNABM 2020

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FIGURE 3.14-9

VMT Screening Map

Hunter Subdivision Project

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Class II bicycle lanes are also available along the entirety of Starr Avenue and Silverado Trail and the majority of Pope Street from Railroad Avenue to Paseo Grand Drive-College Avenue. Class III bicycle routes are provided along Hunt Avenue and portions of Pope Street, east of Railroad Avenue and west of Paseo Grand Drive-College Avenue, towards the approach to the Pope Street Bridge. Along the Proposed Project access, Starr Avenue connects the site to the larger City bicycle network via Pope Street or Hunt Avenue. The City's Bicycle Plan was adopted in 2012 as part of the larger Napa County Transportation and Planning Agency's Bicycle Master Plan. The Napa Countywide Bicycle Plan was released in September 2019, however, has not yet been adopted by the City. This plan includes improvements such as Class III bicycle routes along Main Street, Railroad Avenue and Hunt Avenue and Class II bicycle path along Adams Street and Starr Avenue.

As shown on the Bicycle Network in the City's 2019 General Plan, Napa Valley Vine Trail is proposed along Adams Street from Railroad Avenue to Starr Avenue and continues along Starr Avenue to Pope Street. The proposed Napa Valley Vine Trail would include Class I, Class II and Class III bicycle network segments.

With the assumption that appropriate supportive features would be provided, a 2.0% VMT reduction per CAPCOA SDT-1 can be expected and applied to the Proposed Project as a result of connections to the existing and proposed pedestrian and bicyclist facilities.

Because the pedestrian and bicycling features contemplated in this strategy are (1) already part of the Project, (2) are already in existence or planned to be constructed by the City, or (3) are beyond the ability of the Proposed Project to implement, no mitigation to require these features is proposed.

Commute Trip Reduction and Travel Services

- *TDM Strategy Marketing for Residents*

"New resident" information packets could be distributed to all new residents to ensure that they are aware of all alternative transportation mode options available near the Proposed Project. The City could also post this information on the City's website so that this information is always accessible. Per CAPCOA standard TRT-7: Commute Trip Reduction Marketing, a VMT reduction percentage can be estimated for this measure, however based on the Proposed Project's size, it is likely to be less than 0.5%.

Because this measure would have a negligible effect on VMT, it is not proposed as a mitigation measure.

- *Bike-Share/Car-Share and Neighborhood Electric Vehicle Program*

Bike-share, car-share, car-pooling and neighborhood electric vehicle (NEV) programs reduce the need to have a car or second car. CAPCOA associates a VMT reduction with NEV participation and ownership, along with a travel network that accommodates NEV use, including features such as charging facilities, striping, signage, and educational tools (CAPCOA SDT-3). The VMT reductions are based on market penetration levels (i.e., percent of households with access to a NEV) and an average reduction in total VMT per NEV household of 12.7%. Since the number of NEV's per household cannot be estimated at this time and the city does not have an EV ride share program, no VMT reduction was assumed from this strategy.

Because no VMT reduction is projected to result from this strategy, it is not proposed as a mitigation measure.

- *Transit System Improvement Strategies*

  Network Expansion/Service Frequency/Speed Increase

This strategy would include coordination with the local transit operator (NVTA) to extend transit service to the Project site as well as increase service frequency. Increase in frequency by reducing transit headways, especially of the local shuttle service (St. Helena Shuttle), could potentially reduce the Proposed Project's VMT. According to the CAPCOA Report, transit network expansion and increasing transit service frequency results in VMT reductions ranging from 0.1-8.2% and 0.02-2.5%, respectively. Per the City's 2019 General Plan, only 1% of city residents commute by transit. Therefore, transit usage in the city is currently very low and cannot be assumed to provide a significant VMT reduction. Furthermore, the likelihood of an expansion of the transit network or increase in service frequency is not known at this time, therefore no VMT reduction was assumed from this strategy.

Because no VMT reduction is projected to result from this strategy, it is not proposed as a mitigation measure.

3.14-3: Would the Proposed Project increase hazards due to a geometric design feature or incompatible use? This impact would be less than significant.

Due to concerns raised in response to the NOP, the analysis below addresses potential safety hazards associated with Proposed Project access and design, including an overview of accident data. Potential hazards associated with construction activities is also provided.

Proposed Project Access and Circulation

As mentioned previously, the Proposed Project would extend Starr Avenue northward into the Project site, and intersect with Adams Street, which the Proposed Project would also extend eastward from its current terminus. As Starr Avenue is extended northward, it would narrow

from an approximately 75-foot right-of-way (ROW) to a 60-foot ROW with 4-foot-side sidewalks and a 6-foot-wide planter strip on both sides of the street, consistent with City's street standards. This extension, along with Adams Street, would be designed to accommodate emergency service vehicles and maintain accessibility for pedestrians and bicyclists according to City street design standards.

Additional, internal public residential streets within the Project site would be created to accommodate neighborhood circulation and provide on-street parking on both sides of the Starr Avenue and Adams Street extensions (where permitted). These roadways would be designed to be consistent with all applicable City street design criteria and conform to the City's Municipal Code (Section 16.32.060) to ensure that emergency service vehicles can adequately access and circulate within the Project site.

Based on a review of the proposed Tentative Subdivision Map, and field observations of existing on-street conditions around the site on Adams Street and Starr Avenue, there are no visual obstructions that would impede vehicles, bicyclists, and pedestrians from having safe access to and from the Project site.

As Adams Street is extended eastward and Starr Avenue is extended northward to link with Adams Street, the overall roadway geometrics would change. The intersection of Starr Avenue/Hunter Avenue would become a 4-way intersection, and vehicles would be able to access the Project site and unnamed internal roadways (Road A, Road B) within the Project site. The internal roadways would be used by Proposed Project residents, however the potential for Starr Avenue and Adams Street to be used as an alternative to Main Street/ SR 29 could also increase. Motorists could bypass the downtown area by traveling eastbound along Pope Street, northbound along Starr Avenue, westbound along Adams Street, northbound along Railroad Avenue, and finally eastbound along Fulton Lane to connect back to Main Street (the reverse applies for traffic travelling to the south of the region). Currently, motorists travel northbound along Starr Avenue and then westbound along Hunt Avenue before reaching Railroad Avenue. The expected increase in vehicles using these maneuvers would be higher along Adams Street and Starr Avenue, but lower along Hunt Avenue. However, the reopening of the Pratt Avenue connection between Main Street and Silverado Trail, as well as the future extension and connections identified in the 2019 General Plan would eliminate the need for such maneuvers other than under extreme circumstances.

Collision Analysis

A qualitative collision analysis was performed to disclose the collision history in the traffic study area. No incidences were reported near the Project site nor on roads the provide access to the Project site. Five years of collision data, from 2014 to 2018, was obtained from the California

Highway Patrol's (CHP) *Statewide Integrated Traffic Records System* (SWITRS). It is important to note that it may take up to six months for a collision to appear within the database, therefore data for 2018 may be incomplete.[11]

The SWITRS database is a public system that processes and collects data from CHP and other police agencies. The database was queried to select for all collisions occurring within the jurisdiction of the St. Helena Police Department (SHPD) and then narrowed down to the study area intersections that contained collisions resulting in pedestrian or bicyclist injury, as well as collisions occurring at intersections. Most "rear-end" type of collisions were not considered in this analysis since these types of collisions are considered to be by fault of the driver and not because of the intersection or roadway layout, or lack of signalization, as shown in Table 3.14-4. The SWITRS files are included in Appendix K.

Table 3.14-4
Collision Summary (2014-2018)

Nearest Study Intersection	# of Total Collisions	Total # of Injured[1]	Total # of Pedestrians Injured	Total # of Bicyclists Injured	Primary Cause
1. Main Street/Fulton Lane – Madrona Avenue	9	4	1	0	Ran light; improper turn
2. Main Street/Adams Street	4	3	3	0	Left turn/pedestrian crossing conflict
3. Main Street/Hunt Avenue	2	0	0	0	Left turn/pedestrian crossing conflict; improper turn
4. Main Street/Pope Street – Mitchell Drive	5	2	1	0	Unsafe speed
11. Paseo Grand Drive – College Avenue/Pope Street	1	0	0	0	Improper turn
12. Silverado Trail/Pope Street	15	12	0	0	Left turn and right-of-way conflicts
13. Silverado Trail/Howell Mountain Road	4	3	0	0	Improper turn

Notes: SWITRS Database Query conducted March 27, 2019.
1 Consists of all injured parties (motorists, pedestrians, and bicyclists).
Source: SWITRS 2019.

As shown in Table 3.14-4, the total number of people injured within the 40 reported collisions is 24 people, 5 of which were pedestrians, and no bicyclists. The intersection of Silverado Trail/Pope Street had the highest number of total collisions recorded. These collisions may be

11 Data from 2019 and 2020 was not available because the website was undergoing maintenance.

attributed to the narrowing of Pope Street at both approaches to the narrow Pope Street Bridge, creating slower moving traffic heading towards a higher speed roadway (Silverado Trail).

The Proposed Project would not increase hazards due to a geometric design feature or incompatible use that would contribute to an increase in collisions or create visual obstructions that would impede vehicles, bicyclists, and pedestrians from having safe access to and from the Project site. The impact is **less than significant.**

Construction

Construction activities presented in this section are based on construction assumptions included in Section 3.3, Air Quality. Construction traffic impacts would be temporary until buildout of the Proposed Project is completed. The build out scenario evaluated in the air quality analysis conservatively assumes buildout in 6 years.

Proposed Project construction activities have the potential to cause temporary traffic impacts on motorists. Traffic impacts from construction would be expected to occur as a result of the following conditions:

- Temporary increases in truck traffic associated with delivery of construction materials.
- Temporary increases in automobile traffic associated with construction workers traveling to and from the Project site.
- Temporary reductions in existing street capacity or on-street parking from temporary lane closures necessary for the construction of roadway improvements, utility relocation or extension, and drainage facilities.
- Temporary blockage of existing vehicle or pedestrian access to other parcels fronting streets.

For the purposes of this EIR, Proposed Project construction is expected to take 6 years, from site clearing and grading of the site to the end of building construction. Construction activity would occur on weekdays and may occasionally occur on Saturday. All heavy trucks would be required to comply with chapter 10.36 of the City's Municipal Code that establishes SR 29/Main Street as the primary truck route for heavy construction vehicles (exceeding a maximum gross limit of ten thousand (10,000) pounds). It is anticipated trucks would access the site using SR 29 connecting to Pope Street and Starr Avenue. All construction activities would be limited to Monday through Saturday from 8:00 AM to 5:00 PM, consistent with chapter 8.24 of the City's Municipal Code that allows construction activities to occur within these days and times.

Of the five construction phases (site preparation, grading, paving, building construction, and architectural coating), the building construction phase would generate the most traffic, related to

the number of construction workers destined to/from the site. For the 6-year buildout, building construction would generally last for seven months with one phase lasting 11 months.

It is estimated that the maximum number of construction personnel per day during the most intense phase (building construction) would be 20 workers. Assuming worst-case, non-carpooling among the workers, there would be a maximum of 40 construction worker trips per day (20 inbound and 20 outbound). The building construction phase would also require delivery of construction materials. It is estimated that an average of five delivery truck trips per weekday would occur, resulting in 10 daily truck trips (5 inbound and 5 outbound).

In general, the hours of construction typically require workers to be on-site before the weekday morning commuter peak period and allow them to leave before the afternoon commuter peak period (outside of the peak morning and evening commute times). Saturday construction activity would occur outside of the typical weekend midday peak period. Therefore, the large majority of construction-related trips would occur outside of the typical weekday commuter per periods and weekend midday peak period.

Parking for construction workers would be provided on-site. Therefore, construction workers and vehicles would not reduce the availability of parking spaces on streets surrounding the Project site. Also, no bus stops would be relocated and no bus lines would be rerouted due to Proposed Project construction.

Construction of the Proposed Project would be largely contained within the Project site and would generally not affect adjacent street access. In addition, any delays from additional construction traffic and/or construction activities at locations other than the streets adjacent to the Project site are not expected to be substantial. Certain construction activities such as roadway improvements and utility relocation or extension could require temporary lane closures, which would in turn temporarily reduce existing street capacity, but such impacts would be short-term in duration and would done through building and/or grading permits with the City.

Based on the temporary nature of traffic generated by construction workers and delivery trucks; the off-peak travel times of the construction workers; and, the requirement to obtain construction permits through the City along with preparation of a temporary traffic control plan for construction activities, to be approved by the City's traffic engineer (Municipal Code Section 12.12.050), construction traffic is not expected to create hazards for roadway travelers, pedestrians, bicyclists, or transit riders. The impacts of construction activity on the overall transportation system are anticipated to be temporary in nature and would cause minimal interruption to the regular operation of, the facilities surrounding the Project site. Impacts on traffic associated with construction (e.g., an intermittent reduction in street and intersection operating capacity) are typically considered short-term adverse impacts, but not significant.

Therefore, Proposed Project construction impacts on the transportation system would be **less than significant**.

Mitigation Measures

None required.

3.14-4: Would the Proposed Project result in inadequate emergency access? This impact would be less than significant.

The St. Helena Fire Department has reviewed the proposed Tentative Subdivision Map and has not identified any issues with inadequate emergency access.

Specifically, the Proposed Project includes two primary access points, Star Avenue and Adams Street as well as a separate emergency vehicle access. In the event of an emergency there would be three avenues that would enable vehicles to enter/exit the Project site. As described in Section 3.12, Public Services, the Proposed Project would be consistent with the 1993 General Plan Policy 8.5.7 and 2019 General Plan Policy PS4.6, which requires all streets and roads be designed with adequate width, turning radius, and grade to facilitate access by City firefighting apparatus, and to provide alternative emergency ingress and egress.

Once the Tentative Subdivision Map is approved, the Proposed Project's Final Subdivision Map would be subject to additional review by the St. Helena Fire Department to confirm proper access for fire and emergency response is provided and required fire suppression features are included.

Because adequate emergency access is provided the impact is considered **less than significant.**

Note: Wildfire risk and evacuation regulations are discussed in Section 3.8, Hazards and Hazardous Materials, and state the Proposed Project would not conflict with the Napa County Emergency operations Plan and adequate site access is available in the event of a wildfire.

Mitigation Measures

None required.

3.14.5 Cumulative Impacts

OPR's Technical Advisory provides guidance to practitioners regarding VMT analysis under cumulative conditions. Specifically, for projects analyzed using a VMT efficiency metric, the following statement is made: "A project that falls below an efficiency-based threshold that is aligned with the long-term environmental goals and relevant plans would have no cumulative

impacts distinct from the project impact. Accordingly, a finding of less-than-significant project impact would imply a less than significant cumulative impact, and vice versa".

Impacts related to inadequate emergency access and conflicts with transit, bicycle or pedestrian transportation would be identical to the impacts described in the Proposed Project impacts section; and all impacts would be less than significant.

Cumulative impacts are evaluated within the Cumulative plus Proposed Project framework which is based on the Buildout (2040) condition.

3.14-5: Under Cumulative conditions, would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? This impact is considered potentially significant.

Based on the guidance provided by OPR and the VMT analysis above, since the Proposed Project would have a per capita VMT impact under the existing/base year, it would also have a **potentially significant cumulative impact** to VMT.

Mitigation Measures

Mitigation measures evaluated under Impact 3.14-3 would also apply under cumulative conditions; however, even with the inclusion of feasible TDM the Proposed Project's cumulative impact cannot be avoided or reduced to a less-than-significant level. No other feasible mitigation measures are available. Therefore, the Proposed Project's cumulative impact would be significant and unavoidable.

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3.15 ENERGY

This section evaluates the potential impacts that the proposed Hunter Subdivision Project (Proposed Project) may have on energy resources. This section presents the environmental and regulatory energy resource setting along with an analysis and discussion of energy resource impacts resulting from implementation of the Proposed Project.

No comments were received that raised concerns regarding energy resources in response to the Notice of Preparation. A copy of the Notice of Preparation and comments received is included in Appendix A.

Information contained in this section is based on Proposed Project plans and the California Emissions Estimator Model (CalEEMod) (used to estimate Proposed Project energy consumption). The analysis and findings are based on the emissions modeling, which can be found in Appendix C. Other sources consulted are listed in Section 3.15.6, References.

3.15.1 Environmental Setting

The environmental setting for the Proposed Project related to electricity, natural gas, and petroleum, including associated service providers, supply sources, and estimated consumption, is discussed as follows. In summary, in 2017 (the latest calendar year for which data is uniformly available for all three types of energy sources), California's estimated annual energy use included the following:

- Approximately 257,268 gigawatt hours of electricity (EIA 2019a)
- Approximately 2,110,829 million cubic feet (EIA 2019b)
- Approximately 16 billion gallons of gasoline (CEC 2018a)

Electricity

Electricity usage in California varies substantially by the types of uses in a building, types of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita has remained stable for more than 30 years, and the national average has steadily increased (CEC 2015a).

Two electricity service providers provide service to the City of St. Helena (City) and Napa County. The City joined the Marin Clean Energy (MCE), a community choice aggregation program. According to MCE's 2019 Integrated Resource Plan, approximately 89% of City residents purchase electricity through MCE (MCE 2019). MCE's 2019 peak demand forecast is approximately 1,048 million kilowatts and annual consumption is expected to be approximately 5,275 million kilowatt-

hours (kWh) (MCE 2019). The remaining 11% of customers within the City receive electricity from Pacific Gas & Electric Company (PG&E). PG&E provides electric services to 5.4 million customers, including 106,681 circuit miles of electric distribution lines and 18,466 circuit miles of interconnected transmission lines over a 70,000-square-mile service area that includes Northern California and central California (PG&E 2016). As presented in Table 3.15-1, according to PG&E, customers consumed 82,224 million kWh of electricity in 2017 (CEC 2018a).

Table 3.15-1
Pacific Gas & Electric Company 2017 Electricity Consumption

Sector	Total Electricity (in millions of kWh)
Agricultural and Water Pump	5,049.66
Commercial Buildings	30,446.89
Commercial Other	4,309.58
Industry	10,409.92
Mining and Construction	1,747.35
Residential	29,920.19
Streetlight	340.73
Total Consumption	**82,224.32**

Note: kWh = kilowatt-hour
Source: CEC 2018a.

PG&E receives electric power from a variety of sources. According to California Public Utilities Commission's (CPUC) 2018 Renewable Portfolio Standard (RPS) Annual Report to the Legislature, 33% of PG&E's power came from eligible renewable energy sources in 2017, including biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018). In addition, MCE provides three options to customers including MCE Light Green service, in which 60% of the power mix would be generated by eligible renewable sources and the MCE Deep Green or the MCE Local Sol services, in which 100% of the power mix would come from renewable sources (CEC 2019).

Based on recent energy supply and demand projections in California, statewide annual peak electricity demand is projected to grow an average of 890 megawatts per year for the next decade, or 1.4% annually, and consumption per capita is expected to remain relatively constant at 7,200–7,800 kWh per person (CEC 2015a).

In Napa County, PG&E reported an annual electrical consumption of approximately 1,064 million kWh in 2017, with 685 million kWh for non-residential use and 380 million kWh for residential use (CEC 2018b).

Natural Gas

The CPUC regulates natural gas utility service for approximately 10.8 million customers who receive natural gas from PG&E, Southern California Gas, San Diego Gas & Electric, Southwest Gas, and several smaller natural gas utilities. PG&E provides natural gas service to most of Northern California, including the City. As provided in Table 3.15-2, PG&E customers consumed approximately 4,715 million therms of natural gas, in 2017 (CEC 2018c).

Table 3.15-2
Pacific Gas & Electric Company 2017 Natural Gas Consumption

Sector	Total Natural Gas (in millions of therms)
Agricultural and Water Pump	36.40
Commercial Buildings	864.81
Commercial Other	67.96
Industry	1,701.34
Mining and Construction	170.82
Residential	1,873.36
Total Consumption	**4,714.69**

Source: CEC 2018c.

Natural gas is used for cooking, space heating, generating electricity, and as an alternative transportation fuel. The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30% of the natural gas delivered by California utilities in 2017. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70% of the natural gas delivered by California utilities in 2017 (EIA 2018b).

CPUC regulates California natural gas rates and natural gas services, including in-state transportation over transmission and distribution pipeline systems, storage, procurement, metering, and billing. Most of the natural gas used in California comes from out-of-state natural gas basins. California gas utilities may soon also begin receiving biogas into their pipeline systems (CPUC 2017).

In 2012, California customers received 35% of their natural gas supply from basins located in the Southwest, 16% from Canada, 40% from the Rocky Mountains, and 9% from basins located within California (CPUC 2017). Natural gas from out-of-state production basins is delivered into California through the interstate natural gas pipeline system. The major interstate pipelines that deliver out-of-state natural gas to California are the Gas Transmission Northwest Pipeline, Kern River Pipeline, Transwestern Pipeline, El Paso Pipeline, Ruby Pipeline, Southern Trails Pipeline, and Mojave Pipeline. The North Baja–Baja Norte Pipeline takes gas off the El Paso Pipeline at the California/Arizona border and delivers it through California into Mexico. The

Federal Energy Regulatory Commission regulates the transportation of natural gas on interstate pipelines, and CPUC often participates in Federal Energy Regulatory Commission regulatory proceedings to represent the interests of California natural gas consumers (CPUC 2017).

Most of the natural gas transported through interstate pipelines, as well as some California-produced natural gas, is delivered through the PG&E and Southern California Gas intrastate natural gas transmission pipeline systems (commonly referred to as California's "backbone" natural gas pipeline system). Natural gas on the backbone pipeline system is then delivered into local transmission and distribution pipeline systems or to natural gas storage fields. Some large noncore customers take natural gas directly off the high-pressure backbone pipeline system, and some core customers and other noncore customers take natural gas off the utilities' distribution pipeline systems. CPUC has regulatory jurisdiction over 150,000 miles of utility-owned natural gas pipelines, which transported 82% of the natural gas delivered to California's gas consumers in 2012 (CPUC 2017).

PG&E and Southern California Gas own and operate several natural gas storage fields located in Northern and Southern California. These storage fields and four independently owned storage utilities—Lodi Gas Storage, Wild Goose Storage, Central Valley Storage, and Gill Ranch Storage—help meet peak-season natural gas demands and allow California natural gas customers to secure natural gas supplies more efficiently (CPUC 2017).

California's regulated utilities do not own any natural gas production facilities. All natural gas sold by these utilities must be purchased from suppliers and/or marketers. The price of natural gas sold by suppliers and marketers was deregulated by the Federal Energy Regulatory Commission in the mid-1980s and is determined by market forces. However, CPUC decides whether California's utilities have taken reasonable steps to minimize the cost of natural gas purchased on behalf of its core customers (CPUC 2017).

In 2017 (the most recent year for which data is available), PG&E had delivered 39 millions of therms to Napa County, with the majority going to residential uses (21 millions of therms) (CEC 2018d).

Demand for natural gas can vary depending on factors such as weather, price of electricity, the health of the economy, environmental regulations, energy efficiency programs, and the availability of alternative renewable energy sources. As previously indicated, natural gas is available from a variety of in-state and out-of-state sources and is provided throughout the state in response to market supply and demand. Complementing available natural gas resources, biogas may soon be available through existing delivery systems, thereby increasing the availability and reliability of resources.

Petroleum

There are more than 34 million registered vehicles in California, and those vehicles consume an estimated 16 billion gallons of fuel each year (CEC 2020; DMV 2019). Petroleum currently accounts for approximately 92% of California's transportation energy consumption (CEC 2020). However, technological advances, market trends, consumer behavior, and government policies could result in significant changes in fuel consumption by type and in total. At the federal and state levels, various policies, rules, and regulations have been enacted to improve vehicle fuel efficiency, promote the development and use of alternative fuels, reduce transportation-source air pollutants and greenhouse gas (GHG) emissions, and reduce vehicle miles traveled (VMT). Market forces have driven the price of petroleum products steadily upward over time, and technological advances have made use of other energy resources or alternative transportation modes increasingly feasible.

Largely as a result of and in response to these multiple factors, gasoline consumption within the state has declined in recent years, and availability of other alternative fuels/energy sources has increased. The quantity, availability, and reliability of transportation energy resources have increased in recent years, and this trend may likely continue and accelerate (CEC 2017). Increasingly available and diversified transportation energy resources act to promote continuing reliable and affordable means to support vehicular transportation within the state.

3.15.2 Regulatory Setting

Federal, state, and local agencies regulate energy use and consumption through various means and programs. On the federal level, the U.S. Department of Transportation, the U.S. Department of Energy, and the U.S. Environmental Protection Agency are three federal agencies with substantial influence over energy policies and programs. On the state level, CPUC and California Energy Commission (CEC) are two agencies with authority over different aspects of energy. Relevant federal, state, and local energy-related regulations are summarized as follows.

Federal Regulations

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 FR 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Intermodal Surface Transportation Efficiency Act of 1991

The Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 promoted the development of intermodal transportation systems to maximize mobility and address national and local interests in air quality and energy. ISTEA contained factors for metropolitan planning organizations to address in developing transportation plans and programs, including some energy-related factors. To meet the new ISTEA requirements, metropolitan planning organizations adopted policies defining the social, economic, energy, and environmental values guiding transportation decisions.

Transportation Equity Act for the 21st Century

The Transportation Equity Act for the 21st Century was signed into law in 1998 and builds on the initiatives established in the ISTEA legislation (discussed above). The act authorizes highway, highway safety, transit, and other efficient surface transportation programs. The act continues the program structure established for highways and transit under ISTEA, such as flexibility in the use of funds, emphasis on measures to improve the environment, and focus on a strong planning process as the foundation of transportation decisions. The act also provides for investment in research and its application to maximize the performance of the transportation system through, for example, deployment of intelligent transportation systems to help improve operations and management of transportation systems and vehicle safety.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 was signed into law. In addition to setting more stringent Corporate Average Fuel Economy standards for motor vehicles, the Energy Independence and Security Act includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation (the RFS) requires ever-increasing levels of renewable fuels to replace petroleum (EPA 2013, 2015). The U.S. Environmental Protection Agency is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the Energy Independence and Security Act, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in GHG emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- Expands the RFS program to include diesel, in addition to gasoline
- Increases the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022
- Establishes new categories of renewable fuel, and sets separate volume requirements for each one
- Requires the U.S. Environmental Protection Agency to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces

Additional provisions of the Energy Independence and Security Act address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

State Regulations

The following discussion focuses primarily on those policies, regulations, and laws that directly pertain to energy-related resources. Also refer to Section 3.7, Greenhouse Gas Emissions, which addresses various policies, regulations, and laws targeted to the reduction of GHG emissions that are expected to achieve co-benefits in the form of reduced demand for energy-related resources and enhanced efficiencies in the consumption of energy-related resources.

Warren–Alquist Act

The California Legislature passed the Warren–Alquist Act in 1974. The Warren–Alquist Act was created by the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.

- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided. The plan also identified policies, strategies, and actions that are cost effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by the CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed as follows). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Senate Bill 1078 (2002)

Senate Bill (SB) 1078 established the California RPS Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20% standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill also required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy.

Senate Bills 107 (2006), X1-2 (2011), 350 (2015), and 100 (2018)

SB 107 accelerated the RPS established by SB 1078 by requiring that 20% of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 requires all California utilities to generate 33% of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December

31, 2013, 20% had to come from renewables; by December 31, 2016, 25% had to come from renewables; and by December 31, 2020, 33% will come from renewables.

SB 350 requires retail seller and publicly owned utilities to procure 50% of their electricity from eligible renewable energy resources by 2030, with interim goals of 40% by 2024 and 45% by 2027.

SB 100 increased the standards set forth in SB 350 establishing that 44% of the total electricity sold to retail customers in California per year by December 31, 2024; 52% by December 31, 2027; and 60% by December 31, 2030, be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100% of the retail sales of electricity to California. This bill requires that the achievement of 100% zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60% RPS in 2030.

Assembly Bill 1007 (2005)

AB 1007 required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with the other state, federal, and local agencies. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, 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. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40% below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focus on increasing energy efficiencies and the use of renewable resources and reducing the consumption of petroleum-based fuels (e.g., gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources.

Additional information on AB 32 and SB 32 is provided in Section 3.7 of this Environmental Impact Report.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies.

The 2019 Title 24 standards are the currently applicable building energy efficiency standards and became effective on January 1, 2020. The 2019 Title 24 Building Energy Efficiency Standards would further reduce energy used and associated GHG emissions compared to prior standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7% less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards would use approximately 53% less energy than those under the 2016 standards (CEC 2018e). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30% less energy than those built to the 2016 standards (CEC 2018e).

State Vehicle Standards

In a response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 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 whose primary use is 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. The 2009–2012 standards resulted in a reduction in approximately 22% GHG emissions compared to emissions from the 2002 fleet, and the 2013–2016 standards resulted in a reduction of approximately 30%.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global warming gases and requirements for greater numbers of zero-emission vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34% fewer global warming gases and 75% fewer smog-forming emissions (CARB 2011).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates. As codified in California Government Code, Section 65080, SB 375 requires metropolitan planning organizations to include a sustainable communities strategy in its regional transportation plan. The main focus of the sustainable communities strategy is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also a part of a bigger effort to address other development issues within the general vicinity, including transit and VMT, which influence the consumption of petroleum-based fuels.

Regional Regulations

Association of Bay Area Governments

In July 2017, the Association of Bay Area Governments, the designated metropolitan planning organization for the San Francisco Bay Area region adopted the Plan Bay Area 2040 (ABAG 2017). The Plan Bay Area is a long-range plan for transportation projects within the planning area and focuses on cost-effective operational improvements to preserve the existing and expanded regional transportation system through 2040. The 2017 update to the Plan Bay Area focused on refinement of and addressing implementation challenges to the previous (2010) plan. The Plan Bay Area includes seven goals and 13 performance targets covering three broad areas: the environment, equity, and the economy. The performance targets are evaluated in several areas defined as key concerns, including climate protection, adequate housing, healthy and safe communities, open space and agricultural preservation, equitable access, economic vitality, and transportation system effectiveness.

Local Regulations

City of St. Helena 1993 General Plan

The City of St. Helena 1993 General Plan does not include any relevant policies related to energy conservation.

City of St. Helena 2019 General Plan[1] ("General Plan Update 2040")

The City of St. Helena 2019 General Plan includes policies related to energy conservation. Although the analysis is based on the 1993 General Plan, the following policies are included for informational purposes:

> **Policy CC2.1:** Encourage measures to reduce energy demand through conservation and efficiency.
>
> **Policy CC2.2**: Support local efforts to improve the energy supply by switching from fossil fuels to renewables.

3.15.3 Impacts

Methods of Analysis

Energy calculations from construction and operation of the Proposed Project were calculated using CalEEMod Version 2016.3.2. Details relevant to the modeling assumptions are described below.

Construction

Heavy-duty construction equipment of various types would be used during construction. A spreadsheet-based model consisting of data values presented in Appendix D of CalEEMod's User Guide and specific information provide by PG&E was used to estimate construction equipment usage; results are included in Appendix C of this Environmental Impact Report. Fuel use associated with truck deliveries and worker vehicle trips are also included in this analysis. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 23,666 hours, as summarized in Table 3.15-3, Hours of Operation for Construction Equipment.

Table 3.15-3
Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Site Preparation (2023)	560
Grading (2023)	1,280
Paving (2023)	960
Building Construction (2023-2028)	65,440
Architectural Coating (2023-2028)	672
Total	**68,912**

Source: See Appendix C for details.

[1] Also known as the "St Helena General Plan Update 2040," the 2019 General Plan is referred to in this EIR by its adoption date.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2020).

Operations

Operational energy calculations were estimated for buildout of the Proposed Project. The first full year of operation was assumed to be 2029, which is based on the completion of all construction activities.

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage (non-hearth). The estimation of operational energy estimates (electricity and natural gas) were based on CalEEMod land use defaults and number of dwellings units. CalEEMod uses Residential Appliance Saturation Survey (RASS) datasets to obtain the energy intensities of different end use categories for different building types in different climate zones (CEC 2010).

Petroleum fuel consumption associated with motor vehicles traveling to and from the Project site is a function of VMT as a result of Proposed Project operation. As shown in Appendix C, the annual VMT attributable to the Proposed Project is expected to be approximately 1,605,342 VMT per year. Similar to construction worker and vendor trips, fuel consumption was estimated by converting the total CO_2 emissions from each land use type to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. The default fleet mix in CalEEMod for Napa County assumes that approximately 92.9% of vehicles are from light-duty to medium-duty vehicles and motorcycles were assumed to run on gasoline and the remaining 7.1% of vehicles represent medium-heavy duty to heavy-duty vehicles (delivery vehicles) and buses/recreational vehicles, which were assumed to run on diesel. Because CalEEMod calculates emissions from the transportation sector based on trip generation, the fleet mix assumes a disproportionately high number of medium-duty and heavy-duty trucks and bus trips. For example, of the 900 vehicle trips generated by the Proposed Project per day, the CalEEMod default would assume that approximately 64 trips per day are medium- and heavy-duty truck and bus trips, which is unrealistic for a residential project. Notably, CalEEMod calculates such a high number because the default fleet mix in is based on VMT and not vehicle trips and trucks travel approximately three to four times longer per trip than passenger vehicles.

Thresholds of Significance

Consistent with Appendix G of the California Environmental Quality Act Guidelines, a significant impact would occur if development of the Proposed Project would do any of the following:

- Result in the wasteful, inefficient or unnecessary consumption of energy resources during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

Impacts and Mitigation Measures

3.15-1: Would the Proposed Project result in wasteful, inefficient or unnecessary consumption of energy resources during Project construction or operation? This impact would be less than significant.

Construction Energy Use

Electricity

The majority of the energy used during construction would be from petroleum. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and construction trailer(s) by managerial staff during the hours of construction activities. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be **less than significant**.

Natural Gas

The need for natural gas is not anticipated during construction activities. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the following subsection, Petroleum. Any minor amounts of natural gas that may be consumed as a result of Proposed Project construction would be temporary and negligible and would not have an adverse effect; therefore, impacts would be **less than significant**.

Petroleum

Petroleum would be consumed throughout construction of the Proposed Project's infrastructure as well as residences. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and VMT associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities involved in grading and trenching for utilities would rely on diesel fuel. It is assumed construction workers would travel to and from the Project site in gasoline-powered vehicles.

The estimated diesel fuel use from construction equipment is shown in Table 3.15-4, Construction Equipment Diesel Demand.

Table 3.15-4
Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)[a]	kg CO_2/Gallon	Gallons
Site Preparation (2023)	7	16.73	10.21	1,638.13
Grading (2023)	8	26.06	10.21	2,552.46
Paving (2023)	6	20.03	10.21	1,961.49
Building Construction (2023-2028)	53	1,118.13	10.21	109,512.98
Architectural Coating (2023-2028)	6	12.54	10.21	1,400.40
			Total	**117,065.46**

Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Sources: See Appendix C for details; The Climate Registry 2020.

Fuel consumption from worker and vendor trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor/hauling vehicles are assumed to be diesel fueled.

Calculations for total worker, vendor, and hauler fuel consumption are provided in Table 3.15-5, Construction Worker Vehicle Gasoline Demand, and Table 3.15-6, Construction Vendor Truck Diesel Demand.

Table 3.15-5
Construction Worker Vehicle Gasoline Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg CO_2/Gallon[b]	Gallons
Site Preparation (2023)	180	0.55	8.78	62.57
Grading (2023)	400	1.22	8.78	139.04
Paving (2023)	300	0.92	8.78	104.28
Building Construction (2023-2028)	53,900	149.43	8.78	17,019.87
Architectural Coating (2023-2028)	1,232	3.38	8.78	385.34
			Total	**17,711.12**

Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Sources: See Appendix C for details, The Climate Registry 2020.

Table 3.15-6
Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg CO_2/Gallon[b]	Gallons
Site Preparation (2023)	0	0.00	10.21	0.00
Grading (2023)	40	0.50	10.21	48.60
Paving (2023)	0	0.00	10.21	0.00
Building Construction (2023-2028)	10,780	131.97	10.21	12,925.25
Architectural Coating (2023-2028)	0	0.00	10.21	0.00
			Total	**12,973.85**

Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton; kV = kilovolt
Sources: See Appendix C for details, The Climate Registry 2020.

As shown in Tables 3.15-3 through 3.15-6, construction activities are estimated to consume approximately 147,750 gallons of petroleum during the construction phase. By comparison, approximately 89 billion gallons of petroleum would be consumed in California over the course of the Proposed Project's construction phase based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (EIA 2019c). Thus, the total expected petroleum use from the Proposed Project's construction represents approximately 0.31% of California's consumption of petroleum over the construction duration. Notably, the Proposed Project would be subject to CARB's In-Use Off-Road Diesel Vehicle Regulation that applies to certain off-road diesel engines, vehicles, or equipment greater than 25 horsepower. The regulation: (1) imposes limits on idling, requires a written idling policy, and requires a disclosure when selling vehicles; (2) requires all vehicles to be reported to CARB (using the Diesel Off-Road Online Reporting System) and labeled; (3) restricts the adding of older vehicles into fleets starting on January 1, 2014; and (4) requires fleets to reduce their emissions by retiring, replacing, or repowering older engines, or installing Verified Diesel Emission Control Strategies (i.e., exhaust retrofits). The fleet must either show that its fleet average index was less than or equal to the calculated fleet average target rate, or that the fleet has met the Best Achievable Control Technology requirements. Therefore, because the Proposed Project would not be unusual as compared to overall local and regional demand for energy resources and would not involve characteristics that require equipment that would be less energy-efficient than at comparable construction sites in the region or state, Proposed Project construction would not result in wasteful, inefficient, or unnecessary consumption of petroleum and impacts would be **less than significant**.

Operational Energy Use

Electricity

At full build-out, the Proposed Project's operational phase would require electricity for operating the residences. CalEEMod default values for electricity consumption for each land use were applied (CAPCOA 2017). The electricity use for residential buildings is calculated in CalEEMod using energy intensity value (electricity use per square foot per year) assumptions, which were based on the RASS (CEC 2010).

The 2019 Title 24 standards were approved and adopted by the CEC in December 2018. The 2019 standards became effective on January 1, 2020. It was assumed that the Proposed Project would comply with the 2019 standards for the purposes of this evaluation; however, if the Proposed Project is approved whatever adopted standards are in place at the time would take precedence. Per the CEC Impact Analysis for the 2019 Update to the California Energy Efficiency Standards for Residential and Non-Residential Buildings, the first-year savings for newly constructed residential buildings, are 596 gigawatt hours of electricity, 50.4 megawatt of demand, and 0.4.42 million therms of gas, representing reductions from the 2016 Title 24 standard of 4%, 15%, and 5%, respectively.

Operational electricity use for the Proposed Project is presented in Table 3.15-7, Estimated Electrical Demand.

Table 3.15-7
Estimated Electrical Demand – Proposed Project Operation

Land Use Type[1]	Estimated Electrical Demand (kWh per year)
Accessory Dwelling Units	47,675.90
Single-Family Housing	411,955.00
Multifamily Units	126,011.00
Total	**585,641.90**

Notes:
[1] Land use type was taken from the CalEEMod modeling and represents the closest land use to what is in the Proposed Project.
kWh = kilowatt-hour
Source: See Appendix C for details.

As shown in Table 3.15-7, the Proposed Project is estimated to have a total electrical demand of approximately 585,642 kWh per year. By comparison, in 2017, PG&E supplied 82,224 million kWh of electricity to customers while MCE projects approximately 5,275 million kWh of electricity to be consumed (CEC 2018a; MCE 2019). Therefore, the Proposed Project would not result in a wasteful use of energy. Impacts related to operational electricity use would be **less than significant**.

Natural Gas

Natural gas would be directly consumed throughout operation of the Proposed Project, primarily through building heating and fireplace (only natural gas fireplaces are assumed) options for homes. As described above and consistent with electricity use, the Proposed Project's natural gas use was estimated using CalEEMod.

Table 3.15-8, Estimated Natural Gas Demand, shows the estimated natural gas use (therms per year) for Proposed Project operation.

Table 3.15-8
Estimated Natural Gas Demand – Project Operation

Land Use Type[1]	Estimated Natural Gas Demand (therms per year)
Accessory Dwelling Units	1,052.14
Single-Family Housing	13,633.90
Multi-Family Units	4,486.15
Total	**19,172.19**

Note:
[1] Land use type was taken from the CalEEMod modeling and represents the closest land use to what is in the Proposed Project.
Source: See Appendix C for details.

As presented in Table 3.15-8, the Proposed Project is estimated to use approximately 19,172 therms of natural gas per year. By comparison, in 2017, PG&E supplied 4,715 million therms of natural gas to customers (CEC 2018c). Therefore, natural gas consumption impacts would be **less than significant.**

Petroleum

The majority of fuel consumption resulting from the Proposed Project's operational phase would be attributable to the use of resident, visitor, and delivery motor vehicles traveling to and from the Project site, as well as fuels used for alternative modes of transportation that may be used by residents, visitors, and deliveries.

Calculations for annual mobile-source fuel consumption are provided in Table 3.15-9, Mobile Source Fuel Consumption – Operation.

Table 3.15-9
Mobile Source Fuel Consumption – Proposed Project Operation

Fuel	Vehicle MT CO_2	kg CO_2/Gallon	Gallons
Gasoline	510.16	8.78	58,104.81
Diesel	39.04	10.21	3,823.75
		Total	**61,928.56**

Notes: CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
Sources: See Appendix C for details (mobile source CO_2); The Climate Registry 2020 (kg/CO_2/gallon).

As shown in Table 3.15-8, mobile sources from Proposed Project operation would result in approximately 58,105 gallons of gasoline per year and 3,824 gallons of diesel consumed per year. By comparison, California as a whole consumed approximately 16 billion gallons of petroleum in 2017 (CEC 2018a).

Over the lifetime of the Proposed Project, the fuel efficiency of the vehicles being used by residents and visitors is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the Project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the numbers of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). Additionally, in response to SB 375, CARB adopted the goal of reducing per-capita GHG emissions from 2005 levels by 10% by 2020, and 19% by 2035 for light-duty passenger vehicles in the planning area for the Association of Bay Area Governments. As such, Proposed Project operation is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, although the Proposed Project would increase petroleum use during operation, the use would be a small fraction of the statewide use and due to efficiency increases, diminish over time. Given these considerations, petroleum consumption associated with the Proposed Project operation would not be considered inefficient or wasteful and impacts would be **less than significant**.

Mitigation Measures

None required.

3.15-2: Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? This impact would be less than significant.

The Proposed Project is required to meet Title 24 and California Green Building Standards Code (CALGreen) standards to reduce energy demand and increase energy efficiency. According to the CEC, single-family homes built under the 2019 standards would use approximately 7% less energy than those built under the 2016 standards. The 2019 standards would also require the installation of rooftop solar for all new homes under three stories in height. With the inclusion of solar, homes would use approximately 53% less energy compared with the 2016 standards (CEC 2018e). In addition, the 2019 standards would include improvements to residential building's thermal envelope through high performance attics, walls and windows which will reduce energy consumption. Therefore, the Proposed Project would provide opportunities for improved energy efficiency that would support state and local plans for increasing renewable energy efficiency. For the reasons stated, the Proposed Project would not

conflict with or obstruct a state or local plan for renewable energy or energy efficient, and impacts would be **less than significant**.

Mitigation Measures

None required

3.15.4 Cumulative Impacts

The cumulative context for energy resources is development that would be allowed under the City's 1993 General Plan. Potential cumulative impacts on energy would result if the Proposed Project, in combination with past, present, and future projects, would result in the wasteful or inefficient use of energy. This could result from development that would not incorporate sufficient building energy efficiency features, would not achieve building energy efficiency standards, or would result in the unnecessary use of energy during construction and/or operation.

3.15-3: Would the Proposed Project contribute to an increase in wasteful, inefficient or unnecessary consumption of energy resources during Project construction or operation? The Project's contribution would not be considerable.

Past, present, and future projects within the areas serviced by the energy service providers could cumulatively increase the use of energy resources. Projects that include development of large buildings or other structures that could have the potential to consume energy in an inefficient manner would have the potential to contribute to a cumulative impact. Projects that would mostly include construction, such as transportation infrastructure, could also contribute to a cumulative impact; however, the impact of these projects would be limited because they would typically not involve substantial ongoing energy use. Other development projects within the region would result in incremental increases in long-term energy consumption similar to the Proposed Project through the introduction of new population to the region. Each of these projects, however, would be required to comply with local and state regulations for reducing energy consumption and increasing energy efficiency during operation. Nonetheless, the overall increase in demand for energy resources is a potentially significant cumulative impact.

Similar to the Proposed Project, cumulative projects would be subject to CALGreen or stricter local regulations which provides energy efficiency standards for commercial and residential buildings. CALGreen would implement increasingly stringent energy efficiency standards that would require the Proposed Project and the cumulative projects to minimize the wasteful and inefficient use of energy. In addition, cumulative projects would be required to meet or exceed the Title 24 building standards, further reducing the inefficient use of energy. Future development would also be required to meet even more stringent requirements, including the objectives set forth in the AB 32 Scoping Plan (CARB 2017), which would seek to make all

newly constructed residential homes zero net energy consumers by 2020, and all new commercial buildings Zero-Net-Energy consumers by 2030. Furthermore, various federal and state regulations, including the Low Carbon Fuel Standard, Pavley Clean Car Standards, and Low Emission Vehicle Program, would serve to reduce the transportation fuel demand of cumulative projects.

In summary, with adherence to the increasingly stringent building and vehicle efficiency standards the Proposed Project would reduce energy consumption and would not contribute to a cumulative impact to the wasteful or inefficient use of energy. As such, the Proposed Project would not result in a cumulatively considerable contribution to a potentially significant cumulative impact and the Proposed Project's contribution is less than considerable resulting in a **less-than-significant cumulative impacts.**

Mitigation Measures

None required

3.15.5 References

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CHAPTER 4
CEQA CONSIDERATIONS

4.0 INTRODUCTION

Section 15126 of the California Environmental Quality Act (CEQA) Guidelines requires that all aspects of a project must be considered when evaluating its impact on the environment, including planning, acquisition, development, and operation. As part of this analysis, the Environmental Impact Report (EIR) must also identify (1) significant environmental effects of the project, (2) significant environmental effects that cannot be avoided if the project is implemented, (3) significant irreversible environmental changes that would result from implementation of the project, (4) growth-inducing impacts of the project, and (5) alternatives to the project (evaluated in Chapter 5, Project Alternatives).

As noted throughout this EIR, the proposed Hunter Subdivision Project (Proposed Project) is requesting approval of a Tentative Subdivision Map. At this time the applicant is not requesting approval of entitlements that would enable development to proceed if the Proposed Project is approved. Subsequent discretionary actions and approvals would be required by the City of St. Helena (City) in order for development to be permitted.

4.1 SIGNIFICANT ENVIRONMENTAL EFFECTS

Chapter ES, Executive Summary, and Sections 3.1 through 3.15 of this Draft EIR provide a comprehensive identification of the Proposed Project's potentially significant environmental effects, including the level of significance both before and after mitigation.

4.2 SIGNIFICANT AND UNAVOIDABLE ENVIRONMENTAL IMPACTS

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The environmental effects of the Proposed Project on various aspects of the environment are discussed in detail in the technical sections contained in Chapter 3, Environmental Analysis, of this Draft EIR. There are two significant and unavoidable transportation impacts that cannot be avoided if the Proposed Project is approved as described in Section 3.14, Transportation and Circulation. The remainder of Proposed Project impacts can be mitigated to a less-than-significant level through the adoption of recommended mitigation measures or compliance with existing requirements or laws.

4.3 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL IMPACTS

Section 15126.2 (d) of the CEQA Guidelines requires a discussion of any significant irreversible environmental change that would be caused by a project. Generally, a project would result in significant irreversible changes if:

- The primary and secondary impacts would generally commit future generations to similar uses (such as highway improvement that provides access to a previously inaccessible area);
- The project would involve a large commitment of nonrenewable resources (CEQA Guidelines Section 15126.2(d));
- The primary and secondary impacts would generally commit future generations to similar uses;
- The project would involve uses in which irreversible damage could result from any potential environmental accidents associated with the project;
- The project would involve a large commitment of nonrenewable resources; or
- The proposed consumption of resources is not justified (e.g., the project involves the wasteful use of energy).

Implementation of the Proposed Project would result in the long-term commitment of resources of the Project site to urban land use. Future development of the Project site would likely result in or contribute to the following irreversible environmental changes:

- Conversion of undeveloped land currently partially used as a vineyard. Approximately 16.9 acres of undeveloped land would be converted to urban uses, thus precluding other alternate land uses in the future.
- Irreversible consumption of energy and natural resources associated with the future use of the site.

Development of the Proposed Project would result in the commitment of the Project site to urban development, thereby precluding other uses for the lifespan of the Proposed Project. Restoration of the site to pre-developed conditions would not be feasible given the degree of disturbance, the urbanization of the area, and the level of capital investment.

Resources that would be permanently and continually consumed by Proposed Project implementation include water, electricity, natural gas, and fossil fuels. Wood products, asphalt, and concrete would be used in construction along with gas and diesel fuel. With respect to operational activities, compliance with all applicable state and local building codes, as well as mitigation measures, planning policies, and standard conservation features, would ensure that resources are conserved to the maximum extent possible. The Proposed Project would

incorporate a number of sustainable practices that reduce the consumption of energy and water. Nonetheless, construction activities related to the Proposed Project would result in the irretrievable commitment of nonrenewable energy resources, primarily in the form of fossil fuels, natural gas, and gasoline and diesel for automobiles and construction equipment.

The CEQA Guidelines also require a discussion of the potential for irreversible environmental damage caused by environmental accidents associated with the Proposed Project. While the Proposed Project would result in the use, transport, storage, and disposal of minor amounts of hazardous materials during Proposed Project construction and operation, as described in Section 3.8, Hazards and Hazardous Materials, all such activities would comply with applicable local, state and federal laws related to the use, storage and transport of hazardous materials, which significantly reduces the likelihood and severity of accidents that could result in irreversible environmental damage. The Proposed Project itself does not include any uniquely hazardous uses that would require any special handling or storage. Further, the Proposed Project does not contain any industrial uses that would use or store acutely hazardous materials.

Implementation of the Proposed Project would result in the long-term commitment of resources to urban development. The most notable significant irreversible impacts include the use of non-renewable and/or slowly renewable natural and energy resources, such as lumber and other forest products and water resources during construction activities. Operations associated with future uses would also consume natural gas and electricity. These irreversible impacts, which are unavoidable consequences of urban growth, are described in detail in the appropriate sections of this Draft EIR (see Chapter 3).

4.4 GROWTH-INDUCING IMPACTS

As required by Section 15126.2(e) of the CEQA Guidelines, an EIR must discuss ways in which a project could foster economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Also, the EIR must discuss the characteristics of the project that could encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. Growth can be induced in a number of ways, such as through the elimination of obstacles to growth, the stimulation of economic activity within the region, or the establishment of policies or other precedents that directly or indirectly encourage additional growth. Under CEQA, this growth is not to be considered necessarily detrimental, beneficial, or of significant consequence. Induced growth would be considered a significant impact if it can be demonstrated that the potential growth, directly or indirectly, significantly affects the environment.

In general, a project could foster spatial, economic, or population growth in a geographic area if the project removes an impediment to growth (e.g., the establishment of an essential public

service, the provision of new access to an area, or a change in zoning or General Plan amendment approval), or economic expansion or growth occurs in an area in response to the project (e.g., changes in revenue base, employment expansion). These circumstances are further described below.

- **Elimination of Obstacles to Growth**: This refers to the extent to which a proposed project removes infrastructure limitations or provides infrastructure capacity (e.g., constructing new roads or extending public utilities), or removes regulatory constraints that could result in growth unforeseen at the time of project approval.
- **Economic Effects**: This refers to the extent to which a proposed project could cause increased activity in the local or regional economy. Economic effects can include such effects as the "multiplier effect." A "multiplier" is an economic term used to describe interrelationships among various sectors of the economy. The multiplier effect provides a quantitative description of the direct employment effect of a project, as well as indirect and induced employment growth. The multiplier effect acknowledges that the on-site employment and population growth of each project is not the complete picture of growth caused by the project.

Elimination of Obstacles to Growth

The elimination of either physical or regulatory obstacles to growth is considered to be a growth-inducing effect, though not necessarily a significant one. A physical obstacle to growth typically involves the lack of public service infrastructure. The extension of public service infrastructure, including roadways, water mains, and sewer lines into areas that are not currently provided with these services would be expected to support new development. Similarly, the elimination or change to a regulatory obstacle, including existing growth and development policies, could result in new growth. Because the Project site is located within the City's Urban Limit Line and existing services are stubbed to the site, elimination of obstacles to growth is not a factor for this Proposed Project.

Removal of Infrastructure Limitations or Provision of Capacity

The elimination of physical obstacles to growth is considered a growth-inducing effect, although not necessarily a significant one.

The physical constraints to growth in the vicinity of the Project site include existing residential development to the south, southwest, west and southeast, which would preclude development immediately to the south, southwest, and southeast of the site, and existing office uses to the west, which would preclude inducing growth to the west of the site. Utility infrastructure is also stubbed to the site so no off-site connections would be required. The connection to existing City

infrastructure to serve the Project site would not induce growth in this area. Due to the location of the Project site within the City's Urban Limit Line and access to utilities, the Proposed Project would not eliminate any constraints that are currently obstacles to growth in this portion of the City that would hasten development of this area.

The City's Residential Growth Management System is no longer enforceable due to the passage of SB 330 (see Gov't Code sec. 66300) otherwise known as the Housing Crisis Act of 2019. This act prevents cities from establishing or implementing any provision that imposes a limit on the number of housing units that can be approved or constructed annually or for some other period. Therefore, the City can no longer limit residential growth to approximately two percent per year (no more than nine building permits for market rate housing could be issued each year), while providing for both market rate and affordable housing units (Municipal Code Chapter 17.152).

Economic Effects

Implementation of the Proposed Project would affect the local economy through the construction of new residences that would require construction workers during the short-term and would encourage people to either relocate or move to the City to take advantage of proximity to local shops, restaurants, and other amenities in nearby downtown.

Additional local employment can be generated through the multiplier effect, as discussed previously in this chapter. The multiplier effect tends to be greater in regions with larger, diverse economies due to a decrease in the requirement to import goods and services from outside the region.

Two different types of additional employment are tracked through the multiplier effect. *Indirect* employment includes those additional jobs that are generated through the expenditure patterns of direct employment associated with the Proposed Project. Indirect jobs tend to be in relatively close proximity to the places of employment and residence.

The multiplier effect also calculates *induced* employment. Induced employment follows the economic effect beyond the expenditures of the residents within a project area to include jobs created by the stream of goods and services necessary to support residences within the Project site. When a manufacturer buys or sells products, the employment associated with those inputs or outputs are considered *induced* employment.

For example, when an employee of the Proposed Project goes out to lunch, the person who serves the employee lunch holds a job that is *indirectly* related to the Proposed Project. When the server then goes out and spends money in the economy, the jobs generated by this third-tier effect are considered *induced* employment.

The multiplier effect also considers the secondary effect of employee expenditures. Thus, it includes the economic effect of the dollars spent by those employees and residents who support the employees of the Proposed Project.

Increased future employment generated by employee spending ultimately results in physical development of space to accommodate those employees. It is the characteristics of this physical space and its specific location that will determine the type and magnitude of environmental impacts of this additional economic activity. Although the economic effect can be predicted, the actual environmental implications of this type of economic growth are too speculative to predict or evaluate, since they can be spread throughout the City, Napa County, and beyond.

Impacts of Induced Growth

The growth induced directly and indirectly by the Proposed Project could contribute to the environmental impacts, discussed in Chapter 3, in the City and the County, as well as the greater regional area. Any such environmental effects, however, are too diffuse and speculative to predict or describe with any particularity.

Indirect and induced population growth in the City would further contribute to the loss of open space because it would encourage the conversion of undeveloped land to urban uses for additional housing and infrastructure. However, it is assumed this new growth would occur within areas of the City designated and zoned for development or planned for potential future urban development. The City has designated areas for future development in order to protect areas of active agriculture, also within the incorporated City but outside of the Urban Limit Line. Again, however, the particular open space that might get converted cannot be predicted with any certainty, all such conversions to urban land use would occur within areas planned for growth designated in the City's General Plan. Development of the property to the north of the Project site is outside of the City's Urban Limit Line and would require a general plan amendment and compliance with CEQA to evaluate potential impacts.

In summary, although the Proposed Project can be said to induce growth, the consequences of such growth-inducement are too speculative to meaningfully predict and, furthermore, due to the designation of the Project site for future residential development in the City's 1993 General Plan and 2019 General Plan[1], implementation of the Proposed Project would not be considered growth inducing. Growth-inducing effects are therefore considered **less than significant.**

[1] Also known as the "St Helena General Plan Update 2040," the 2019 is referred to in this EIR by the year of its adoption.

4.5 ENERGY USAGE

Measures intended to reduce unnecessary or inefficient use of resources or energy consumption are incorporated into the Title 24 and CALGreen standards, which the Proposed Project would be required to comply with. Implementation of the Proposed Project would result in the commitment of limited, renewable resources such as lumber and water. In addition, development allowed under both the 1993 General Plan and the 2019 General Plan would irretrievably commit nonrenewable resources for the construction and maintenance of buildings, infrastructure, and roadways. These non-renewable resources include mined materials such as sand, gravel, steel, copper, and other metals. The City recognized that buildout of the General Plan also represents a long-term commitment to the consumption of fossil fuels, natural gas, diesel and gasoline. Increased energy demands would be used for construction, lighting, heating, and cooling of residences, and transportation of people within, to, and from the Project site. The Proposed Project's energy requirements are analyzed in Section 3.15 of this Draft EIR. The analysis determined that the Proposed Project's use of energy resources, including electricity, natural gas, and petroleum, would not be wasteful, inefficient or unnecessary during Proposed Project construction or operation. Please see Section 3.15, Energy, for more information on energy demands of the Proposed Project.

4.6 CUMULATIVE IMPACTS

CEQA requires that an EIR contain an assessment of the cumulative impacts that could be associated with the Proposed Project. This assessment involves examining Proposed-Project-related effects on the environment in the context of similar effects that have been caused by past or existing projects, and the anticipated effects of future projects. As indicated in the CEQA Guidelines, the discussion of cumulative impacts need not provide the same level of detail as Proposed-Project-related impacts. The discussion should be guided by "standards of practicality and reasonableness" (CEQA Guidelines, Section 15130(b)). Although project-related impacts can be individually minor, the cumulative effects of these impacts, in combination with the impacts of other projects, could be significant under CEQA and must be addressed (14 CCR Section 15130(a)). Where a lead agency concludes that the cumulative effects of a project, taken together with the impacts of other closely related past, present, and reasonably foreseeable probable future projects are significant, the lead agency then must determine whether the project's incremental contribution to such significant cumulative impact is "cumulatively considerable" (and thus significant in and of itself).

Cumulative Context

To ensure an adequate discussion of cumulative impacts is included in an EIR, CEQA allows the lead agency to use either a list of past, present, and probable future projects (including

those projects outside of the control of the lead agency), or projections included in an adopted local, regional, or statewide plan like a general plan (CEQA Guidelines, Section 15130(b)(1)). The general cumulative impact context for evaluating cumulative impacts for the majority of the technical issue areas evaluated in Chapter 3 of this Draft EIR considers buildout of the City's 1993 General Plan because this General Plan was in effect when the Proposed Project application was deemed complete in September 2011, or evaluates the potential loss of resources on a much broader, regional scale. The cumulative impact analyses in this Draft EIR thus do not rely on any list of specific pending, or reasonably foreseeable development proposals in the general vicinity of the Project site or within the City. The City updated the General Plan in 2019. However, since the Proposed Project application was submitted in September 2010 and deemed complete by the City in 2011, this EIR uses the 1993 General Plan as the applicable general plan for the purposes of evaluating the Proposed Project. Nonetheless, this EIR also evaluates consistency with the 2019 General Plan for informational purposes and the cumulative analysis will note any changes, if relevant between buildout assumptions under the 1993 General Plan as compared to the 2019 General Plan.

It is important to note that the basis of the cumulative analysis varies by technical area. For example, traffic and traffic-related air emissions and noise analyses assume development that is planned and/or anticipated in the City, as well as the surrounding unincorporated area, because each contributes to traffic on local and regional roadways that is quantifiable. Operational air quality impacts are evaluated against conditions in the City and surrounding areas within the San Francisco Bay Area Air Basin. The technical sections in Chapter 3 evaluate the Proposed Project's cumulative impacts at the end of the impact analysis. The cumulative analysis in each of the technical sections evaluates the Proposed Project's contribution to the cumulative scenario to determine if the Proposed Project's contribution to an existing significant cumulative impact would be considerable resulting in an impact. A description of the cumulative context for each issue area evaluated is included in the cumulative impacts at the end of each technical section of Chapter 3.

CHAPTER 5
PROJECT ALTERNATIVES

5.0 INTRODUCTION

The purpose of the alternatives evaluation in an Environmental Impact Report (EIR), as stated in Section 15126.6(c) of the California Environmental Quality Act (CEQA) Guidelines, is to ensure that "[t]he range of potential alternatives to the proposed project shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects" identified under the proposed project. Pursuant to CEQA Guidelines, Section 15126.6, alternatives to the proposed Hunter Subdivision Project (Proposed Project) are presented in this Draft EIR to provide the public, public agencies and decision makers with a range of possible alternatives to the Proposed Project to consider. The CEQA Guidelines state that an EIR shall describe a *reasonable* range of alternatives that would avoid or substantially lessen any significant effects of the project but need not consider every conceivable alternative. The CEQA Guidelines further state that "the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly" (CEQA Guidelines, Section 15126.6(b)). Therefore, an EIR must describe a range of reasonable alternatives to the proposed project (or to its location) that could feasibly attain most of the basic objectives of the project. The feasibility of an alternative may be determined based on a variety of factors, including, but not limited to, site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and site accessibility and control (CEQA Guidelines, Section 15126.6(f)(1)).

Alternatives in an EIR must be potentially feasible (CEQA Guidelines, Section 15126.6(a)). Agency decision makers ultimately decide what is "actually feasible." (*California Native Plant Society v. City of Santa Cruz* (2009) 177 Cal. App. 4th 957, 981 (*CNPS*).) Under CEQA, "feasible" is defined as capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors (CEQA Guidelines, Section 15364). The concept of "feasibility" also encompasses the question of whether a particular alternative or mitigation measure promotes the underlying goals and objectives of a project. (*Sierra Club v. County of Napa* (2004) 121 Cal.App.4th 1490, 1506-1509; *CNPS*, *supra*, 177 Cal. App. 4th at p. 1001; *In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings* (2008) 43 Cal.4th 1143, 1165, 1166.) Moreover, "'feasibility' under CEQA encompasses 'desirability' to the extent that desirability is based on a reasonable balancing of the relevant economic, environmental, social, legal, and technological factors." (*City of Del Mar v. City of San Diego* (1982) 133 Cal.App.3d 410, 417.)

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the proposed project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the proposed project. The alternatives discussion is intended to focus on alternatives to the project or its location that are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives as listed in Chapter 2, Project Description, and in this chapter of this Draft EIR.

The lead agency's decision-making body, in this case the St. Helena City Council, has the discretion to select a Proposed Project alternative in lieu of the Proposed Project. If this were to occur, the City Council would need to ensure that the level of detail included in the alternatives analysis is adequate and that there would not be any new or significant impacts as a result of selecting the alternative. The required Findings of Fact and Mitigation Monitoring Plan (MMP) would need to be prepared that identifies the alternative as the project selected for approval. It is anticipated that if one of the Proposed Project alternatives is selected, the mitigation measures identified for the Proposed Project would not change and would still be required and, depending on the alternative selected, may require additional mitigation measures where impacts are more severe than the Proposed Project.

This chapter identifies the Proposed Project objectives, describes the Proposed Project alternatives, and evaluates the comparative effects of the alternatives relative to the Proposed Project. As required under Section 15126.6(e) of the CEQA Guidelines, the environmentally superior alternative is identified and included at the end of this chapter.

Significant and Unavoidable Impacts

The Proposed Project would result in the following significant and unavoidable transportation impacts. There is no feasible mitigation available to reduce these impacts to less than significant.

- The Proposed Project would generate an increase in project-specific vehicle miles traveled (VMT) that would exceed the Office of Planning and Research's (OPRs) threshold of 15% below that of existing development.
- Under cumulative conditions the Proposed Project would generate an increase in VMT that would exceed the threshold.

Project Objectives

Pursuant to CEQA Guidelines, Section 15124(b), a clear statement of project objectives is required. The Proposed Project includes the following project objectives:

- Subdivide the site consistent with the City's General Plan and Zoning for the site to accommodate residential development.
- Provide opportunities to develop a variety of housing types, including multi-family, single-family, and accessory dwelling units, affordable to a range of incomes including, very low, low and moderate-income households.
- Provide opportunities to contribute to the provision of workforce and affordable housing consistent with the City's adopted Housing Element and the Regional Housing Needs Assessment (RHNA) approved by the Association of Bay Area Governments (ABAG).
- Minimize traffic-related environmental impacts, such as noise, air quality and greenhouse gases by lowering commute patterns for St. Helena workers by providing more local housing opportunities.
- Support alternative transportation by providing a pedestrian and bicycle linkages through St. Helena, eventually connecting the regional Vine Trail from Calistoga to the Vallejo Ferry.
- Exceed the City's green building ordinance (Municipal Code Chapter 15.53) and incorporate sustainable design features including water conservation measures, drought resistant landscaping with low flow watering systems, south and west side tree placement to reduce reliance on air conditioning units, and pre-wiring for photovoltaic systems.
- Implement the General Plan Circulation Element by completing the planned extension of Starr Avenue and the partial planned extension of Adams Street from where Adams Street terminates to connect to the Project site.
- Minimize City water use by continuing the use of an existing on-site water well for irrigation of Project landscaped areas.

Alternatives Considered but Dismissed from Further Consideration

As noted previously, the purpose of an alternatives analysis is to develop alternatives to the Proposed Project that substantially lessen at least one of the significant environmental effects identified as a result of the Project, while still meeting most, if not all, of the basic Proposed Project objectives. Proposed Project alternatives that would lessen the severity of some of the impacts identified under the Proposed Project are addressed later in this chapter.

One of the requirements for an alternatives analysis that is set forth in the CEQA Guidelines is identification of alternatives that were considered by the lead agency but rejected as infeasible

during the scoping process. As stated in Section 15126.6(c) of the CEQA Guidelines, the EIR should briefly explain the reasons underlying this determination. Among the factors that may be used to eliminate alternatives from detailed consideration in the EIR are:

(i) Failure to meet most of the basic project objectives,

(ii) Infeasibility, or

(iii) Inability to avoid significant environmental impacts (CEQA Guidelines Section 15126.6(c))

Section 15126.6(f)(1) of the CEQA Guidelines states that, “among the factors that may be taken into account when addressing the feasibility of alternatives are site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and whether the applicant can reasonably acquire, control or otherwise have access to the alternative site (or the site is already owned by the proponent).” However, as stated in this subsection, no single factor establishes a fixed limit on the scope of reasonable alternatives.

An alternate site or off-site alternative was determined to be infeasible for the Proposed Project because the Project applicant owns the Project site and it would not be feasible to acquire, control or otherwise have access to a new property within the City large enough to accommodate the Proposed Project. Therefore, an off-site or alternate Proposed Project location was dismissed from further evaluation.

A reduced density alternative was considered but dismissed because it does not avoid or reduce any potentially significant impacts and would not avoid any health and safety concerns required for the City to make findings under Section 15041 of the CEQA Guidelines and Government Code Section 65589.5(j).

Lastly, a mixed-use alternative that includes commercial uses in addition to residential was also considered and dismissed because it would not be consistent with the underlying land use designation and zoning and would require a General Plan Amendment and rezone. Therefore, this alternative was considered but ultimately dismissed from further review.

5.1 ALTERNATIVES CONSIDERED IN THIS EIR

This section provides a description of the alternatives to the Proposed Project analyzed in this Draft EIR and evaluates how specific impacts differ in severity from those associated with the Proposed Project. For purposes of this analysis, the potentially significant impacts identified under the alternatives analysis are assumed to be fully mitigated through compliance with mitigation measures identified in the Executive Summary chapter in Table ES-1 and in Sections

3.1 through 3.15 included in Chapter 3, which contains the environmental analysis of the Proposed Project.

The Proposed Project alternatives identified herein address the significant construction-related and operational impacts (before mitigation) identified for the Proposed Project including aesthetics/visual resources, biological resources, cultural resources, geology and soils, noise and vibration, and traffic and circulation. Thus, the alternatives developed for the Proposed Project contemplate a change in land uses to address these impacts. In many instances, the impacts are virtually identical to the Proposed Project and are described as such.

This Draft EIR has incorporated a reasonable range of Proposed Project alternatives that, collectively, attain a majority of the Proposed Project objectives in a reasonable manner while reducing the severity of the significant impacts (before mitigation) identified under the Proposed Project.

CEQA Guidelines Section 15126.6(e) requires that an EIR include an alternative that describes what would reasonably be expected to occur on the property in the foreseeable future if the Proposed Project were not approved, based on current plans and consistent with available infrastructure and community services (i.e., "No Project" alternative). For projects other than a land use plan (for example, a development project on an identifiable property), the "No Project" alternative is considered to be a circumstance under which the project does not proceed. (CEQA Guidelines Section 15126.6(e)(3)(A-B)). "If disapproval of the project under consideration would result in predictable actions by others, such as the proposal of some other project, this 'no project' consequence should be discussed. … [W]here failure to proceed with the project will not result in preservation of existing environmental conditions, the analysis should identify the practical result of the project's non-approval and not create and analyze a set of artificial assumptions that would be required to preserve the existing physical environment." Because the Proposed Project is on land that is designated and zoned for housing, it would be artificial to assume that the Project site's existing physical environment would be preserved by rejection of the Proposed Project. Therefore, this EIR includes two "No Project" alternative analyses: (1) the scenario where the Project does not proceed and the Project site remains in its existing undeveloped condition is evaluated as the "No Project/No Development Alternative," and (2) the potential scenario where the Project site is used and developed in accordance with the City's existing land use plans (2019 General Plan) is evaluated as the "No Project/General Plan Alternative."

The alternatives to the Proposed Project analyzed in this Draft EIR are as follows:

- Alternative 1: No Project/No Development
- Alternative 2: No Project/General Plan

- Alternative 3: Park/Open Space Preserve
- Alternative 4: Increased Density/Affordable Housing

Alternative 1: No Project/No Development Alternative

Description

The No Project/No Development Alternative considers the effects of forgoing the Project entirely and leaving the Project site in its current undeveloped condition. Under the No Project/No Development Alternative, the Proposed Project would not be approved or constructed. Under this alternative, the Project site would retain its current land use designation and zoning consistent with both the 1993 General Plan and the City's current 2019 General Plan. The No Project/No Development Alternative allows decision-makers to compare the impacts of the Proposed Project to retaining the existing condition of the site. The No Project/No Development Alternative describes the environmental conditions that exist at the time that the environmental analysis commenced (CEQA Guidelines, Section 15126.6 (e)(2)).

This alternative would not meet the City's General Plan policies or Project objectives, or state policies of promoting development of new housing, including affordable housing. For policy reasons, and because the No Project/No Development Alternative would fail to meet any of the basic objectives of the Project or of the City's General Plan, this alternative could be rejected in favor of the Proposed Project.

Comparative Analysis of Environmental Effects

The No Project/No Development Alternative would produce no changes on the Project site, because the site would remain in its current undeveloped condition, effectively eliminating the Project impacts discussed in this Draft EIR.

There would be no change to visual conditions at the site, so no mitigation would be required related to spillover light. There would be no air emissions associated with Project construction and operation and there would be no increase of any emissions, including ozone, $PM_{2.5}$, or $PM_{10,}$ which are designated nonattainment in the San Francisco Bay Area Air Basin (SFBAAB), that could substantially contribute to a potential violation of applicable air quality standards or to nonattainment conditions. There would be no increase in greenhouse gases (GHG), energy, or demand for public service or utilities. There would be no land disturbance so there would be no impacts to biological, cultural, or geological resources, or any impacts related to hazardous materials, so no mitigation would be required. Additionally, there would be no changes in ambient noise levels associated with Project construction and operation.

Lastly, there would be no increase in the number of vehicles accessing the site and on area roadways and intersections. Thus, there would be no impact associated with the Project's increase in VMT.

Ability to Meet Proposed Project Objectives

The No Project/No Development Alternative would not achieve any of the Project objectives because development would not occur.

Alternative 2: No Project/General Plan Alternative

Description

Under this alternative, it is assumed the Project would be developed consistent with the underlying MDR land use designation and MR zoning which allows development of the Project site with residential uses up to a maximum density of 12 dwelling units/acre (du/ac) under the 1993 General Plan MDR designation which was revised to 16 du/ac under the 2019 General Plan consistent with the MR zoning, which permits a maximum density of 16 du/ac. For the purposes of this alternative a density of 9 du/ac was assumed for a total of 152 single-family residential units. Based on the number of units this alternative would result in a population of 372 residents, an increase of 159 residents as compared to the Project. It is assumed Starr Avenue and Adams Street would both be extended to connect to the Project site and the street and lot layout would be very similar to the Project with the exception of the 3.4-acre portion of the site currently designated for multifamily units (Lot 52). This portion of the Project site would be configured to accommodate single-family residences.

Comparative Analysis of Environmental Effects

Due to the denser development and increased number of residential units, it is anticipated that impacts associated with air quality, greenhouse gases, energy, public utilities, population and housing, and noise would be increased. It is anticipated the same mitigation measures for impacts to nesting birds and bats (biological) and the potential to unearth any previously unknown historic, archeological, or paleontological resource (cultural, geology and soils), potential soil contamination from agricultural chemical residues (hazards), and noise from construction equipment would be still be required. The potential impacts are compared below.

Impacts Identified as Being the Same or Similar to the Proposed Project

Under this alternative, impacts to the loss of agricultural land would remain less than significant, the same as the Proposed Project because the entire site would be developed. There would be

an increase in lights, the same as the Proposed Project, so mitigation would be required to address spillover light (AES-1).

Biological impacts related to special-status species, riparian habitat, sensitive natural communities, migratory wildlife corridors, wildlife nursery sites, tree preservation policies, and any other conservation plans would remain the same as the Proposed Project. This alternative would still require implementation of Mitigation Measures BIO-1 through BIO-3 to minimize impacts to bats and nesting birds and erosion impacts. This alternative would also still require development over the existing seasonal wetlands in order to accommodate single-family development. Thus, impacts to the seasonal wetlands would total 0.7 acres, the same as the Proposed Project.

Cultural and geological impacts would be similar to the Proposed Project. Ground disturbance would be performed in the same development area and mitigation would still be required to ensure that any historical, archaeological, and paleontological impacts are less than significant (Mitigation Measures CUL-1 and GEO-2). A design-level geotechnical report would also be required, per Mitigation Measure GEO-1 to ensure the homes are constructed consistent with any site-specific grading or foundation recommendations.

Because this alternative would still involve disturbance of site soils, soils testing for agricultural chemicals of concern would still be required as a condition of approval for construction and grading permits. Mitigation would still be required (Mitigation Measure HAZ-1) to ensure potential impacts would be less than significant.

It is assumed Starr Avenue and Adams Street would both be extended to connect to the Project site and the street and lot layout would be very similar to the Proposed Project with the exception of the 3.4-acre portion of the site currently designated for multifamily units. Internal roadways would be similar and still be designed consistent with all applicable City street design criteria and impacts would remain less than significant.

Impacts Identified as Being Less Severe than the Proposed Project

No impacts were identified as being less severe than the Proposed Project.

Impacts Identified as Being More Severe than the Proposed Project

The No Project/General Plan Alternative would include 152 single-family residential units and no multifamily units. This alternative would result in a population of 372 residents, an increase of 159 residents as compared to the Proposed Project. While air quality impacts would be slightly more severe, they would still be less than significant and would not require any mitigation. This would be the same for greenhouse gas emissions impacts and energy impacts.

Noise from construction equipment would be greater from the Proposed Project due to the increased amount of development and the nature of construction of single-family residences. Construction equipment would still need to be equipped with suitable exhaust and intake silencers, and stationary construction equipment would need to be located away from adjacent residential property boundaries as is practical, in accordance with Mitigation Measure NOI-1. This would ensure that noise impacts related to construction would still be less than significant. Noise impacts from operation as well as vehicle trips would also be slightly greater but would not be substantial enough to constitute significant impacts.

The increase in 159 residents would also increase the demand for water supply, wastewater conveyance and treatment, schools, and solid waste disposal. However, the increase in severity would not be great enough to constitute significant impacts. These impacts are described in further detail below.

For the Proposed Project, the water demand for single-family residences assumes eight persons per home, based on the City's demand factor of four bedrooms and two persons per bedroom for the market rate homes and two bedrooms for the affordable housing units, based on the Preliminary Water Calculations prepared for the Proposed Project (see Appendix J). The projected residential water demand for this alternative is shown in Table 5-1 below. With the City's demand factor assumption of eight occupants per single-family residence, the water demand calculation assumes this alternative would result in a total anticipated water demand of approximately 47.6 acre-feet (AF) per year. Water demand is expected to increase, but the same as the Proposed Project any development is required to offset its increase in water in compliance with the City's Water Neutral Ordinance. The same as the Proposed Project, all units would be designed to include efficient and lower-water-using fixtures and appliances and irrigation systems consistent with Green Building Standards Code (CAL Green Code) that requires the installation of water-efficient indoor infrastructure to conserve water. The landscape irrigation demand under this alternative would comply with the City's Model Water Efficient Landscape Ordinance (MWELO) as well. In addition, irrigation of public landscaping would be offset through planting of drought tolerant plants, water conservation measures, and use of the on-site well, the same as the Proposed Project.

Table 5-1
Alternative 2: No Project/General Plan Alternative Residential Water Demand

Fixture	Flow Rate gal/min or gal/flush	Flow Duration (min., flush, load, etc)	Daily Uses per Occupant	Number of Occupants[1]	Gallons per Day	Acre-feet Per Year
Showerheads	2	8	1	1,216	19,456	21.79
Sink Faucets	1.5	0.25	3	1,216	1,368	1.53
Kitchen Faucet	1.5	4	1	1,216	7,296	8.17
Toilet	1.3	1	3	1,216	4,742.4	5.31

Table 5-1
Alternative 2: No Project/General Plan Alternative Residential Water Demand

Fixture	Flow Rate gal/min or gal/flush	Flow Duration (min., flush, load, etc)	Daily Uses per Occupant	Number of Occupants[1]	Gallons per Day	Acre-feet Per Year
Clothes Washer	19.7	1	0.37	1,216	8,863.424	9.93
Dish Washer	6.3	1	0.1	1,216	766.08	0.86
				Total Water Demand	**42,491.9**	**47.59**

Note:
[1] For the purposes of determining the Proposed Project's water demand, the City's demand factor is based on the number of bedrooms and persons per bedroom, which differs from the City's persons per household (PPH) to determine the number of residents a residential project would generate, which is 2.45 PPH.
Source: Appendix J.

The water demand of 47.6 AF per year would also translate to 47.6 AF per year of wastewater demand, also expected to be higher than the Proposed Project but would not require mitigation.

This alternative is also expected to result in a slight increase in solid waste generation (see Table 5-2). The solid waste generation rates used for the Proposed Project are based on the U.S. Environmental Protection Agency (EPA) estimate of 0.0033 tons/day/dwelling unit for multi-family residential homes. This would result in a solid waste generation estimate of 0.234 tons per day, 0.277 tons greater than the Proposed Project's estimate. However, the amount of solid waste generated during operation would still be much less than the unused daily capacity of the Clover Flat landfill (425 tons per day), and therefore would not exceed the capacity of the landfill. The impact would remain less than significant and would not require mitigation.

Table 5-2
Alternative 2: No Project/No Action Alternative Projected Solid Waste Generation

Land Use	Generation Rate (tons/day/unit)	Waste Disposed (tons per day)
152 Single-family Residential Units	0.0033	0.502
	Total	**0.502**

Source: CalRecycle 2018.

Table 5-3 considers the increase in school-age children attending primary, elementary, middle and high schools. Student generation rates were derived from the SHUSD Facility Master Plan, which outlines expected growth in demand for school facilities associated with projected development and plans how to fund and respond to such growth. This alternative is expected to generate approximately 35 students in total, an increase of 7 students compared to the Proposed Project. This increase would not exceed the current capacity of schools within the SHUSD, and development under this alternative would still be required to pay the necessary school impact fees.

Table 5-3
Alternative 2: No Project/No Action Alternative Student Generation

Grades	Student Generation Rate (per total number of units)	Students Generated
K-2	0.058	8.816
3-5	0.080	12.16
6-8	0.088	13.38
9-12	0.088	15.84
	Total	**57**

Source: SHUSD 2010.

Because of the increased number of residential units, the Project's VMT would be greater than the Proposed Project and the impact would remain significant and unavoidable.

Ability to Meet Proposed Project Objectives

The No Project/General Plan Alternative would develop the site consistent with the underlying land use designation and zoning assuming ag a density of 9 du/ac and would complete the planned extensions of Adams Street and Starr Avenue. However, this alternative would not achieve the Proposed Project objective of developing a variety of housing types, including multifamily housing and ADUs. Housing would be less affordable to a range of incomes since development would be limited to single-family homes. This alternative would not minimize traffic-related environmental impacts due to the increase in units and residents. Overall, this alternative would not meet most of the Proposed Project objectives.

Alternative 3: Park/Open Space Preserve Alternative

Description

The Park Preserve/Open Space Alternative includes an approximately 1-acre park/open space that would preserve a majority of the on-site wetlands to help lessen impacts to seasonal wetlands (Impact 3.4-2), as shown on Figure 5-1, Park Preserve Alternative. To accommodate the park three lots would need to be removed (Lots 44, 45, 46) and vegetated swales to capture runoff would be located adjacent to developed areas. It is anticipated the park would be landscaped with native plants and may include a small tot lot or be left as passive open space. The remaining approximately 16-acres would be developed with approximately the same number of residential units as the Proposed Project and would maintain a density of 5.1 du/ac. The single-family lots would be slightly smaller than the Proposed Project and there could be an increase in the number of multifamily units. Site access and internal roads would essentially be the same as the Proposed Project. The same number of residents, 213, is conservatively assumed under this alternative, the same as the Proposed Project.

Comparative Analysis of Environmental Effects

Disturbance to the Project site to accommodate development would be slightly less as compared to the Proposed Project. Even though this alternative would result in a slightly smaller development footprint, it is anticipated construction-related impacts associated with potential impacts to biological, cultural, geological resources, hazardous materials, and noise would essentially remain the same as the Proposed Project, less-than-significant with mitigation. It is anticipated the same mitigation measures for impacts to nesting birds (biological) and the potential to unearth any previously unknown historic, archeological, or paleontological resource (cultural, geology and soils), and potential soil contamination from agricultural chemical residues (hazards) would be still be required. While there would still be impacts to two seasonal wetlands (0.006 of an acre), this alternative would minimize impacts to the 0.065 acre of seasonal wetlands at the site. The potential impacts are compared below.

Impacts Identified as Being the Same or Similar to the Proposed Project

The change in visual quality would be the same as the Proposed Project and the impact would remain less than significant. There would be an increase in lights, the same as the Proposed Project, so mitigation would be required to address spillover light (AES-1). Under this alternative, impacts to the loss of agricultural land would also remain less than significant.

Biological impacts related to special-status species, riparian habitat, sensitive natural communities, migratory wildlife corridors, wildlife nursery sites, tree preservation policies, and any other conservation plans would remain the same as the Proposed Project. This alternative would still require implementation of Mitigation Measures BIO-1 through BIO-3 to minimize impacts to bats and nesting birds and erosion impacts. Impacts related to jurisdictional wetlands are described further below, under “Impacts Identified as Being Less Severe than the Proposed Project.”

Cultural and geological impacts would be similar to the Proposed Project. The extent of ground-disturbance would be similar, albeit slightly less, and mitigation would still be required to ensure that any historical, archaeological, and paleontological impacts are less than significant (Mitigation Measures CUL-1 and GEO-2). A design-level geotechnical report would also be required, per Mitigation Measure GEO-1 to ensure the homes are constructed consistent with any site-specific grading or foundation recommendations.

Because this alternative would still involve disturbance of site soils, soils testing for agricultural chemicals of concern would still be required as a condition of approval for construction and grading permits. Mitigation would still be required (Mitigation Measure HAZ-1) to ensure potential impacts would be less than significant.

Noise from construction equipment would likely be similar to the Proposed Project. Construction equipment would still need to be equipped with suitable exhaust and intake silencers, and stationary construction equipment would need to be located away from adjacent residential property boundaries as is practical, in accordance with Mitigation Measure NOI-1. This would ensure that noise impacts would still be less than significant.

Under this alternative, impacts associated with air and GHG emissions due to construction and operation and increase in demand for public services, utilities and energy would remain less than significant, the same as the Proposed Project.

The potable water and landscape irrigation demand under this alternative would be very similar to the Proposed Project and would comply with the City's MWELO and Water Neutrality Ordinance and would be required to off-set the increase in water demand. Water and wastewater impacts would be less than significant, the same as the Proposed Project.

Because the same number of units would be developed the impact to VMT would remain the same as the Proposed Project, significant and unavoidable. Internal roadways would remain the same and still be designed consistent with all applicable City street design criteria and impacts would remain less than significant.

Impacts Identified as Being Less Severe than the Proposed Project

The Project site currently supports four seasonal wetlands for 0.07 acre and two agricultural ditches, as shown on Figure 3.4-2 in Section 3.4, Biological Resources. These features are anticipated to meet the criteria for jurisdictional waters of the United States.

With implementation of this alternative, the impact to seasonal wetlands would be less severe than the Proposed Project. The Park Preserve/Open Space Alternative includes an approximately 1-acre park that would preserve two of the larger wetland features to help reduce Impact 3.4-2. The area of impacted wetlands would be reduced to .006 acres rather than 0.07 acres from the Proposed Project. In order to ensure viability of the wetlands, vegetated swales would be located between the park and any developed uses. The swales would capture runoff from adjacent developed areas in order to maintain the water quality of the wetlands.

Impacts Identified as Being More Severe than the Proposed Project

No impacts were identified as being more severe than the Proposed Project.

Relationship to Proposed Project Objectives

The Park Preserve/Open Space Alternative would still manage to achieve all stated Proposed Project objectives. The main changes from this alternative would be a small decrease in the residential footprint and the avoidance of seasonal wetlands at the Project site. This alternative

would still subdivide the site consistent with the underlying land use designation and zoning, complete the planned extensions of Adams Street and Starr Avenue, provide a variety of housing types, including affordable housing, and provide more local housing opportunities.

Alternative 4: Increased Density/Affordable Housing Alternative

Description

The Increased Density/Affordable Housing Alternative includes the approximately 1-acre park to preserve a majority of the on-site seasonal wetlands with the remaining approximately 16-acres designated for up to 180 affordable housing units, assuming a density of 11.3 dwelling units per acre (du/ac) under the existing Medium Density Residential (MDR) land use designation (current zoning allows for a maximum density of 16.0 du/ac). The units would be attached housing (duplex or triplex) and would be 100% affordable. It is assumed buildings would be no taller than 30-feet, consistent with the underlying MR zoning. Under the technical guidance issued by the Office of Planning and Research, a 100% affordable housing project is exempt from the requirement to calculate VMT. Site access and internal roads would essentially be the same as the Proposed Project. Using the City's persons per household factor of 2.45 people per unit for medium/higher density residential land uses this alternative would generate 441 residents, an increase of 194 residents as compared to the Proposed Project.

Comparative Analysis of Environmental Effects

The Proposed Project includes a Tentative Subdivision Map to create 51 market-rate single-family residences (with ADUs on 11 of these lots) and 25 attached multifamily units. The Increased Density/Affordable Housing Alternative would increase the density from 5.1 du/ac to a density of 11.3 du/ac. All units would be attached housing (duplex or triplex) and would be 100% affordable. Due to the increase in residents, it is anticipated the increase in air pollutants and GHG emissions associated with operation would be slightly higher than the Proposed Project due to the increase in vehicle trips, as well as the demand for water supply, wastewater conveyance and treatment, schools, solid waste disposal, and energy. Construction and footprint-related impacts associated with biological, cultural, and geological resources, hazardous materials, and noise would essentially be the same as the Proposed Project, as these impacts would be less-than-significant with mitigation. It is anticipated the same mitigation measures for impacts to bats, and nesting birds (biological) and the potential to unearth any previously unknown historic, archeological, or paleontological resource (cultural, geology and soils), and potential soil contamination from agricultural chemical residues (hazards) would be still be required. This alternative would minimize impacts to on-site seasonal wetlands with inclusion of the 1-acre park, similar to the Park Preserve/Open Space Alternative. The potential impacts are compared below.

SOURCE: USDA 2016, USGS 2018, Napa County 2015

DUDEK

0 125 250 Feet

FIGURE 5-1

Park Preserve Alternative

Hunter Subdivision Project

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Impacts Identified as Being the Same or Similar to the Proposed Project

Under this alternative, impacts to the loss of agricultural land would remain less than significant, the same as the Proposed Project. The change in visual quality would be greater than the Proposed Project but essentially the impact would remain less than significant. The increase in lighting associated with development would also be the same as the Proposed Project and would require mitigation (AES-1).

Biological impacts related to special-status species, riparian habitat, sensitive natural communities, migratory wildlife corridors, wildlife nursery sites, tree preservation policies, and any other conservation plans would remain the same as the Proposed Project. This alternative would still require implementation of Mitigation Measures BIO-1 through BIO-3 to minimize impacts to bats and nesting birds and erosion impacts. Impacts related to jurisdictional wetlands are described further below, under “Impacts Identified as Being Less Severe than the Proposed Project.”

Cultural and geological impacts would be similar to the Proposed Project. While the extent of ground disturbance may differ due to construction of more duplex/triplex housing essentially the same area of disturbance would occur and mitigation would still be required to ensure that any historical, archaeological, and paleontological impacts are less than significant (Mitigation Measures CUL-1 and GEO-2). A design-level geotechnical report would also be required, per Mitigation Measure GEO-1 to ensure the homes are constructed consistent with any site-specific grading or foundation recommendations.

Under this alternative, the Project would still be required to perform soils testing for agricultural chemicals of concern as a condition of approval for construction and grading permits for the Project site. Mitigation would still be required (Mitigation Measure HAZ-1) to ensure potential impacts would be less than significant.

Impacts Identified as Being Less Severe than the Proposed Project

The impact to jurisdictional wetlands under this alternative would be less severe than the Proposed Project. This alternative would include an approximately 1-acre park, as described in the Park Preserve/Open Space Alternative that would preserve a majority of the on-site wetlands to help reduce Impact 3.4-2. The area of impacted wetlands would be 0.006 of an acre rather than 0.07 acre under the Proposed Project.

Because affordable housing projects are not required to evaluate VMT, there would be no impact to an increase in VMT eliminating the significant and unavoidable Project impact.

Impacts Identified as Being More Severe than the Proposed Project

Under this alternative the density would increase from 5.1 du/ac under the Proposed Project to 11.3.0 du/ac. As discussed above, this alternative would generate 441 residents, an increase of 228 residents as compared to the Proposed Project.

Due to the increase in residents, it is anticipated the increase in air pollutants associated with operation would be slightly higher than the Proposed Project due to the increase in vehicle trips and emissions from the increased number of residents. While air quality impacts would be slightly more severe, they would still be less than significant and would not require any mitigation. This would be the same for greenhouse gas emissions impacts and energy impacts. While the severity of impacts would slightly increase, they would still remain less than significant and would not require mitigation to address.

Noise from construction equipment would be greater from the Proposed Project due to the nature of construction of single-family residences versus attached duplex/triplex housing. Construction equipment would still need to be equipped with suitable exhaust and intake silencers, and stationary construction equipment would need to be located away from adjacent residential property boundaries as is practical, in accordance with Mitigation Measure NOI-1. This would ensure that noise impacts related to construction would still be less than significant. Noise impacts from operation as well as vehicle trips would also be slightly greater but would not be substantial enough to constitute significant impacts.

The increase in 228 residents would also increase the demand for water supply, wastewater conveyance and treatment, schools, and solid waste disposal. However, the increase in severity would not be great enough to constitute significant impacts. These impacts are described in further detail below.

For the Proposed Project, the water demand for single family residences assumes eight (8) persons per home, based on the City's demand factor of four bedrooms and two persons per bedroom for the market rate homes and two bedrooms for the affordable housing units, based on the Preliminary Water Calculations prepared for the Project (see Appendix J). The projected residential water demand for this alternative is shown in Table 5-4 below. The water demand calculation for this alternative assumes the 180 attached duplex and triplex units would be equally divided between 2-bedroom, 3-bedroom, and 4-bedroom units. With the City's demand factor assumption of two occupants per bedroom, the water demand calculation assumes this alternative would result in a total anticipated water demand of approximately 42.3 acre-feet (AF) per year. Water demand is expected to increase, but the same as the Proposed Project any development is required to offset its increase in water in compliance with the City's Water Neutral Ordinance. The same as the Proposed Project, all units would be designed to include

efficient and lower-water-using fixtures and appliances and irrigation systems consistent with Green Building Standards Code (CAL Green Code) that requires the installation of water-efficient indoor infrastructure to conserve water. The landscape irrigation demand under this alternative would comply with the City's Model Water Efficient Landscape Ordinance and possibly may be lower than the Proposed Project's irrigation demand because there would be no private lawns. In addition, irrigation of public landscaping would be offset through planting of drought tolerant plants, water conservation measures, and use of the on-site well, the same as the Proposed Project.

Table 5-4
Alternative 4: Increased Density/Affordable Housing Alternative
Residential Water Demand

Fixture	Flow Rate gal/min or gal/flush	Flow Duration (min., flush, load, etc)	Daily Uses per Occupant	Number of Occupants[1]	Gallons per Day	Acre-feet Per Year
Showerheads	2	8	1	1,080	17,280	19.37
Sink Faucets	1.5	0.25	3	1,080	1,215	1.36
Kitchen Faucet	1.5	4	1	1,080	6,480	7.26
Toilet	1.3	1	3	1,080	4,212	4.72
Clothes Washer	19.7	1	0.37	1,080	7,872.12	8.82
Dish Washer	6.3	1	0.1	1,080	680.4	0.76
				Total Water Demand	**37,739.52**	**42.3**

Note:
[1] For the purposes of determining the Proposed Project's water demand, the City's demand factor is based on the number of bedrooms and persons per bedroom, which differs from the City's persons per household (PPH) to determine the number of residents a residential project would generate, which is 2.45 PPH.
Source: Appendix J.

The water demand of 42.3 AF per year would also translate to 42.3 AF per year of wastewater demand, also expected to be higher than the Proposed Project but would not require mitigation.

This alternative is also expected to result in a slight increase in solid waste generation. The solid waste generation rates used for the Proposed Project are based on the U.S. Environmental Protection Agency (EPA) estimate of 0.0013 tons/day/dwelling unit for multi-family residential homes. This would result in a solid waste generation estimate of 0.234 tons per day, only 0.001 tons greater than the Proposed Project's estimate, as shown in Table 5-5. The impact would remain less than significant and would not require mitigation.

Table 5-5
Alternative 4: Increased Density/Affordable Housing Alternative
Projected Solid Waste Generation

Land Use	Generation Rate (tons/day/unit)	Waste Disposed (tons per day)
180 Multi-family Residential (Duplex/Triplex) Units	0.0013	0.234
	Total	**0.234**

Source: CalRecycle 2018.

Table 5-6 considers the increase in school-age students for primary, elementary, middle and high schools. Student generation rates were derived from the SHUSD Facility Master Plan, which outlines expected growth in demand for school facilities associated with projected development and plans how to fund and respond to such growth. This alternative is expected to generate approximately 57 students in total, an increase of 29 students compared to the Proposed Project. This increase would not exceed the current capacity of schools within the SHUSD, and this alternative would still be required to pay the necessary school impact fees.

Table 5-6
Alternative 4: Increased Density/Affordable Housing Alternative Student Generation

Grades	Student Generation Rate (per total number of units)	Students Generated
K-2	0.058	10.44
3-5	0.080	14.4
6-8	0.088	15.84
9-12	0.088	15.84
	Total	**57**

Source: SHUSD 2010.

Relationship to Proposed Project Objectives

The Increased Density/Affordable Housing Alternative would subdivide the site consistent with the underlying land use designation and zoning, would complete the planned extensions of Adams Street and Starr Avenue, and would contribute to the provision of workforce and affordable housing objective. However, this alternative would not achieve the Proposed Project objective of developing a variety of housing types, including single-family and ADUs. The housing would be affordable to a range of incomes including, very low, low and moderate-income households, but would not include any single-family or market rate homes. This alternative generally meets a majority of the Proposed Project objectives but not all of the objectives.

5.2 ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project/No Development alternative is the environmentally superior alternative. It would avoid all Project-related environmental impacts. CEQA Guidelines Section 15126.6(e)(3)(A) requires that when the No Project alternative is environmentally superior, another alternative be selected as the environmentally superior alternative. The environmentally superior alternative would be the Park Preserve alternative. This alternative would reduce Impact 3.4-2 by developing a passive park surrounding three out of four of the site's jurisdictional wetlands. However, this alternative would not avoid all of the significant impacts associated with the Project and all of the identified mitigation would still be required.

Table 5-7 provides an overview of impacts compared to the Proposed Project.

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.1 Aesthetics/Visual Resources					
3.1-1: Would the Project have a substantial adverse effect on a scenic vista? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.1-2: Would the Project conflict with applicable regulations governing scenic quality or substantially degrade the existing visual character or quality of public views of the site and its surroundings? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.1-3: Would the Proposed Project potentially create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? This would be a potentially significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.1-4: Would the Proposed Project contribute to cumulative changes in the existing visual character or conflict with applicable regulations governing scenic quality? The project's contribution would not be considerable.	LS	NI	LS	LS	LS
3.1-5: Would the Proposed Project contribute to a cumulative increase in light and glare? The project's contribution would not be considerable with mitigation.	LS/M	NI	LS/M	LS/M	LS/M

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.2 Agricultural and Forestry Resources					
3.2-1: Would the Proposed Project convert Prime Farmland and Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? This is a less-than-significant impact.	LS	NI	LS	LS	LS
3.2-2: Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use or conversion of forest land to non-forest use? This is a less-than-significant impact.	LS	NI	LS	LS	LS
3.2-3: Would the Proposed Project contribute to cumulative impacts associated with the loss or conversion of existing agricultural resources? The project would result in a less than considerable contribution.	LS	NI	LS	LS	LS
3.3 Air Quality					
3.3-1: Would implementation of the Proposed Project conflict with or obstruct implementation of the applicable air quality plan? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.3-2: Would implementation of the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.3-3: Would implementation of the Proposed Project expose sensitive receptors to substantial pollutant concentrations? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.3-4: Would the Proposed Project contribute to cumulative air quality emissions within the existing area? The contribution would not be considerable.	LS	NI	LS+	LS	LS+

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.4 Biological Resources					
3.4-1: Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on 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? This would be a significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.4-2: Would the Proposed Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act through direct removal, filling, hydrological interruption, or other means? This would be a significant impact.	LS/M	NI	LS/M	LS/M-	LS/M-
3.4-3: Would the Proposed Project 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? This would be a potentially significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.4-4: Would the Proposed Project contribute to cumulative impacts with respect to biological resources? The project's contribution would not be considerable.	LS	NI	LS	LS	LS
3.5 Cultural and Tribal Cultural Resources					
3.5-1: Would the Proposed Project cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5? This would be a significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.5-2: Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5? This would be a potentially significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.5-3: Would the Proposed Project disturb human remains, including those interred outside of formal cemeteries? This would be a less-than-significant impact.	LS	NI	LS	LS	LS

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.5-4: Would the proposed project cause a substantial adverse change in the significance of a tribal cultural resource that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined by the lead agency to be significant? This impact is considered potentially significant.	LS/M	NI	LS/M	LS/M	LS/M
3.5-5: Would the Proposed Project contribute to cumulative impacts to cultural resources, including historical and archeological resources as defined in CEQA Guidelines Section 15064.5 and human remains? This impact is considered potentially significant.	LS/M	NI	LS/M	LS/M	LS/M
3.5-6: Would the Proposed Project contribute to cumulative impacts to tribal cultural resources, currently listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources, or a resource determined by the lead agency to be significant? This impact is considered potentially significant.	LS/M	NI	LS/M	LS/M	LS/M
3.6 Geology and Soils					
3.6-1: Would implementation of the Proposed Project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking and/or liquefaction? This would be a potentially significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.6-2: Would implementation of the Proposed Project occur on weak, compressible, and/or expansive soils that could result in adverse impacts on habitable structures? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.6-3: Would implementation of the Proposed Project directly or indirectly destroy a unique paleontological resource or site? This would be a potentially significant impact.	LS/M	NI	LS/M	LS/M	LS/M
3.6-4: Would the Proposed Project contribute to cumulative impacts related to geologic or seismic hazards? This would be a less than considerable contribution.	LS	NI	LS	LS	LS

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.7 Greenhouse Gas Emissions					
3.7-1: Would implementation of the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.7-2: Would implementation of the Proposed Project conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.7-3: Would the Proposed Project contribute to cumulative GHG emissions within the region? The Project's contribution would not be considerable.	LS	NI	LS+	LS	LS+
3.8 Hazards and Hazardous Materials					
3.8-1: Would implementation of the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.8-2: Would implementation of the Proposed Project 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? This would be a potentially significant impact.	LS/M	NI	LS/<	LS/M	LS/M
3.8-3: Would implementation of the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.8-4: Would implementation of the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires? This would be a less-than-significant impact.	LS	NI	LS	LS	LS

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.8-5: Would implementation of the Proposed Project contribute to a cumulative increase in the potential exposure of people to sites where soil contamination could be present from past or current uses, or to hazards associated with the use and transport of hazardous materials? The project's contribution would be less than considerable.	LS	NI	LS	LS	LS
3.9 Hydrology and Water Quality					
3.9-1: Would implementation of the Proposed Project violate water quality standards or waste discharge requirements, or otherwise substantially degrade surface or groundwater quality? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.9-2: Would implementation of the Proposed Project deplete groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.9-3: Would implementation of the Proposed Project substantially alter the existing drainage pattern of the site or area through the addition of impervious surfaces resulting in erosion or siltation on- or off-site; increasing the rate or amount of surface runoff resulting in flooding on- or off-site; contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide polluted runoff; or impede or redirect flood flows? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.9-4: Would implementation of the Proposed Project release pollutants during flooding? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.9-5: Would implementation of the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? This would be a less-than-significant impact.	LS	NI	LS	LS	LS

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.10 Land Use					
3.10-1: Would implementation of the Proposed Project conflict with the City's 1993 General Plan policies or other regulations adopted for the purpose of avoiding or mitigating an environmental effect? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.11 Noise and Vibration					
3.11-1: Would short-term construction noise levels cause a substantial temporary increase in ambient noise levels? This would be a potentially significant impact.	LS/M	NI	LS/M+	LS/M	LS/M+
3.11-2: Would existing residential areas be exposed to vibration peak-particle velocities greater than 0.2-inch per second or vibration levels greater than 80 VdB due to project construction? This would be a less than significant impact.	LS	NI	LS	LS	LS
3.11-3: Would on-site operation noise from the proposed residences result in noise exposure levels that would impact adjacent residences? The impact would be less than significant.	LS	NI	LS+	LS	LS+
3.11-4: Would the Proposed Project vehicle trips result in off-site roadway noise level increases that could impact noise sensitive land uses located along such roadways? The impact would be less than significant.	LS	NI	LS+	LS	LS+
3.11-5: Would the Proposed Project, in addition to cumulative development in the City, increase traffic noise that exceeds the City's noise standards? The Project's contribution would not be considerable.	LS	NI	LS	LS	LS
3.12 Public Services and Recreation					
3.12-1: Would the Proposed Project increase demand for public services requiring the need to construct new facilities, or expand existing facilities, the construction of which could cause significant environmental impacts? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.12-2: Would the Proposed Project increase the use of existing neighborhood parks or other recreational services such that a substantial physical deterioration of the facility would occur, or require the construction or expansion of facilities that could have a physical adverse effect on the environment? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.12-3: Would the Proposed Project contribute to a cumulative increase in demand for public services, schools, and recreation facilities? The Project's contribution would not be considerable.	LS	NI	LS+	LS	LS+
3.13 Utilities					
3.13-1: Would the Proposed Project require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.13-2: Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.13-3: Would the Proposed Project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.13-4: Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.13-5: Would the proposed project comply with federal, state, and local statutes and regulations related to solid waste? This is a less-than-significant impact.	LS	NI	LS+	LS	LS+

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.13-6: Would the Proposed Project contribute to an increase in demand for water supply, wastewater treatment, stormwater or solid waste? The Project's contribution would not be considerable.	LS	NI	LS+	LS	LS+
3.14 Transportation and Traffic					
3.14-1: Would the Proposed Project conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? This would be a less-than-significant impact.	LS	NI	LS	LS	LS
3.14-2: Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? This is a significant impact.	SU	NI	SU	SU	NI
3.14-3: Would the Proposed Project increase hazards due to a geometric design feature or incompatible use? This is a less-than-significant impact.	LS	NI	LS	LS	LS
3.14-4: Would the Proposed Project result in inadequate emergency access. This is a less-than-significant impact.	LS	NI	LS	LS	LS
3.14-5: Under Cumulative conditions, would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3(b)? This is considered a significant impact.	SU	NI	NI	NI	NI
3.14-6: Under Cumulative conditions, would the Proposed Project increase hazards due to a geometric design feature or incompatible use? This is considered a less than significant impact.	LS	NI	SU	SU	SU
3.15 Energy					
3.15-1: Would implementation of the Proposed Project result in wasteful, inefficient or unnecessary consumption of energy resources during construction or operation? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+
3.15-2: Would implementation of the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency? This would be a less-than-significant impact.	LS	NI	LS+	LS	LS+

Table 5-7
Comparison of Project Alternatives

Impact	Proposed Project	Alternative 1: No Project/No Development	Alternative 2: No project/general Plan	Alternative 3: Park Preserve	Alternative 4: Increased Density/Affordable Housing
3.15-3: Would the Proposed Project contribute to an increase in wasteful, inefficient or unnecessary consumption of energy resources during construction or operation? The Project's contribution would not be considerable.	LS	NI	LS+	LS	LS+

Notes:
LS = Impacts less than significant
NI = No impact
LS/M = Impacts less than significant after mitigation
PS = Potentially significant (mitigation not determined)
SU= Significant and Unavoidable
"+" indicates the impact is more severe than the Project impact
"-" indicates that the impact is less severe than the Project impact

CHAPTER 6
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