Draft

ST. HELENA GENERAL PLAN UPDATE

Program Environmental Impact Report
SCH No. 2010042001

Prepared for
City of St. Helena

August 2010

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Draft Program Environmental Impact Report

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CHAPTER 1
Introduction

1.1 Project Overview

This Draft Program Environmental Impact Report (EIR) was prepared in accordance with and in fulfillment of the California Environmental Quality Act (CEQA) and the state CEQA Guidelines.

This chapter provides an introduction to the purpose, approach, assumptions, issues, and organization of this Draft Program Environmental Impact Report on the proposed City of St. Helena Draft General Plan Update (General Plan Update). This Draft Program Environmental Impact Report (Draft EIR or DEIR) was prepared in accordance with and in fulfillment of the California Environmental Quality Act (CEQA) and the state CEQA Guidelines. As described in CEQA Guidelines Section 15121(a), an Environmental Impact Report (EIR) is a public informational document that assesses the potentially significant environmental impacts of a project. CEQA requires that an EIR be prepared by the agency with primary responsibility over the approval of a project (the lead agency). The City of St. Helena is the lead agency for the General Plan Update. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development associated with discretionary actions, where feasible, and have the obligation to balance economic, environmental, and social factors. In this case, approval of the General Plan Update is the discretionary action.

The State of California requires that every city and county adopt a general plan to guide decisions related to the conservation of natural resources, the physical form and character of future development, and public welfare and safety. Local ordinances and other plans must be consistent with general plan policies. As stated in the proposed General Plan Update, “The policies set forth in the General Plan are not legally enforceable mandates, but rather provide the foundation for the design and application of important policy tools…” (City of St. Helena, 2010).

Type of Document

The CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR serves as a “Program EIR.” The CEQA Guidelines (Section 15168) define a Program EIR as an EIR that may be prepared on a series of actions that can be characterized as one large project and are related either:

1) *Geographically*;

2) *As logical parts in the chain of contemplated actions*;

3) *In connection with the issuance of rules, regulations, plans or other general criteria to govern the conduct of a continuing program; or*

4) *As individual activities carried out under the same authorizing statutory or regulatory authority and having generally similar environmental effects which may be mitigated in similar ways*.

The program-level analysis considers the broad environmental effects of the proposed General Plan Update, which is the "project" for purposes of this Draft Program EIR. The Draft Program EIR will be used to evaluate likely subsequent projects (public and private) under the General Plan Update consistent with CEQA and the state CEQA Guidelines. When individual projects or activities under the General Plan Update are proposed, the city would be required to examine the projects or activities to determine whether their effects were adequately analyzed in this Draft Program EIR. If the projects or activities would have no effects beyond those analyzed in this Draft Program EIR, no further CEQA compliance would be required.

As a Draft Program EIR, this document focuses on the likely increased number of residential units over the 20-year planning horizon (2010 to 2030) plus the commercial and other non-residential uses that could be developed. Potential areas of change are described in more detail in Chapter 3 of this Draft Program EIR. Associated changes to infrastructure (e.g., water, wastewater, etc.) are also addressed at a programmatic level of detail.

Purpose of the EIR

This Draft Program EIR has been prepared to provide the public and responsible trustee agencies with information about the probable effects of adoption and implementation of the proposed General Plan Update.

This Draft Program EIR has been prepared to provide the public and responsible trustee agencies with information about the probable effects of adoption and implementation of the proposed General Plan Update. This Draft Program EIR identifies policies and implementation programs within the General Plan Update that would mitigate these effects as well as any additional mitigation measures necessary to minimize significant impacts on the environment. This Draft Program EIR also evaluates reasonable alternatives to the proposed project. An environmentally superior alternative is identified as part of the process. A required "No Project" alternative discusses the result of not implementing the project or any reasonable alternatives. Comments generated from public review of this document will be used to revise the Draft Program EIR and to prepare the Final Program EIR.

The City of St. Helena has determined that preparation of a Program EIR is appropriate due to potentially significant environmental impacts that could be caused by implementing the proposed General Plan Update. This Draft Program EIR provides a general review of the environmental effects of infill and/or redevelopment of the city based on proposed land use designations. This Draft Program EIR will be used to evaluate the direct and indirect environmental effects of subsequent development under the General Plan Update (i.e., residential development, rezonings, commercial structures, park sites, recreation facility development, infrastructure improvements).

Relationship to Other Planning Documents

A number of federal, state, regional, and local plans and regulations would pertain to development associated with the General Plan Update.

A number of federal, state, regional, and local plans and regulations have been adopted that would pertain to development associated with the General Plan Update. In some cases, compliance with these plans/laws would provide additional mitigation for the impacts of future land uses and development.

Federal Government

There are no federal plans that directly affect local land use decisions, but federal laws such as the Endangered Species Act (ESA) can affect individual land uses in a significant way. For example, projects must comply with the National Environmental Policy Act (NEPA) as well as the ESA, when federal funding or federal permits are involved for projects such as highway construction, other public infrastructure, or permits for fill within “waters of the U.S.” (404 permit). The U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the National Oceanic and Atmospheric Administration, and the Department of Housing and Urban Development (HUD) are examples of responsible federal agencies that exercise jurisdiction over such projects.

State and Regional Government

State and regional agencies also can exert influence on local land use and development decisions. Often these agencies have their own adopted plans.

The state’s influence is primarily accomplished through funding of public infrastructure. The California Department of Fish and Game and the Department of Conservation influence or directly regulate various future land uses and development in the city, depending on the resources that may be affected (e.g., stream corridors). The California Department of Transportation (Caltrans) influences the design and construction of state roadways, including State Routes 29 and 128 in St. Helena. State requirements are often implemented through regional planning and regulatory agencies, including:

- The Regional Water Quality Control Boards' Basin Plans and point and non-point water quality regulations;
- The Metropolitan Transportation Commission's Regional Transportation Plans;
- The Association of Bay Area Governments' distribution of Regional Housing Needs; and
- The Bay Area Air Quality Management District's Clean Air Plans and permit regulations.

Two other quasi-regional agencies that influence local land use decisions and development project decisions are the Napa County Local Agency Formation Commission (LAFCo) and the Napa County Transportation and Planning Agency (NCTPA). These are state-mandated bodies that exercise independent authority over particular types of projects or projects in particular locations. LAFCo is responsible for decisions regarding the formation and organization of special districts that provide public services to county residents. LAFCo also approves the geographical area served by special districts and cities through spheres of influence and annexation. The NVTA is a regional transportation planning agency that is influential in obtaining funding and prioritizing transportation projects.

1.2 Environmental Review Process

The City of St. Helena will review and consider the information contained in the EIR before taking action on adopting the General Plan Update.

The City of St. Helena will review and consider the information contained in the EIR before taking action on adopting the General Plan Update. In accordance with CEQA Guidelines Section 15090, prior to adopting the General Plan Update, the City must certify that the Draft and Final Program EIRs have been completed in compliance with CEQA and that the decision-making body of the lead agency considered the information contained in the Final Program EIR before approving the General Plan Update.

Notice of Preparation

On April 23, 2010, the City of St. Helena sent a Notice of Preparation (NOP) to government agencies, organizations, and individuals potentially interested in the General Plan Update. The NOP is included as Appendix A of this Draft Program EIR. The NOP requested that agencies with regulatory authority over any aspect of the General Plan Update describe that authority and identify the relevant environmental issues that should be addressed in the Draft Program EIR. Interested members of the public were also invited to comment. Responses to the NOP are included as Appendix B.

Scoping Meeting

A scoping meeting for the Draft Program EIR was held before the City of St. Helena Planning Commission on May 4, 2010. The public was informed about the General Plan Update and the EIR process was summarized. The comments made at the scoping meeting focused on the following topics:

- Density needed to support transit use; increased transit needed to reduce greenhouse gas emissions;
- Night lighting and related visual and biological impacts;
- Protection of Sulphur Creek;
- Need for solar initiative to support community solar use;
- Need for more alleys to support walkability;
- Necessary improvements to sidewalks, especially where sidewalks are incomplete;
- Need to assess housing needs;
- Need to encourage businesses that reduce greenhouse gas emissions;
- Need for low-density, low-impact development (mixed use, second units, infill) rather than large, multi-unit projects;
- Desire for development that is more conducive to walking/bicycling;
- Desire for reduced level of growth compared to that shown in Draft General Plan Update;
- Desire to avoid large, concentrated development and to disperse growth in groups of 8 to 12 units at one location (vs. 100 units in one location);
- Air quality impacts from fireplaces; and
- Need to alert residents about spraying of vineyards within town by flags posted or some other system.

These issues are addressed in relevant sections of the Draft Program EIR.

Draft Program EIR

This document constitutes the Draft Program EIR. The Draft Program EIR contains a description of the project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives.

Notice of Completion

The public review period for the Draft Program EIR is 45 days.

Upon completion of the Draft Program EIR, the city will file the Notice of Completion (NOC) with the Governor's Office of Planning and Research (OPR) to begin the 45-day public review period (Public Resources Code Section 21161).

Public Notice and Public Review

Concurrent with the NOC, the City will provide public notice of the availability of the Draft Program EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties. The public review period will be forty-five (45) days beginning **August 10, 2010**. Public hearings on the Draft EIR are scheduled for **August 26, 2010** and **September 28, 2010**.

All comments or questions regarding the Draft Program EIR should be addressed to: Greg Desmond, City of St. Helena, Planning Department, 1480 Main Street, St. Helena, CA 94574.

Final EIR and Certification

Following the public review period, a Final EIR will be prepared to respond to public comments.

Following the public review period, a Final EIR will be prepared. The Final EIR will respond to written comments received during the public review period and to oral comments made at the public hearing on the Draft EIR.

Certification of the EIR and Project Consideration

The City will review and consider the Final EIR. If the City finds that the Final EIR is "adequate and complete," the City will certify the Final EIR.

Upon review and consideration of the Final EIR, the St. Helena City Council may take action to approve, revise, or reject the General Plan Update. A decision to approve the General Plan Update would be accompanied by written findings in accordance with CEQA Guidelines Section 15091 and Section 15093.

Mitigation Monitoring Program

If the General Plan Update is approved, a mitigation monitoring program would also be adopted for mitigation measures that have been incorporated into or imposed upon the General Plan Update to reduce or avoid significant effects on the environment, in accordance with CEQA Guidelines Section 21081.b(a). The mitigation monitoring program would be designed to ensure that these measures are carried out during project implementation.

1.3 Organization of the Draft EIR

The *Summary* (Chapter 2) includes a brief project description and an overview table of the environmental impacts identified by this Draft Program EIR. The summary table lists the environmental impacts, proposed mitigation measures, and the level of significance after mitigation. Detailed analysis of these impacts and mitigations is provided in Chapter 4 (Environmental Setting, Impacts and Mitigation Measures).

The *Project Description* (Chapter 3) describes the project location, potential future growth, and key characteristics of the General Plan Update. This chapter also includes a list of the approvals required by the City of St. Helena and other agencies that may consider aspects of the General Plan Update.

Environmental Setting, Impacts and Mitigation Measures (Chapter 4) contains a discussion of the setting (existing conditions and regulatory framework) and the environmental impacts (including cumulative impacts) that could result from the General Plan Update. It includes the criteria used to assess the significance of adverse environmental effects. The chapter also identifies the mitigation measures that would reduce or eliminate significant adverse impacts. The impact discussions include the significance of each impact both with and without implementation of mitigation measures and/or standard conditions.

Alternatives (Chapter 5) evaluates a range of alternatives to the proposed General Plan Update and identifies an environmentally superior alternative, consistent with the requirements of CEQA. The alternatives analyzed are Alternative 1: No Project – Implement the 1993 General Plan; and Alternative 2: Reduced Project Alternative.

Other Statutory Sections (Chapter 6) presents an analysis of cumulative impacts and focused analysis of the impacts identified in Chapter 4 with a specific discussion regarding the General Plan Update's potential for inducing growth. In addition, this chapter addresses significant, unavoidable impacts and significant irreversible changes.

Report Preparation (Chapter 7) identifies the authors of the Draft Program EIR. Persons and documents consulted during preparation of the Draft Program EIR are listed at the end of each analysis section (Sections 4.A through 4.R).

Appendices. The NOP, comment letters received on the NOP, and supporting documents are presented in Appendices A and B. Technical information related to cultural resources is contained in Appendix C. Noise information is

included in Appendix C and transportation information is included in Appendix D.

All reference documents listed at the end of each analysis section (Chapter 4) are available for review by the public. Documents are available at the City of St. Helena, Planning Department 1480 Main Street, St. Helena, CA 94574.

References

City of St. Helena. 2010. *St. Helena General Plan Update 2030* (Draft), February.

CHAPTER 2
Summary

2.1 Project Under Review

The project under review in this EIR is the proposed St. Helena General Plan Update, which addresses growth within the City of St. Helena to the horizon year of 2030.

The project under review in this EIR is the proposed St. Helena General Plan Update, which addresses growth within the City of St. Helena to the horizon year of 2030. The proposed General Plan Update would replace the existing 1993 General Plan. California Government Code Section 65300 et seq. mandates that all counties and incorporated cities prepare a general plan that establishes policies and standards for potential future development, housing affordability, and resource protection.

The General Plan Update contains the following 12 elements: Land Use and Growth Management; Economic Sustainability; Public Facilities and Services; Circulation; Historic Resources; Community Design; Open Space and Conservation; Public Health, Safety and Noise; Climate Change; Housing; Parks and Recreation; and Arts, Culture and Entertainment. This Draft Program EIR evaluates the proposed policies and implementing actions within each of these elements and also addresses specific areas of the city proposed for land use changes and new development. This General Plan Update is intended to make minor revisions to the adopted 1993 General Plan, with an emphasis on new policies related to sustainability, climate change, and multi-modal transportation options (to reduce private vehicular use). The General Plan Update would make few changes to the land use designations of the 1993 General Plan. Key areas identified for change are referred to as “Change Areas,” “Key Housing Opportunity Sites,” and “Pipeline Projects.” The “Likely Buildout Scenario,” in terms of new housing units and commercial/industrial growth, is the main subject of the EIR analysis. The “Full Buildout Scenario” is evaluated in Section 6.3, which addresses cumulative impacts.

The Likely Buildout Scenario addresses a population increase of 921 persons (15-percent increase from existing conditions), 379 new housing units (14-percent increase), 277,104 new square feet of commercial space (4-percent increase), and about 560 new jobs (9-percent increase).

2.2 Project Objectives

The St. Helena General Plan Update expresses the city's vision for its physical, economic, social, and economic development through the year 2030. The General Plan Update goals, policies, and implementing actions provide for a sustainable community, a stable economy, and environmental stewardship. Specific General Plan Update objectives are as follows:

- Identify an overall vision for the city;
- Establish a basis for judging whether specific development proposals and public projects are consistent with the vision identified in the General Plan;
- Guide City departments, other public agencies, and private developers in the design of projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards;
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the city's Zoning Ordinance, specific and area plans, and the Capital Improvement Program;
- Provide estimates for projected population and employment growth to the year 2030;
- Protect the agricultural character of the city by focusing development in the developed portions of the city;
- Reduce congestion by providing alternative transportation choices and enhancing regional public transit connections; and achieving a better jobs/housing balance to reduce commuter trips;
- Promote healthy growth for the city at a rate that would not surpass infrastructure capabilities and available resources; and
- Increase the supply of affordable workforce housing to maintain St. Helena's quality of life and long-term economic sustainability.

2.3 Environmental Impacts and Mitigation Measures

Under CEQA, a significant effect on the environment is defined as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by a project, including effects on land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance.

Under CEQA, a significant effect on the environment is defined as a substantial or potentially substantial adverse change in any of the physical conditions within the area affected by a project, including effects on land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. The criteria of significance used to determine whether or not effects are significant are included in the Impacts and Mitigation Measures subsection for each topic addressed in Chapter 4.

Before adoption of the General Plan Update and after certification of the Final Program EIR, written findings regarding each of the identified environmental impacts must be prepared. Also, a monitoring program for all mitigation measures must be adopted. This monitoring program will be prepared as part of the Final Program EIR but does not need to be formally adopted until the preparation of findings after certification of the Final Program EIR. For significant unavoidable impacts, a statement of overriding considerations must be prepared.

2.4 Alternatives

Two alternatives to the proposed General Plan Update are evaluated: the No Project Alternative and a Reduced Scale Alternative.

Two alternatives to the proposed General Plan Update are evaluated in Chapter 5 of the EIR: the No Project Alternative, which addresses no change from existing conditions and buildout under the adopted 1993 General Plan; and a Reduced Scale Alternative, which addresses reduced residential and non-residential development. The environmental impacts of each alternative are compared to those of the proposed General Plan Update. The ability of each alternative to meet project objectives is also evaluated.

2.5 Areas of Controversy

Scoping Meeting Comments

A scoping meeting for the EIR was held before the City of St. Helena Planning Commission on May 4, 2010.

A scoping meeting for the EIR was held before the City of St. Helena Planning Commission on May 4, 2010. The public was informed about the proposed General Plan Update and the EIR process was summarized. The comments made at the scoping meeting focused on the following topics:

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- Need for more alleys to support walkability;
- Necessary improvements to sidewalks, especially where sidewalks are incomplete;
- Need to assess housing needs;
- Need to encourage businesses that reduce greenhouse gas emissions;

- Need for low-density, low-impact development (mixed use, second units, infill) rather than large, multi-unit projects;
- Desire for development that is more conducive to walking/bicycling;
- Desire for reduced level of growth compared to that shown in Draft General Plan Update;
- Desire to avoid large, concentrated development and to disperse growth in groups of 8 to 12 units at one location (vs. 100 units in one location);
- Air quality impacts from fireplaces; and
- Need to alert residents about spraying of vineyards within town by flags posted or some other system.

These issues are addressed in relevant sections of the EIR.

Notice of Preparation Comments

On April 23, 2010, the City of St. Helena sent a Notice of Preparation (NOP) to government agencies, organizations, and individuals potentially interested in General Plan Update.

On April 23, 2010, the City of St. Helena sent a Notice of Preparation (NOP) to government agencies, organizations, and individuals potentially interested in General Plan Update. The following discussion lists the agencies, organizations, and individuals that responded to the NOP and the issues raised. The responses to the NOP are included in Appendix B.

California Department of Conservation: potential impacts on agricultural lands; need to use economic multipliers to assess site's contribution to local/state economies; identification of the type, amount, and location of farmland conversion; impacts on current and future agricultural operations; incremental impacts leading to cumulative impacts; use of Land Evaluation and Site Assessment (LESA) Model for impacts evaluation; use of agricultural conservation easements as mitigation.

California Emergency Management Agency (Cal EMA): hazard issues and consultation with state agencies related to hazards identification; identification of areas subject to flooding; need for conservation element addressing natural resources, including water and its hydraulic force; regulation of land in stream channels and other areas required for accomplishment of conservation plan; control of erosion of soils; open space element addressing safety issues such as unstable soil areas, floodplains, areas of high fire risks, and areas for watershed protection; and safety element addressing risks such as seismicity and ground shaking, tsunami, seiche, dam failure, slope instability, liquefaction and other seismic hazards; urban fires; need for general plan safety element to map known seismic and other geologic hazards; evacuation routes, peakload water supply requirements; road widths and clearances as related to fire and geologic

hazards; consultation with relevant state agencies; consistency with Airport Land Use Plans; submittal of draft elements to state agencies prior to general plan element adoption.

Native American Heritage Commission: need to assess impacts on historical resources within area of project effect; recommendations for contact with local archaeological Information Center for records search; archaeological inventory survey as required; contact with Native American Heritage Commission; adequate mitigation for finds or human remains.

California Energy Commission: specific issues to address per Appendix F of the CEQA Guidelines related to energy conservation; need to decrease overall per capita energy consumption and reliance on natural gas and oil, and to increase reliance on renewable energy sources.

California Department of Transportation: adequate traffic impact assessment prior to request for any encroachment permit from Caltrans; need to locate housing, jobs, and services near transit nodes; connection of nodes with streets that facilitate walking and biking; need to promote mass transit usage and traffic impacts on state highways; need to model pedestrian/bicycle/transit trips; secondary impacts on pedestrians/bicyclists from traffic impact mitigation measures; need for Traffic Impact Study and coordination with Caltrans office.

California Department of Fish and Game: need for assessment of habitats, flora, fauna, sensitive habitats, and special-status species; direct and indirect impacts analysis; need for specific permits if there is a take of listed species; consultation if any take might result; impacts on any streams and potential need for Streambed Alteration Agreement.

California Regional Water Quality Control Board (RWQCB): need to address Napa River Pathogen and Sediment Total Maximum Daily Loads (TMDL); need to address San Francisco Bay Urban Creeks Pesticide TMDL; need for Policy OS1.A to address that creek setbacks protect stream function and riparian habitat while allowing for limited use and access; need for revision to Policy OS1.B to address compliance with RWQCB regulations; need for Policy OS1.C to address coordination with RWQCB and other agencies; need for Policy OS1.F to reference Water Board documents such as Water Quality Control Plan and Napa River Sediment TMDL; need for Policy OS1.M to address Fish Friendly Farming or equivalent program; need for requirement for City to provide applicants with copies of Joint Aquatic Resource Permit Application (JARPA) and Board's 401 Water Quality Certification Application; need for revision of Policy OS1.A, second bullet, to include development of Integrated Pest Management Plan and to indicate restriction on use of herbicides in areas near water bodies; need for

Policy OS3.B to clarify that water pollution to be prevented by implementation of Best Management Practices and other measures; need for clarification to Implementing Action OS3.C regarding "green" infrastructure; need for expansion of Policy OS4.3; possibility of Low Impact Design (LID) including bio technology rather than structural features such as rip rap; need for refined definition of bioswale in the General Plan; need for City to provide appropriate permitting documents for National Pollutant Discharge Elimination System (NPDES) coverage.

California Public Utilities Commission: need for rail corridor safety to be addressed in terms of vehicles and pedestrians, especially for at-grade crossings; need for cumulative rail safety-related impacts to be addressed; measures to reduce adverse safety impacts are summarized; need for Commission approval to modify any existing highway-rail crossing or to construct new crossing.

California Office of Planning and Research: (Provided summary of NOP and list of agencies sent the NOP for comment on April 23, 2010.)

Napa County Landmarks: need for policy to encourage future projects to follow the Secretary of Interiors Standards for the Treatment of Historic Properties to assist planners and property owners.

Jerald Hyde: detailed recommendations regarding noise analysis.

Ann Nevero (e-mail to G. Desmond dated May 21, 2010): need to address protection of privacy; protection of viewsheds, light and air; impacts on water restrictions and other resources; need to ensure adequate water for both residents and wine/agriculture industry; question regarding whether increased shopping facilities will be proposed and how will this affect traffic and community character.

Barbara Monnette and Kathy Coldiron (letter to G. Desmond): concern about new road and impacts on Fulton winery (noise, safety, etc.); impacts of road extensions, especially in vicinity of Hunter and Mercy projects; safety of children with increased grid system of streets; reduced privacy from 2-story homes; impacts on groundwater and adequacy of monitoring; interaction with City's Water Task Force; demand for housing and accomplishments of affordable housing; what jobs would create best jobs and housing balance; what is the impact difference between "high impact" developments and lower impact strategies such as mixed-use, second units, infill, and upgrading of existing housing stock; what is the impact difference between street extensions and developing pedestrian/bicycle infrastructure; need for sidewalks that are safe and level for all users; infrastructure costs of developing opportunity sites and related impacts on fire, police, and schools;

housing proposed by Mercy and Hunter projects that would far exceed ABAG projections for housing needs; need to preserve character and charm of St. Helena while supporting industries that add to town's prosperity; numerous specific changes recommended for Housing Element; concern about high density building; need for General Plan to promote more parks; question about why to push for 2 jobs per resident; need to address noise pollution from new roads; need to disallow fireplaces in new construction; need to avoid changing fire department from voluntary to municipally funded department.

Law Office of Nick S. Rossi (letter to C. Poole): need to study all issues as identified in NOP; for agricultural land impacts, need to require open space setbacks and no occupied structures as buffers and "no build areas" where development abuts agricultural operations such as vineyards; need for low-density, contiguous buffer zones where development abuts agricultural lands; need for height limits and parking restrictions for multi-family housing near agricultural lands; potential for such buffers to reduce complaints about noise and other agricultural effects; adjacency of Mercy project to agricultural operations and lack of adequate buffers shown on plans; need to study effects of Mercy project on agricultural lands; need for Open Space Element in Program EIR; need to identify plans for preserving open space for resource protection, recreation, and public health/safety in EIR; need to identify how goals for open space will be achieved; for traffic, need for multi-modal network; need for EIR to address connection of Starr Avenue through Romero property, which is not advisable or safe; possibility that level of service for this road is less than C rating; need for EIR to study the possibility that Mercy and other nearby projects could have major impacts on Pope Street (and bridge) and Starr Avenue; need to correlate studies with Regional Congestion Management Plan; requirement that zoning be consistent with General Plan; need for EIR to study zoning ordinance consistency with General Plan; need to update zoning at same time as General Plan; need for EIR to study regional planning issues and consistency of City's General Plan with such; possibility that some elements of General Plan may not be consistent with one another; need to review water supply, drainage, sewer capacity, and flooding impacts; possibility that affordable units may be found to have inadequate water/wastewater services provided already to market-rate units; possible need to identify new water sources or sewer capacity enhancements; need to update Urban Water Management Plan and Capital Improvement Program at same time as General Plan; need to address conflicts with Comprehensive Flood Control Plan; possibility that Romero property development may affect flooding, and need for the development to be consistent with flood plans; need to study impacts on streams, especially for Romero property; issue of floodplain impacts of specific projects and applicable land use regulations; need for expanded

study of habitat suitability for fish and wildlife and development of mitigation measures such as need for habitat conservation and/or natural community conservation plans; need for study of waste management and solid waste as well as waste reduction/recycling; need for EIR to address greenhouse gas (GHG) emissions as related to all relevant plans/regulations and updated guidelines for reduction of GHG emissions; need to address Bay Area Air Quality Management District (BAAQMD) guidelines for determining GHG emissions; need for City to formally adopt a GHG emissions reduction plan; need to address Romero and Mercy projects specifically as related to GHG emissions, their location relative to transportation hubs and retail services, and associated GHG impacts; CEQA categorical exemptions that may apply to key opportunity sites and may be challenged as such, which means that the EIR needs to address these issues; concentration of affordable housing in City's east side and need for EIR to study appropriateness of key opportunity sites, including socio-economic impacts on whole community.

2.6 Summary Table

Table 2-1 provides a summary of the General Plan Update's potential impacts and the recommended mitigation measures, which are discussed in greater detail in Chapter 4 of this EIR. The table identifies the level of impact both before and after mitigation. Chapter 4 provides detail regarding each potentially-significant impact that is addressed in Table 2-1.

TABLE 2-1
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.A Land Use			
None.			
4.B Agricultural and Forestry Resources			
AGRICULTURE-1: Development in accordance with the General Plan Update could result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	**AGRICULTURE-1:** The following new implementing action shall be added to the Land Use and Growth Management Element of the General Plan Update: • *Evaluate discretionary, rezonings, or General Plan amendments outside the Urban Limit Line to determine their potential for impacts on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance mapped by the State Farmland Mapping and Monitoring Program and avoid converting these farmlands where feasible. Where conversion of farmlands mapped by the state cannot be avoided, require long-term preservation of one acre of existing farmland of equal or higher quality for each acre of state-designated farmland that would be rezoned or redesignated to non-agricultural uses. This protection may consist of establishment of farmland easements or other similar mechanism, and the farmland to be preserved shall be located within the City and preserved prior to approval of the proposed rezoning or General Plan amendment.* This new implementing action would help to reduce the impact of conversion of California Department of Conservation-identified "Farmland" to non-agricultural use to a less than-than-significant level.	PS[1]	SU[2]
AGRICULTURE-2: By allowing urban development adjoining farmland and thereby creating the potential for land use conflicts, the General Plan Update could result in conversion of additional farmland to non-agricultural use.	**AGRICULTURE-2:** The following new implementing actions shall be added to the Land Use and Growth Management Element of the General Plan Update: • *Where proposed residential, commercial, or industrial development abuts lands devoted to agricultural use, require the non-agricultural uses to incorporate buffer areas to mitigate potential land use conflicts as a condition of approval for subdivision or use permit. The type and width of buffer areas shall be determined based on the character, intensity, and sensitivity of the abutting land uses.* • *Prepare and adopt guidelines and regulations to assist in the determination of the appropriate type and scope of agricultural buffer areas needed in circumstances that warrant the creation of such buffer areas.* These new implementing actions would reduce the impact to a less-than-significant level.	PS	LSM[3]
4.C Transportation and Traffic			
TRANS-1: Increased motor vehicle traffic would result in unacceptable level of service (LOS) at intersections and study roadway segments.	**TRANS-1:** The following new implementing actions shall be included in the General Plan Update: • *To reduce the effect of regional traffic on local streets, monitor traffic volumes and speeds on potential regional cut-through routes, including Oak Avenue and Valley View Street. Due to the forecast potential for traffic volumes to increase on Oak Avenue and Valley View Street, the City shall consider installing traffic calming or traffic diverting devices to discourage regional cut-through traffic with the goal of ensuring that,*	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.C Transportation and Traffic (cont.)			
TRANS-1 (cont.)	*over the duration of the General Plan, traffic volumes on these streets do not increase by more than 50 percent above current (2010) levels.* • *To ensure the multimodal Transportation Mitigation Fee (TMF) program serves as acceptable mitigation for the increase in traffic volumes resulting from buildout of the General Plan, the City shall prepare and adopt the TMF within 6 months of adoption of the General Plan Update. As part of this effort, the City shall conduct a fee study to ascertain whether the fees designated under the existing fee program should be revised*. With adoption of the new policies and implementing actions contained in the General Plan Update, including adoption of a Transportation Mitigation Fee program as recommended in Mitigation Measure TRANS-1, this impact would be reduced to a less-than-significant level.		
TRANS-2: Buildout of the General Plan Update could increase the number of vehicle miles traveled (VMT) per service population.	**TRANS-2:** Policies and implementing actions contained in the General Plan Update would reduce this impact, but the impact could remain significant due to regional factors influencing VMT that are beyond the city's control. (Significant and Unavoidable)	SU	SU
TRANS-3: Emergency access within St. Helena may be impacted by traffic congestion on State Route 29 and other local roads as addressed in Impact TRANS-1.	**TRANS-3:** The following new implementing action shall be included in the Circulation Element of the General Plan Update: *The City shall consider the use of signal preemption for emergency response or evacuation in locations where Fire Department response times are not met.* With adoption of the new policies and implementing actions contained in the General Plan Update (such as creating alternate travel routes to SR 29 and adopting policies to discourage single-occupant auto trips) and Mitigation Measure TRANS-1 and TRANS-3, this impact would be reduced to a less-than-significant level.	PS	LSM
4.D Air Quality			
AIR QUALITY-1: The General Plan Update does not provide adequate buffers between existing or new sources of odors and existing or new receptors.	**AIR QUALITY-1:** The following policy shall be added to the Land Use and Growth Management Element of the General Plan Update: • *The potential for sources of odors that could include restaurants, auto body shops or waste treatment facilities shall be considered when evaluating proposed residential developments and other projects with sensitive receptors*. The inclusion of this policy would reduce the impact to a less-than-significant level.	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.E Noise			
NOISE-1: New noise-sensitive land uses allowed by the General Plan Update may be exposed to unacceptable noise levels.	**NOISE-1:** The following policy shall be included in the Public Health, Safety and Noise Element of the General Plan Update: • *Adopt the State of California Administrative Code's (Title 24) minimum noise insulation performance standard of 45 dBA L_{dn} for all new residential construction including hotels, motels, dormitories, apartment houses, and single-family dwellings.* The proposed General Plan Update policies and implementing actions, in combination with the mitigation measure described above, would reduce the potential impact associated with noise and land use compatibility to a less-than-significant level.	PS	LSM
NOISE-2: Development in accordance with the General Plan Update would increase vehicle traffic, resulting in increases in traffic noise that would be substantial in some areas.	**NOISE-2:** The following new implementing action shall be included in the Public Health, Safety and Noise Element of the General Plan Update: • *Where significant traffic noise impacts on sensitive receptors are expected, reduce traffic noise levels through the installation of noise control measures including quiet pavement surfaces, noise barriers, traffic calming measures, and interior sound insulation treatments.* The implementation of noise-reducing treatments specified by this implementing action could feasibly reduce the potentially significant traffic noise impact on housing located along Valley View Street between Spring Street and Olive Avenue to a less-than-significant level.	PS	LSM
4.F Aesthetics			
AESTHETICS-1: New development that could occur with implementation of the proposed General Plan Update could create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	**AESTHETICS-1:** The following new policy shall be added to the Community Design Element of the General Plan Update: • *New development shall not result in significant light and glare that could affect residents, visitors, and wildlife. Lighting shall be shielded to reduce glare and shall be cast downwards. Outdoor new 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.* With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level.	PS	LSM
AESTHETICS-2: New development could result in the extension of overhead electrical lines within the city and add to the existing "visual clutter" created by overhead electrical lines, thus degrading the visual quality of scenic areas within the city.	**AESTHETICS-2:** The following new policy shall be added to the Community Design Element of the General Plan Update: • *The City shall encourage the undergrounding of any new electrical lines required to serve new development. In addition, funding sources to underground existing electrical lines shall be sought so that undergrounding of existing overhead electrical lines can occur over time.* With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level.	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.F Aesthetics (cont.)			
AESTHETICS-3: While State Route 29 has not been formally designated as a Scenic Highway, the State of California has indicated that this route is eligible for such designation. Without a formal designation, new development along this important corridor of the city could affect visual conditions.	**AESTHETICS-3:** The following new policy shall be added to the Community Design Element of the General Plan Update: • The city shall investigate the possibility of designating all or a portion of SR 29 that passes through the City of St. Helena as a scenic highway under the State's scenic highway program. With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level.	PS	LSM
4.G Biological Resources			
BIOLOGY-1: New development in accordance with the General Plan Update could inadvertently result in the loss of nests in active use protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, unless appropriate construction avoidance measures are implemented.	**BIOLOGY-1:** The following new policy shall be added to the Open Space and Conservation Element of the General Plan Update: • *As part of new development, avoid disturbance to and loss of bird nests in active use by scheduling vegetation removal and new construction during the non-nesting season (September through February) or by conducting a preconstruction survey by a qualified biologist.* With the inclusion of this new policy, the impact would be reduced to a less-than-significant level.	PS	LSM
BIOLOGY-2: New development in accordance with the General Plan Update could result in loss of or modifications to wetlands and other waters, requiring agency authorizations and appropriate mitigation.	**BIOLOGY-2:** The following new policy shall be added to the Open Space and Conservation Element of the General Plan Update: • *Avoid potential impacts on jurisdictional wetlands and other waters as part of new development to the maximum extent feasible. Where complete avoidance is not possible, the project applicant must secure any required authorizations from jurisdictional agencies and provide adequate replacement mitigation to ensure there is no net loss in habitat acreage or values.* With the inclusion of this new policy, the impact would be reduced to a less-than-significant level.	PS	LSM
BIOLOGY-3: New development in accordance with the General Plan Update could result in the loss of sensitive biological resources, including occurrences of sensitive natural communities and special-status species, requiring agency authorizations and appropriate mitigation.	**BIOLOGY-3:** General Plan Update Implementing Actions OS1.K, OS1.F, and OS1.G shall be revised as follows (new text underlined): *OS1.K Require environmental review of new agricultural uses, including, but not limited to, farming, horticulture, floriculture and viticulture, animal husbandry and livestock farming. The environmental review shall ensure that no sensitive biological resources would be adversely affected. Viticulture review must include the replanting of existing vineyards in accordance with County regulations.* *OS1.F Create a set of guidelines for the protection of special-status species and sensitive natural communities. Guidelines can include appropriate survey methods consistent with the California Department of Fish and Game, the U.S. Fish and Wildlife Service, NOAA Fisheries, and CEQA requirements.*	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.G Biological Resources (cont.)			
BIOLOGY-3 (cont.)	*OS1.G Require a biological assessment of any proposed project site where species or the habitat defined as sensitive or special-status by the California Department of Fish and Game, NOAA Fisheries, or the U.S. Fish and Wildlife Service might be present. Avoid potential impacts on sensitive resources as part of new development to the maximum extent feasible. Where complete avoidance is not possible, the project applicant must secure any required authorizations from jurisdictional agencies and provide adequate replacement mitigation to ensure there is no net loss in habitat acreage or values.* With the inclusion of the above revisions, the impact would be reduced to a less-than-significant level.		
4.H Cultural Resources			
CULTURAL-1: Rehabilitation and adaptive reuse of significant historic buildings, and new development within historic districts or adjacent to historical resources, could result in substantial adverse changes in the significance of historical resources.	**CULTURAL-1a:** The following implementing action shall be added to the General Plan Update: • *The City shall retain a qualified architectural historian, preservation architect, or preservation planner to assist with development of any neighborhood or citywide design standards, guidelines, or form-based codes that will be implemented in or adjacent to historic areas, e.g., the Downtown Commercial District, or adjacent to historic buildings*. **CULTURAL-1b:** The following language shall be added as a policy of the Historic Resources Element of the General Plan: • *Require that rehabilitation or restoration of historical resources be done according to the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Preservation, Rehabilitation, Restoration, Restoration, and Reconstruction of Historic Buildings*. Pursuant to the CEQA Guidelines, if a project's treatment of a historical resource conforms to the Secretary's Standards, potential impacts on historical resources would be mitigated to less-than-significant levels and would be categorically exempt under CEQA (CCR Sections 15064.5(b)(3) and 15331). With the inclusion of Mitigation Measures CULTURAL-1a and CULTURAL-1b, the potential impact on historical built environment resources that may occur from implementation of the General Plan Update would be reduced to a less-than-significant level.	PS	LSM
CULTURAL-2: Development allowed under the General Plan Update has the potential to cause a substantial adverse change in significant archaeological and paleontological resources.	**CULTURAL-2:** The following new policy shall be included in the Historic Resources Element of the General Plan Update: • *Prior to ground-disturbing development allowed under the General Plan Update, the City shall conduct a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System to determine if a project has the potential to affect an archaeological site and if additional project-specific study for cultural resources is recommended. The City shall require additional cultural resources study if recommended by the NWIC, with the study addressing project-specific impacts on archaeological and*	PS	LSM/SU

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.H Cultural Resources (cont.)			
CULTURAL-2 (cont.)	*paleontological resources. The City shall incorporate the study recommendations as project conditions of approval to ensure that impacts on archaeological and/or paleontological resources are mitigated.* With the inclusion of this new policy, this impact on archaeological and paleontological resources would be reduced to a less-than-significant level in most circumstances. However, prehistoric archaeological sites may contain cultural and human remains that have religious significance to local Native American representatives. In certain cases, impacts on such sites cannot be reduced to less-than-significant levels. Such impacts must be determined on a project-specific basis.		
4.I Energy			
None.			
4.J Greenhouse Gases			
None.			
4.K Geology and Soils			
GEOLOGY-1: Implementation of the General Plan Update would expose people or structures to substantial risk related to geologic or seismic hazards.	**GEOLOGY-1:** The General Plan Update shall be revised to include the following new policies and implementing actions in the Public Health, Safety and Noise Element: *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 geohazard 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.* *Action PS3.D: The City shall rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic hazards associated with proposed new development.* *Action PS3.E: All development and construction proposals shall be reviewed by the City to ensure conformance to applicable building standards. Recommendations of the geotechnical analysis shall be implemented.* With the inclusion of Mitigation Measure GEOLOGY-1, the potential impact would be reduced to a less-than-significant level.	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.L Hazards and Hazardous Materials			
HAZARDS-1: Development on former agricultural, commercial, or industrial properties may expose construction workers and future owners and users to contaminants from historic hazardous materials use and releases.	**HAZARDS-1:** The following new implementing action shall be added to the Public Health, Safety and Noise Element of the General Plan Update: • *Require environmental assessments during the planning for development in areas previously used for agricultural, commercial, or industrial uses. Remediation of identified contamination that may result in health risks to construction workers and future owners and users shall be required prior to approval of construction, demolition, and grading permits for development.* With the inclusion of this new implementing action, this potential impact would be reduced to less than significant.	PS	LSM
HAZARDS-2: New development that could occur with implementation of the General Plan Update could affect groundwater or surface water resources through the use and disposal of hazardous materials.	**HAZARDS-2:** Policy OS4.3 shall be modified to include groundwater and surface water resources: • *Promote best management practices to protect soil**, groundwater, and surface water** resources from industrial, agricultural and other uses that produce or dispose of hazardous or toxic substances.* With the inclusion of this revised policy, this potential impact would be reduced to less than significant.	PS	LSM
4.M Hydrology and Water Quality			
HYDROLOGY-1: Operation of development in accordance with the General Plan Update could violate water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality.	**HYDROLOGY-1:** General Plan Update Policies OS1.3 and OS3.2 and Implementing Actions OS3.A, OS1.A, and OS3.B shall be revised as follows (new text underlined and deleted text shown in strike-out): *OS3.A Manage stormwater runoff in compliance with the City's Stormwater and Runoff Pollution Control Ordinance, Stormwater Management Standards for Construction and Post-Construction, and the Development Manual Stormwater Standards, to ensure compliance with the City's NPDES permit. Implement a surface water quality monitoring program to evaluate the effectiveness of stormwater management program activities in reducing the discharge of pollutants to receiving waters to the maximum extent practicable.* *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.* *OS1.A Develop and adopt an ordinance for the protection, restoration and enhancement of creek corridors. The ordinance should consider the following:* • *Establish ~~development~~ setbacks for all new development projects and replanted agricultural land to protect stream function and riparian habitat, while ~~to~~ allowing for limited recreational uses, and access of the stream corridor for maintenance and flood control;* • *~~Encourage the proper~~ Restrict use of herbicides and insecticides associated with aquatic toxicity in areas near and adjacent to creeks, and ensure best management practices for all developments and industries;* • *Implement an Integrated Pest Management ordinance that includes provisions to minimize the reliance on pesticides that threaten water quality and to require the use of integrated pest management in municipal operations.*	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.M Hydrology and Water Quality (cont.)			
HYDROLOGY-1 (cont.)	• *Incorporate relevant actions and performance standards in TMDL implementation strategies for the Napa River to control discharges of pathogens and sediment.* *OS3.B Prevent water pollution from point and non-point sources, including runoff from agriculture, through implementation of required Best Management Practices in applicable permits, TMDLs, and the Plan for California's Nonpoint Source Pollution Control Program.* *OS3.2 Reduce stormwater runoff in developed areas to protect water quality in creeks. ~~Utilize~~ Incorporate sustainable low impact design features in ~~and "green"~~ the design of infrastructure ~~that facilitates natural drainage~~.* In addition, the following new implementing action shall be added to the Open Space and Conservation Element of the General Plan Update: • Provide appropriate permitting documents for project applicants requiring coverage under the Statewide National Pollutant Discharge Elimination System (NPDES) General Construction and Industrial Permits. With the inclusion of the above changes, this impact would be reduced to a less-than-significant level.		
HYDROLOGY-2: Construction and operation of development in accordance with the General Plan Update could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site, or create or contribute runoff water that would exceed the capacity of existing or planned storm sewer systems.	**HYDROLOGY-2:** General Plan Update Implementing Actions PF3.E and OS1.C shall be revised as follows (new text underlined and deleted text shown in strike-out): *PF3.E At the time of development review, require that post-project runoff be limited to pre-project peak flow rates ~~volumes~~ for the five-year and ten-year storms as a condition of approval.* *OS1.C Coordinate with the California Department of Fish and Game, the Living Rivers Council, the Regional Water Quality Control Board and other federal, state and local regional agencies with regulatory authority for water quality, protected plant and animal species, and streams and wetlands, to develop standards and implement a program to restore and maintain creek corridors.* With the inclusion of the above changes, this impact would be reduced to a less-than-significant level.	PS	LSM
HYDROLOGY-3: Development in accordance with the General Plan Update could place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place structures within a 100-year flood hazard area that would impede or redirect flood flows.	**HYDROLOGY-3:** General Plan Update Policies PF3.1, PF3.2, PS5.1, PS5.2, PS5.3 and Implementing Actions PF3.A, PF3.C, PF3.E, and PS5.F shall be revised as follows (new text underlined and deleted text shown in strike-out): *PF3.1 Ensure that new developments provide adequate drainage improvements and detention to mitigate flooding from increased stormwater runoff attributable to the development.* ~~*PF3.2 Prohibit grading and earth filling within the designated 100-year floodplain, except for public streets, bridges, parks, open space improvements and recreation uses. Prohibit creation of new parcels and building sites in the 100-year floodplain.*~~	PS	LSM

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.M Hydrology and Water Quality (cont.)			
HYDROLOGY-3 (cont.)	*PF3.A Require developers to provide adequate drainage improvements and detention to mitigate storm runoff from the site to the nearest major waterway. Drainage improvements can include measures such as creating settling basins, bio-swales and the use of pervious materials for driveways and parking areas. Key waterways include York Creek, Sulphur Creek and the Napa River.* *PF3.C Prohibit creation of new lots ~~Restrict new development~~ in the 100-year floodplain to reduce the potential for flood risks to life and property. New development proposals in the 100-year floodplain ~~areas~~ on existing lots of record are subject to discretionary review by the City and 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.* *PF3.E At the time of development review, require that post-project runoff be limited to pre-project peak flow rates ~~volumes~~ for the five-year and ten-year storms as a condition of approval.* *PS5.1 Minimize the risk to people, property and the environment caused by flooding hazards. Ensure that new development is sited to minimize potential damage from a 100-year flood. Continue to require that any new development that is allowed within the floodplain (on existing lots of record only) is constructed ~~so that the lowest floor elevation~~ to adhere~~s~~ to current FEMA standards and Municipal Code Chapter 15.52, Flood Damage Prevention. Prohibit the siting of uses within Flood Hazard Areas that could result in health and safety hazards due to the release of chemicals or other substances as a result of inundation or erosion.* *PS5.2 Ensure that new development on existing lots of record within the 100-year floodplain is properly graded, sited, and constructed to mitigate flood effects and does not cause increases or expansion of the flood area.* *PS5.F Review Municipal Code Chapter 15.52, Flood Damage Prevention, to ensure that regulations reflect best practices. Periodically update the City's flood hazard regulations in accordance with FEMA/NFIP regulations.* In addition, the following new implementing actions shall be included in the Public Facilities and Services Element of the General Plan Update: • Implement the requirements of FEMA relating to construction in Special Flood Hazards Areas as illustrated on Flood Insurance Rate Maps. • Implement low impact development practices for new development and redevelopment projects to reduce stormwater peak flow rates and volumes from smaller, more frequently occurring storm events. With the inclusion of the above changes, this impact would be reduced to a less-than-significant level.		

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TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.N Mineral Resources			
None.			
4.O Population and Housing			
None.			
4.P Public Services			
SERVICES-1: Development in accordance with the General Plan Update could interfere with emergency response or evacuation, particularly due to traffic increases on Highway 29.	**SERVICES-1:** Implement mitigation measures recommended in Section 4.C, Transportation. These measures would reduce the potential for traffic interference with emergency response and evacuation to a less-than-significant level.	PS	LSM
4.Q Recreation			
RECREATION-1: Development in accordance with the proposed General Plan Update could increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, particularly since the City's existing parkland inventory does not meet applicable standards for the amount of parkland per 1,000 residents.	**RECREATION-1:** Policies PR1.1 and PR1.3 and Implementing Action PR1.D shall be revised to increase the parkland standard from six acres of developed parkland per 1,000 residents (the minimum National Park and Recreation Association standard) to 10.5 acres per 1,000 residents (the maximum National Park and Recreation Association standard). This change would help to ensure that adequate parkland is provided to meet existing and future needs and would reduce the potential for deterioration of existing parkland to a less-than-significant level.	PS	LSM
4.R Utilities and Service Systems			
UTILITIES-1: Development in accordance with the General Plan Update would increase the demand for water, creating the potential for insufficient water supplies.	**UTILITIES-1a:** The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update (West Yost Associates, 2010b): • *Adopt a Water Conservation Program that includes the following actions:* - *Hire a full-time Water Conservation Coordinator;* - *Modify the water rate structure to increase high-tier rates;* - *Update the new construction offset program;* - *Fully develop the meter leak detection and monitoring program;*	PS	LSM

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TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.R Utilities and Service Systems (cont.)			
UTILITIES-1 (cont.)	- *Establish an Irrigation Advisory Service and promote "Smart Irrigation Controllers";* - *Adopt new requirements for "ultra-efficient" plumbing fixtures for new development and rebates for existing users;* - *Provide incentives for replacement of turf; and* - *Provide incentives for roofwater catchment.* This new implementing action could be expected to result in water savings of approximately 495 acre-feet per year, or approximately 23 percent of the projected metered water demand of 2,116 acre-feet per year (West Yost Associates, 2010b). This amount of water savings would reduce total projected water use to below the City's existing "Normal Year" supply of 2,000 acre-feet per year. This mitigation measure can be combined with Mitigation Measures UTILITIES-1b through UTILITIES-1d below to balance water supply and demand. **UTILITIES-1b:** The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update: • *The City of St. Helena shall not draw or sell any groundwater beyond that currently allowed until a safe yield has been identified through a study of the North Main Basin Aquifer by a qualified hydrogeologist.*[4] **UTILITIES-1c:** The following policies and implementing actions[5] shall be included in the Public Facilities and Services Element of the General Plan Update to further water conservation efforts: • *Adopt a Water Conservation Ordinance within two years of adoption of the General Plan Update that addresses requirements for water conservation within new developments, both residential and non-residential, and major reconstruction projects;* • *Develop and adopt a water pricing rate structure, both residential and non-residential, that fully recovers the capital and operating costs of the systems and is specifically designed to promote conservation, with the goal of bringing the City's per resident and per employee water use to levels in line with other cities of comparable size and makeup;* • *Develop and adopt a new approach to establishing "water conservation emergencies" that recognizes the complexity of the supply system and uses modeling of historical and future performance;*		

[4] The City currently follows a practice of limiting groundwater use to 20 percent of the total water supply when the City is not in a Water Shortage Emergency Phase, or in a Phase I Water Shortage Emergency. The City also limits groundwater use to 30 percent of the total water supply during a Phase II or higher Water Shortage Emergency Phase. With this restriction removed, groundwater pumping could increase by up to 100 acre-feet per year during a Normal Water Supply Year under the Likely Buildout Scenario and up to 350 acre-feet per year under the Full Buildout Scenario. The City's current Water Shortage Emergency Phase demand reduction measures reduce potable water demands in dry years so that groundwater pumping would be less than the Normal Year groundwater pumping.

[5] Most of these were recommended by the Water and Sewer Subcommittee of the General Plan Update Steering Committee.

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TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.R Utilities and Service Systems (cont.)			
UTILITIES-1 (cont.)	• *Maximize water purchases from the City of Napa until a monitoring system is in place to assess the long-term viability and recharge capability of the North Main Basin aquifer that supplies the City's wells;* • *Limit approval of any new residential housing development requiring City water to the minimum necessary to meet State housing mandates as identified by the Regional Housing Needs Assessment (RHNA), and limit approval of market rate, single-family housing to projects that help to finance housing needed to meet State housing mandates for affordable housing;* • *Aggressively promote adoption of "best practices" for reducing water usage in the existing housing stock;* • *Require that all new residential housing projects incorporate "best practices" for minimizing water usage;* • *Limit the rate of any future growth in residential and non-residential water usage to a level that can be offset by demonstrated, sustainable reductions in existing residential and/or non-residential water use;* • *Limit any future non-residential development to projects that incorporate "best practices" for water conservation;* • *Institute an ongoing process of mandatory audits of all existing non-residential water users to promote adoption of "best practices" for water conservation;* • *Develop a program of low cost financing to assist existing non-residential water users to retrofit their facilities to implement "best practices" for water conservation;* • *Provide the full-time capability in the City to implement and oversee water conservation policies and to pay for this capability out of water revenues rather than the General Fund;* • *Collaborate with the Napa Flood Control District to establish an ongoing monitoring program to assess the long-term viability and recharge capability of the North Main Basin aquifer that supplies the City's wells;* • *Retain a qualified hydrogeologist to evaluate the current performance of the North Main Basin Aquifer and pay for this position out of water revenues rather than the General Fund.* **UTILITIES-1d:** The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update: • *The City of St. Helena shall seek new sources of water, which may include an amended contract with the City of Napa to increase the available water supply and extend the contract beyond 2035.* UTILITIES-1a through UTILITIES-1d would combine to balance water supply and demand, reducing the potential water demand impact to a level that would be less than significant.		

[1] PS: Potentially significant [2] SU: Significant and unavoidable [3] LSM: Less than significant with mitigation

TABLE 2-1 (Continued)
IMPACTS AND RECOMMENDED MITIGATION MEASURES

Impact	Mitigation Measure	Level of Significance Prior to Mitigation	Level of Significance After Mitigation
4.R Utilities and Service Systems (cont.)			
UTILITIES-2: Development in accordance with the General Plan Update would increase wastewater generation to a level that may exceed available wastewater treatment capacity and applicable wastewater treatment requirements.	**UTILITIES-2a:** The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update: • *Reduce sewer system inflow and infiltration through repair and replacement of sewer pipes and removal of inflow sources*. The inflow to the City wastewater treatment plant increases during rainfall events and during times of high groundwater levels. The City currently requires developers to mitigate the dry weather flow of proposed developments by repairing or replacing sewer lines and thereby reducing the summer infiltration. This program is only implemented when a development is proposed. The City should develop an aggressive repair and replacement program targeted on areas of inflow and infiltration concern that were identified in the sewer system master plan and previous documents. **UTILITIES-2b:** The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update: • *Reduce average dry weather flow through development of a Water Conservation Program*. Much of the inflow to the City wastewater treatment plant during the summer dry weather months is composed of inside potable water use. The Water Conservation Program recommended under Mitigation Measure UTILITIES-1a would also reduce average dry weather flow into the wastewater treatment plant.	PS	LSM
Cumulative Impacts			
The analysis of the "Full Buildout Scenario" combined with other cumulative projects identified the following significant and unavoidable impacts: 1) cumulative traffic congestion; 2) cumulative traffic noise; 3) cumulative cultural resource impacts associated with unknown discoveries of human remains; 4) cumulative water demands due to insufficient supplies; and 5) cumulative demands for wastewater treatment.	The following measures recommended for the project would reduce the project's contribution to cumulative impacts but not to a less-than-significant level: TRANS-1; TRANS-2; NOISE-2; CULTURAL-2, UTILITIES-1a; UTILITIES-1b; UTILITIES-1c; and UTILITIES-1d.	PS	SU

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CHAPTER 3
Project Description

3.1 Introduction

View along Railroad Avenue

This Draft Program Environmental Impact Report (EIR) evaluates the potential environmental impacts of the Draft St. Helena General Plan Update (General Plan Update or St. Helena General Plan Update) (City of St. Helena 2010a). The proposed General Plan Update would be used to guide land use decisions in the St. Helena. The update would provide a long-term vision for the city and, through its policies and implementing actions, would indicate how that vision may be achieved over the life of the document. The General Plan Update would be the primary policy document for the City of St. Helena through the year 2030.

View north towards Mt. St. Helena from Adams Street.

California Government Code Section 65300 et seq. mandates that all counties and incorporated cities prepare a general plan that establishes policies and standards for future development, housing affordability, and resource protection. State law encourages cities to keep general plans current through regular updates. This General Plan Update is intended to make minor revisions to the adopted 1993 General Plan, with an emphasis on new policies related to sustainability, climate change, and multi-modal transportation options (to reduce private vehicular use). The General Plan Update would make few changes to the land use designation of the 1993 General Plan. The changes focus on a new Mixed-Use designation in the core areas of the City of St. Helena as a means of reducing reliance on the private automobile and encouraging a more sustainable land use pattern within the city. This new designation has primarily been applied to areas previously designated for Service Commercial use.

3.2 Project Objectives

CEQA Guidelines[1] Section 15124(b) requires a description of project objectives. This chapter, Project Description, outlines the objectives and guiding principles of the General Plan Update. The proposed General Plan Update would replace the existing 1993 General Plan in all elements,

[1] California Code of Regulations, Title 14, Chapter 3.

excluding the Housing Element which was completed and certified by the California Department of Housing and Community Development (HCD) in 2009. The existing 1993 General Plan has a horizon year of 2010. The proposed General Plan Update would establish a planning and policy framework that would extend to the horizon year of 2030.

3.2.1 Purpose of the General Plan Update

The City of St. Helena began its General Plan update process in April 2007. The General Plan Update would be the primary policy document for St. Helena as it moves toward the year 2030. The primary purpose of updating the city's adopted General Plan is to incorporate recent planning trends and policies regarding climate protection and sustainability, while reflecting the key policy needs of the city.

3.2.2 Objectives

The St. Helena General Plan Update expresses the city's vision for its physical, economic, social, and economic development through the year 2030. The General Plan Update goals, policies, and implementing actions provide for a sustainable community, a stable economy, and environmental stewardship. Specific General Plan Update objectives are as follows:

- Identify an overall vision for the city;
- Establish a basis for judging whether specific development proposals and public projects are consistent with the vision identified in the General Plan;
- Guide City departments, other public agencies, and private developers in the design of projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards;
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the city's Zoning Ordinance, specific and area plans, and the Capital Improvement Program;
- Provide estimates for projected population and employment growth to the year 2030;
- Protect the agricultural character of the city by focusing development in the developed portions of the city;
- Reduce congestion by providing alternative transportation choices, enhancing regional public transit connections, and achieving a better jobs/housing balance to reduce commuter trips;
- Promote healthy growth for the city at a rate that would not surpass infrastructure capabilities and available resources; and

- Increase the supply of affordable workforce housing to maintain St. Helena's quality of life and long-term economic sustainability.

3.3 Regional Location and Planning Boundaries

The City of St. Helena is approximately 65 miles north of San Francisco and 77 miles west of Sacramento. State Route 29 connects St. Helena to other communities in the Napa Valley, including Calistoga to the north and Yountville, Napa and American Canyon to the south. Figure 3-1 presents the regional context of the city.

State Route 29 connects St. Helena to other communities in the Napa Valley.

St. Helena (including its Sphere of Influence) encompasses a land area of 3,024 acres, as illustrated in Figure 3-2. The development pattern within this area includes an abundance of agricultural lands; business and industrial uses serving agricultural, single- and multi-family residential neighborhoods; and a downtown that serves as the commercial center for the city and surrounding communities. St. Helena has a population of approximately 6,000 residents. The city's Urban Limit Line (shown in Figure 3-2) generally separates developed areas from agricultural areas with the city limits.

3.4 General Plan Requirements

California Government Code Section 65300 defines a general plan as "a comprehensive, long-term plan for the physical development of the county or city, and any land outside its boundaries which in the planning agency's judgment bears relation to its planning." State requirements call for general plans that "comprise an integrated, internally consistent and compatible statement of policies for the adopting agency."

While considerable flexibility is allowed for general plans, state planning laws establish some requirements for the issues that general plans must address. The California Government Code establishes both the content of general plans and rules for their adoption and subsequent amendment.

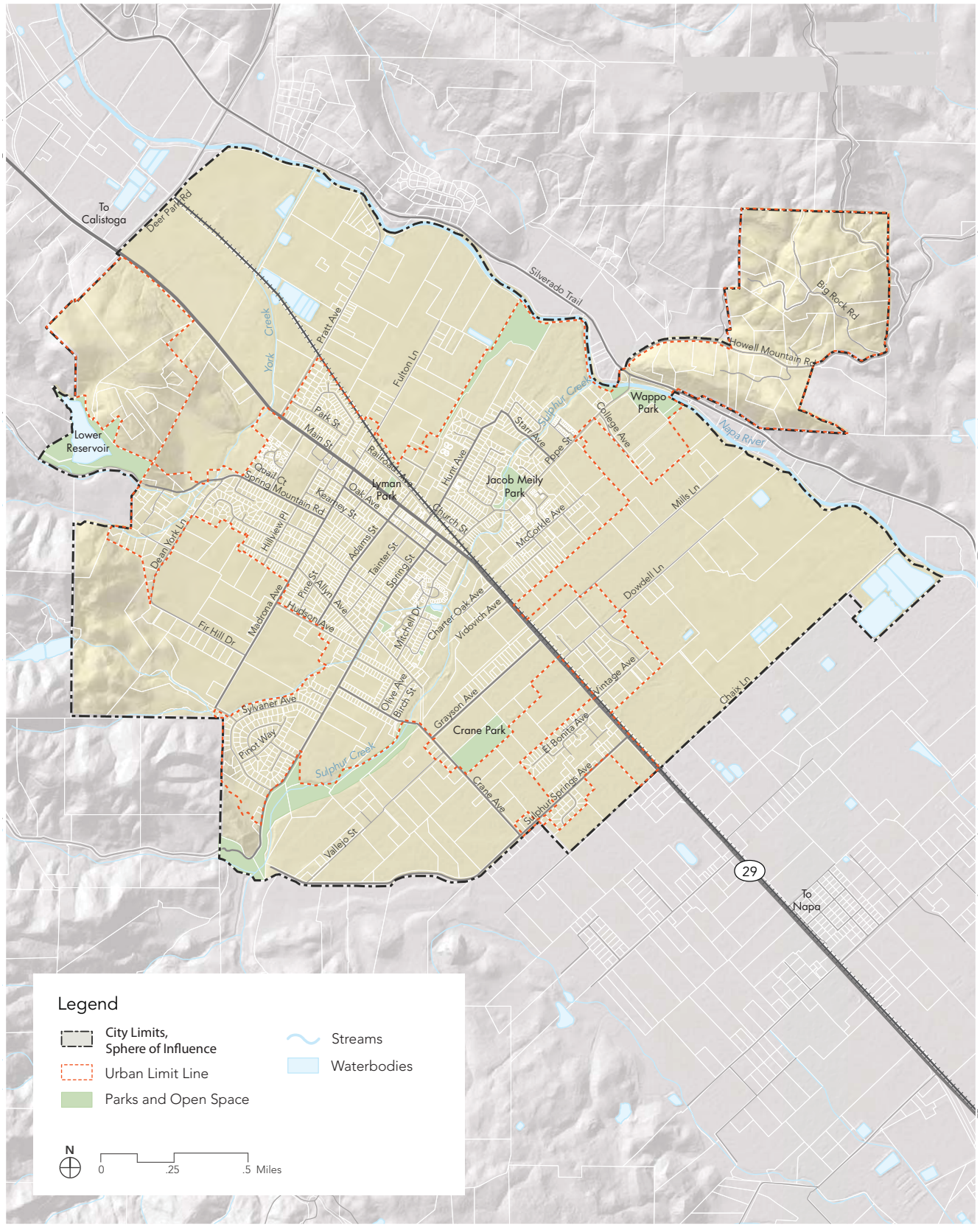
Together, state law and judicial decisions establish three overall guidelines for general plans:

- **The General Plan Must Be Comprehensive.** This requirement has two aspects. First, the general plan must be geographically comprehensive. That is, it must apply throughout the entire incorporated area and should include other areas that the city determines are relevant to its planning. Second, the general plan must address the full range of issues that affect the city's physical development.

SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 3-1
Regional Setting



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 3-2
Local Setting

- **The General Plan Must Be Internally Consistent.** This requirement means that the general plan must fully integrate its separate parts and relate them to each other without conflict. For example, the proposed land use recommendations must be consistent with the proposed transportation recommendations. The consistency requirement applies as much to figures and diagrams as to the general plan text. It also applies to data and analysis as well as policies. All elements of the general plan, whether required by state law or not, have equal legal weight. Thus, the general plan must resolve conflicts among the provisions of each element.

- **The General Plan Must Be Long-Range.** Because anticipated development will affect the city and the people who live or work there for years to come, state law requires every general plan to take a long-term perspective.

State statutes require that local general plans include the following seven elements, at a minimum: Land Use, Housing, Circulation, Open Space, Noise, Safety, and Conservation. State general plan guidelines encourage jurisdictions to reorganize or combine elements as appropriate to improve clarity and eliminate redundancy in the document. In addition, jurisdictions may incorporate additional elements as needed to achieve the community's vision and overarching goals.

3.5 St. Helena General Plan Update

This section addresses the various elements of the General Plan Update, the related vision, and the potential future growth that could occur.

3.5.1 Elements of the General Plan Update

The General Plan Update includes the following 12 elements:

- Land Use and Growth Management
- Economic Sustainability*
- Public Facilities and Services*
- Circulation
- Historic Resources*
- Community Design*
- Open Space and Conservation
- Public Health, Safety and Noise
- Climate Change*
- Housing
- Parks and Recreation*
- Arts, Culture and Entertainment*

* These are optional elements that are not required by state law.

In order to respond to the community's special needs and desires, the General Plan Update reorganizes some required plan components and incorporates several optional elements.

The 12 elements may be briefly summarized as follows:

- The **Land Use and Growth Management Element** addresses allowable land uses and desirable development patterns within the city.
- The **Economic Sustainability Element** focuses on the need for a sustainable economy responsive to short-term and longer-term community concerns.
- The **Public Facilities and Services Element** addresses services and utilities such as water, wastewater, storm drainage, solid waste, schools, and libraries.
- The **Circulation Element** addresses a comprehensive and multimodal transportation network to serve existing and future growth, as well as parking, transit, and pedestrian/bicycle usage. Standards and guiding principles for transportation facilities are addressed. Policies to reduce greenhouse gas emissions in the transportation sector are also included.
- The **Historic Resources Element** focuses on the city's historic resources and buildings and the potential for rehabilitation, retrofit, and adaptive reuse.
- The **Community Design Element** provides guidance for the quality and character of the community's built environment, building upon its distinct history while promoting new design approaches.
- The **Open Space and Conservation Element** focuses on the provision of open spaces and protection of natural and agricultural resources.
- The **Public Health, Safety and Noise Element** is a required element that addresses the protection of St. Helena's population from flooding, fires, excessive noise, hazardous materials, air pollution, and geologic and seismic hazards.
- The **Climate Change Element** is an optional element that many California communities are now including in their general plans. This element addresses energy conservation, renewable energy production, and reduced transportation-related and other sources of greenhouse gas emissions.
- The **Housing Element** identifies housing needs over the five-year period between 2009 and 2014, with policies to protect the existing housing stock while meeting the housing needs of all residents. The Housing Element provides for affordable housing throughout the city. (The State Department of Housing and Community Development formally certified the City's Housing Element on October 15, 2009. The Housing Element included in the General Plan Update is the existing, certified 2009 Housing Element.)

- The **Parks and Recreation Element** presents a framework for a comprehensive system of quality parks, trails, and recreational facilities.
- The **Arts, Cultural and Entertainment Element** aims to protect the city's identity, heritage, and cultural resources while expanding opportunities for art enrichment.

3.5.2 The General Plan Update Vision

As stated on page 1-9 of the General Plan Update:

> With an eye toward the future while building on the assets of today, the community of St. Helena envisions that, in the year 2030, the town will be a well-integrated place, linked by effective community institutions, safe neighborhoods and streets, and superior schools, parks and public facilities.

A large part of the vision is ensuring that future changes to St. Helena's social, economic, and environmental landscape meet the needs of both current residents and future generations. Guiding principles are outlined that address sustainability, a stable economy, and environmental stewardship.

A large part of the General Plan Update vision is ensuring that future changes to St. Helena's social, economic, and environmental landscape meet the needs of both current residents and future generations.

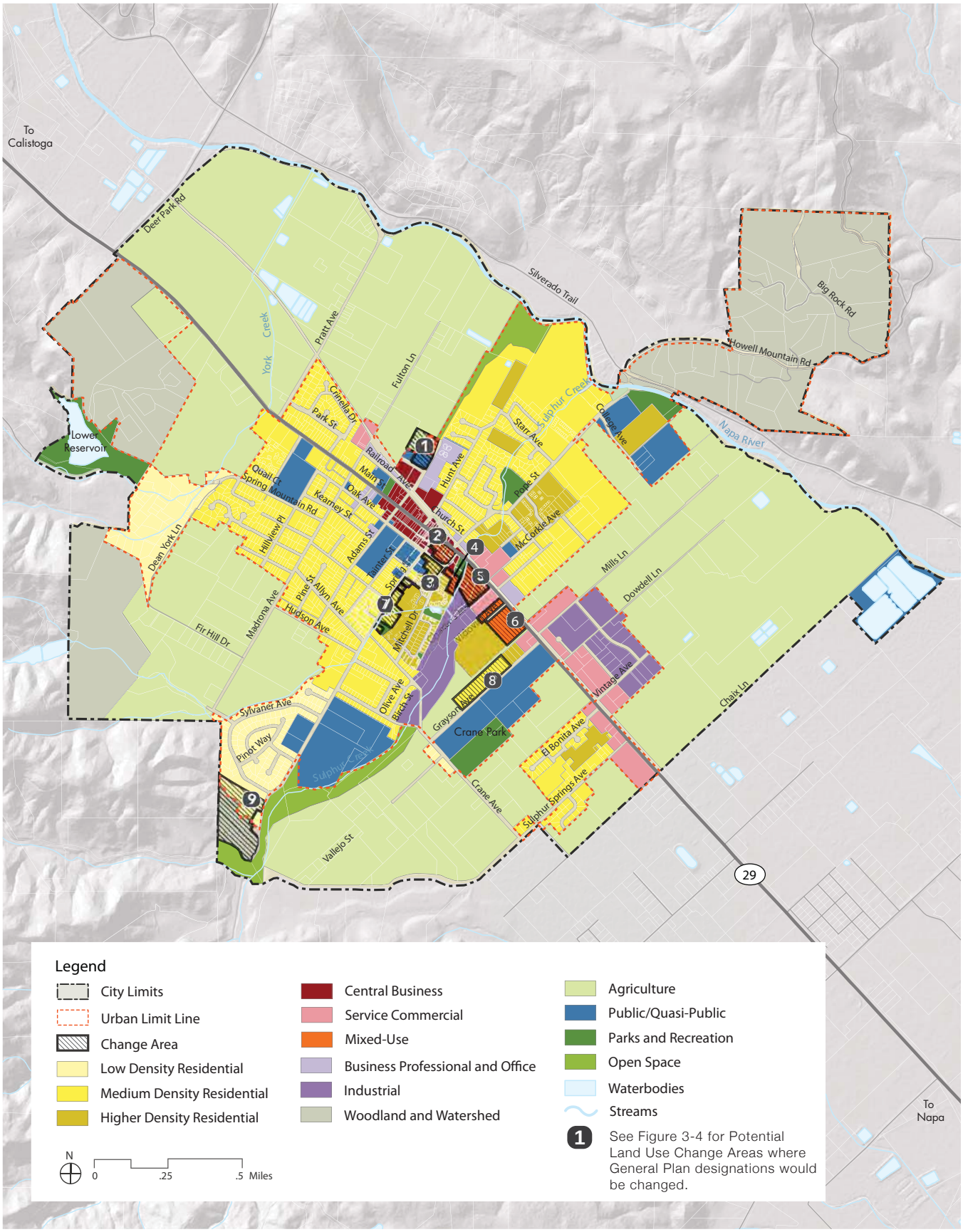
For sustainability, the General Plan Update addresses the need to provide affordable housing, to protect historic and agricultural features, and to focus on high-quality education. Economic principles address the desire to focus on central St. Helena as the cultural and economic heart of the community and the need for circulation improvements that reduce congestion and reduce dependency on the automobile. Environmental stewardship principles address the provision of adequate water and wastewater service, encouragement of green buildings and infrastructure, and protection of riparian corridors. Protection of agricultural resources, parks, hillsides, and landscaping are also guiding principles addressed in the General Plan Update.

3.5.3 General Plan Update Change Areas

The General Plan Update identifies nine areas for changes in land use designations.

During the General Plan update process, nine sites were identified for changes in land use designations, including sites for Mixed-Use, a new land use designation that would allow a combination of commercial and residential uses on the same site. The nine sites cover a total of 54.94 acres. These sites are located within the Urban Limit Line (with some minor shifts) and include parcels with existing commercial, residential, agricultural, and woodlands/watershed land use designations. The nine areas identified for changes in land use designations, which are shown in Figure 3-3, are as follows:

1) Adams Street and Library Lane (5.67 acres): The proposed development program for the Adams Street property includes a mix of public/quasi-public, mixed use, and agriculture. A modification of the Urban Limit



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 3-3
Proposed Land Use Changes

Line is also proposed, which would increase the developable area by 0.83 acre and orient development along Adams Street. The existing General Plan land use designations are Central Business and Agriculture.

2) Main Street, Spring Street and Oak Avenue (2.61 acres): A Mixed-Use designation is proposed for this area to allow a mix of commercial, office and residential development. Seventy-five percent of the site area (1.96 acres) is estimated as available for construction; the remaining 25 percent was determined to be unsuitable for construction due to flooding constraints. The existing General Plan land use designation is Central Business.

3) Mitchell Drive and Oak Avenue-Northwest (2.04 acres): Higher Density Residential is the proposed designation for this area to allow for higher density development within walking distance of downtown. The existing General Plan land use designation is Medium Density Residential.

4) Mitchell Drive and Oak Avenue-Southeast Side (1.58 acres): A Mixed-Use designation is proposed for this area to allow a mix of commercial, office, and residential development. Fifty percent of the site area (0.79 acre) is estimated as available for construction due to flooding constraints. The existing General Plan designation is Service Commercial.

5) Main Street and Charter Oak Avenue (4.7 acres): A Mixed-Use designation is proposed for this area to allow a mix of residential and commercial uses along Main Street. The existing General Plan designation is Service Commercial.

6) Main Street and Vidovich Avenue (7.31 acres): A Mixed-Use designation is proposed for this area to allow a mix of commercial, office, and residential development. Also, community input and General Plan Update Steering Committee recommendations indicate a desire for locating a hotel on this site. The existing General Plan designation is Service Commercial.

7) Spring Street and St. James Drive (4.65 acres): A Medium Density Residential designation is proposed for this area to accurately reflect existing densities. The existing General Plan designation is High Density Residential.

8) Grayson Avenue (7.01 acres): A Medium Density Residential designation is proposed on these parcels to allow more flexibility in density for this area. The existing General Plan designation is Low Density Residential.

9) South end of Spring Street (19.37 acres): The General Plan Update proposes modification to the Urban Limit Line and an identical shift expanding the Low Density Residential designation by 0.72 acre and the Woodland and Watershed designation by 0.72 acre. The existing General Plan designations are Low Density Residential and Woodlands & Watershed.

3.5.4 Potential Growth under the General Plan Update

The main areas for potential growth under General Plan Update would include the "Change Areas," the "Key Housing Opportunity Sites," and "Pipeline Projects."

Under the General Plan Update, the main areas for potential growth within St. Helena would include the "Change Areas," the "Key Housing Opportunity Sites," and "Pipeline Projects." These areas are shown in Figure 3-4. Change Areas have been identified as part of the General Plan Update; Key Housing Opportunity Sites were identified in the 2009 Housing Element; and Pipeline Projects are those projects currently under review by the City or tentatively proposed for the immediate future.

For the analysis in this EIR, two project "growth" scenarios are evaluated: (1) the "Likely Buildout Scenario," which reflects anticipated growth by the year 2030, the horizon year for the General Plan Update; and (2) the "Full Buildout Scenario," which assumes development of all potential growth areas and is evaluated in the cumulative impact analysis.

Likely Buildout Scenario

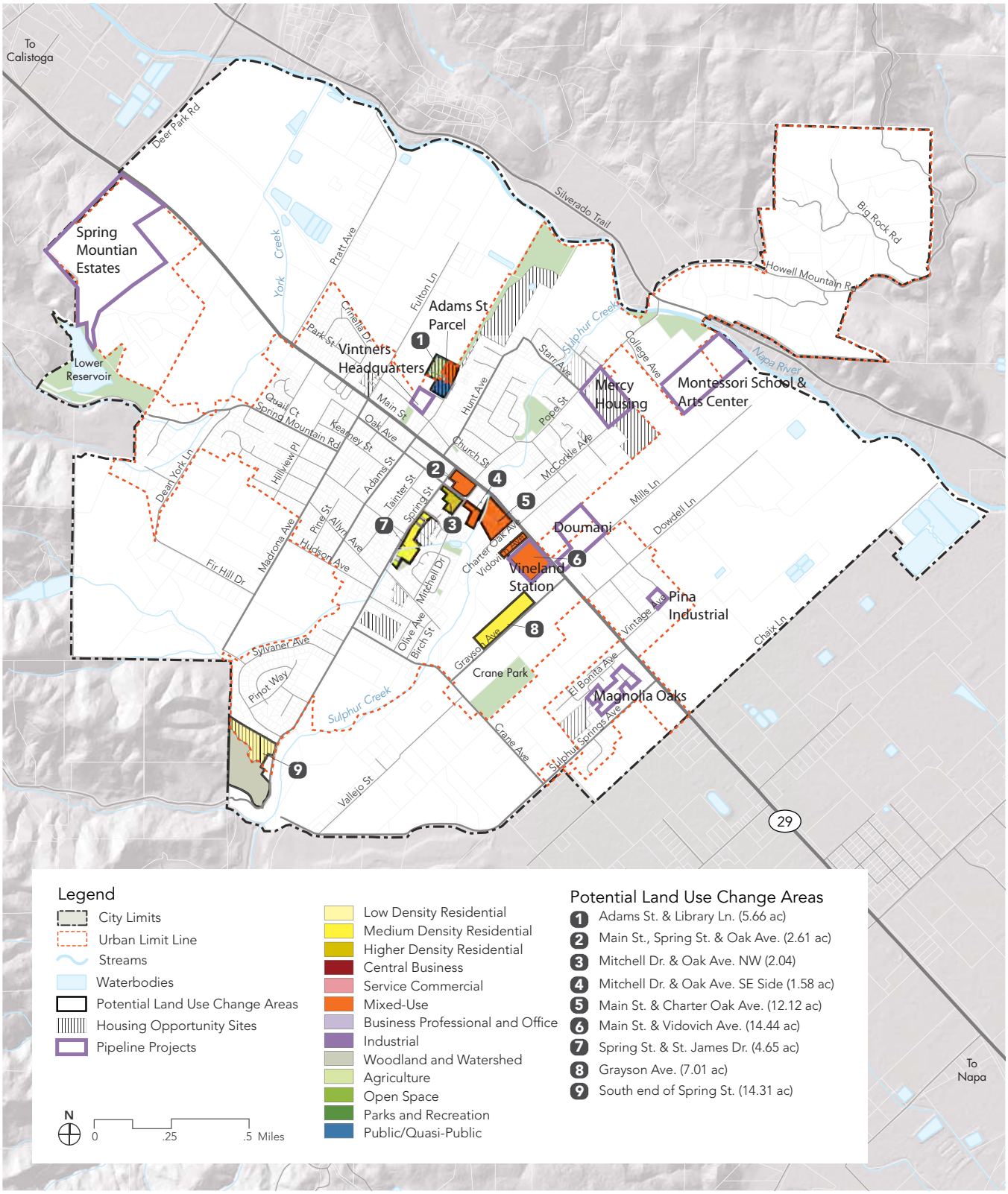
The Likely Buildout Scenario assumes a projected additional population of 921 persons and 379 new housing units within the city by 2030 (see Table 3-1). The projected 379 new units are assumed to be located within a combination of "Key Housing Opportunity Sites," "Change Areas," and/or "Pipeline Projects." The estimate was derived by assuming development of nine units per year for 20 years, increased by 36 units (20 percent) to account for affordable housing. Of the total of 379 units, 163 units are located within Pipeline Projects. Under this scenario, the population would increase by 921 to 7,021, a 15-percent increase over the city's existing population of 6,100.

TABLE 3-1
LIKELY BUILDOUT SCENARIO – RESIDENTIAL GROWTH

	Single-Family Units	Multi-Family Units[a]	Total Housing Units	Population Growth[b]
Development Allowed by Growth Management System (2030)[c]	173	43	216	525
Pipeline Projects	119	44	163	396
Total	**292**	**87**	**379**	**921**

[a] Assumes 20 percent of housing units to be multi-family based on land use designations for Change Areas and Key Housing Opportunity Sites.
[b] Assumes 2.43 persons per unit.
[c] Growth Management System limit assuming 9 units per year for 20 years and increased by 20 percent to account for affordable housing.

SOURCE: City of St. Helena, 2010b



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 3-4
Potential Growth Areas

The Likely Buildout Scenario assumes 379 new housing units and 277,104 square feet of new commercial uses in the city by 2030.

For employment growth, the Likely Buildout Scenario includes the "Pipeline Projects" and 50 percent of the commercial development associated with the "Change Areas," for a total of 277,104 square feet of new commercial uses (see Table 3-2). This commercial development would provide for approximately 560 new jobs, a 9-percent increase over the city's existing total of 5,810.

TABLE 3-2
LIKELY BUILDOUT SCENARIO – COMMERCIAL AND JOB GROWTH

	Total Commercial Square Footage	Jobs
Change Areas[a]	61,104	152
Pipeline Projects[b]	216,000	408
Total	**277,104**	**560**

[a] Assumes 50-percent buildout of projected commercial growth shown in Table 3-5.
[b] Assumes full buildout of Pipeline Projects shown in Table 3-6.

SOURCE: City of St. Helena, 2010

Full Buildout Scenario

For residential growth (see Table 3-3), the Full Buildout Scenario assumes full development of the nine Change Areas (see Table 3-7), Key Housing Opportunity Sites (see Table 3-8), and Pipeline Projects (see Table 3-9). This scenario assumes that 214 new residential units would be developed at the nine "Change Areas," and that all of the 514 units at the Key Housing Opportunity Sites identified in the recently approved City of St. Helena Housing Element (2009) would also be developed. A total of 163 units would be associated with Pipeline Projects. The resulting total of 891 new units would produce a population increase of 2,165, assuming an average of 2.43 persons per unit. The city's total population under the Full Buildout Scenario would be 8,265, an increase of 36 percent over the existing population of 6,100. The buildout year for the Full Buildout Scenario is the same as that for the Likely Buildout Scenario.

The Full Buildout Scenario assumes 891 new housing units and 338,208 square feet of new commercial uses in the city.

For employment growth, the Full Buildout Scenario assumes a total of 338,208 square feet of commercial development (see Table 3-4), consisting of 122,208 new square feet of commercial development associated with Change Areas (see Table 3-5) and 216,000 new square feet of commercial development associated with Pipeline Projects (Table 3-6). This commercial development would provide for approximately 711 new jobs, an 12-percent increase over the city's existing total of 5,810 jobs. As shown in Table 3-5, the new commercial square footage would include about 43,704 square feet of retail/ service uses, 43,704 square feet of office uses, and 34,800 square feet of public/quasi public uses in the Change Areas. The Pipeline Projects (see Table 3-6) would provide approximately 110,000 square feet of hotel uses, 90,000 square feet of office uses, and 16,000 square feet of industrial uses.

TABLE 3-3
FULL BUILDOUT SCENARIO – RESIDENTIAL GROWTH

	New Housing Units[a]	New Population[b]
Key Housing Opportunity Sites	514	1,249
Change Areas	214	520
Pipeline Projects	163	396
Total	**891**	**2,165**

[a] Assumes 20 percent of housing units to be multi-family based on land use designations for Change Areas and Key Housing Opportunity Sites.
[b] Assumes 2.43 persons per unit.

SOURCE: City of St. Helena, 2010b

TABLE 3-4
FULL BUILDOUT SCENARIO – COMMERCIAL AND JOB GROWTH

	Total Commercial Square Footage	New Jobs
Change Areas[a]	122,208	303
Pipeline Projects[b]	216,000	408
Total	**338,208**	**711**

[a] Assumes 100-percent buildout of projected commercial growth shown in Table 3-5.
[b] Assumes full buildout of Pipeline Projects shown in Table 3-6.

SOURCE: City of St. Helena, 2010b

TABLE 3-5
COMMERCIAL DEVELOPMENT AND JOBS WITHIN CHANGE AREAS

	New Square Footage[a]	New Jobs
Retail/Service (1 employee/500 square feet)[b]	43,704	87
Office (1 employee/300 square feet)[b]	43,704	146
Public/Quasi Public (1 employee/500 square feet)	34,800	70
Total	**122,208**	**303**

[a] Square footage estimates assume 50 percent of maximum allowed Floor Area Ratio.
[b] For commercial development, 50 percent of the square footage is applied to office and 50 percent is applied to retail/service. (Does not include Public/Quasi Public uses located on the Adams Street Parcel.)

SOURCE: City of St. Helena, 2010b

TABLE 3-6
COMMERCIAL DEVELOPMENT AND JOBS FROM PIPELINE PROJECTS

	New Square Footage	New Jobs
Pipeline Projects[a]		
Hotel (1 employee/1,200 square feet)	110,000	92
Office/Institutional (1 employee/300 square feet)	90,000	300
Industrial (1 employee/1,000 square feet)	16,000	16
Total	**216,000**	**408**

[a] Pipeline Projects include Doumani (office), Vineland Station Hotel, Pina Industrial, and Montessori School.

SOURCE: City of St. Helena, 2010b

TABLE 3-7
DEVELOPMENT CAPACITY OF LAND USE CHANGE AREAS

Name	Acres	Existing General Plan Land Use Designation	Proposed General Plan Land Use Designation	Number of Housing Units[a]	Commercial Square Feet[b]
1. Adams Street	1.77	Entire site composed of 2.65 acres of Central Business and 3 acres of Agriculture	Mixed-Use	28	8,000
	1.72		Public/Quasi Public	-	34,800
	2.18		Agriculture	-	-
2. Main Street, Spring Street and Oak Avenue	2.61	Central Business 1.96 acres (2.61 acres with 75% lot coverage due to flood constraints)	Mixed-Use	29	24,033 (64,033 capacity minus 40,000 existing)
3. Mitchell Drive and Oak Avenue-Northwest Side	2.04	Medium Density Residential	Higher Density Residential	33 (44 capacity minus 11 existing)	
4. Mitchell Drive and Oak Avenue-Southeast Side	1.58	Service Commercial	Mixed-Use	12	12,904
5. Main Street and Charter Oak Avenue	4.7	Service Commercial	Mixed-Use	39	42,471
6. Main Street and Vidovich Avenue	7.31	Service Commercial	Mixed-Use	See Pipeline Projects, "Vineland Station," Table 3-6	
7. Spring Street and St. James Drive	4.65	High Density Residential	Medium Density Residential	-	-
8. Grayson Avenue	7.01	Low Density Residential	Medium Density Residential	60	-
9. South end of Spring Street	7.07	5.47 acres of Low Density Residential and 12.6 acres of Woodlands & Watershed	Low Density Residential	13 (15 capacity minus 2 existing)	-
	12.30		Woodland and Watershed	-	-
Total	**54.94**			**214**	**122,208**

[a] Unless otherwise noted, the mid-point of allowed dwelling units per acre (DU/AC) is applied to determine the potential housing units.
[b] Unless otherwise noted, 75 percent of the allowed commercial floor area ratio (FAR) is applied to determine the potential square footage of commercial development. Central Business and Mixed-Use sites have an allowed FAR of 1.0; Service Commercial sites have an allowed FAR of .50.

NOTE: Development capacity refers to residential or commercial development minus existing development (net).

SOURCE: City of St. Helena, 2010b

TABLE 3-8
DEVELOPMENT CAPACITY OF KEY HOUSING OPPORTUNITY SITES

Name	Acres	Zoning	Development Capacity – Number of Housing Units[a]
1. Hunter Property	17.1	Medium Density Residential	181
2. Romero Property [b]	10.0	Medium Density Residential	See Pipeline Projects, "Mercy Housing," Table 3-9
3. Particelli Property	9.0	Medium Density Residential	84
4. Dickson Property	1.5	Medium Density Residential	16
5. Paladini Property	5.3	Medium Density Residential	56
6. Quaglia Property	4.4	Medium Density Residential	46
7. Aves property	4.6	Medium Density Residential	49
8. Jatsek Property	0.5	High Density Residential	12
9. Aslanian Property	2.4	High Density Residential	46
10. Aslanian Property			
11. Montelli Property	1.8	Medium Density Residential	24
Total			**514**

[a] The mid-point of allowed units per acre (DU/AC) is applied to determine the potential housing units.
[b] The Romero Property, also referred to as the Mercy Housing Project, is included in Pipeline Projects and therefore is not included in the total of this list to avoid double-counting.

SOURCE: City of St. Helena, 2010b

TABLE 3-9
RESIDENTIAL DEVELOPMENT CAPACITY OF PIPELINE PROJECTS

	Housing Units	Population[a]
Pipeline Projects[b]	163	396

[a] Assumes 2.43 persons per unit.
[b] Pipeline Projects include Mercy Housing (98 units), Spring Mountain Estates (10 units), Vineland Station (10 units), and Magnolia Oaks (45 units).

SOURCE: City of St. Helena, 2010b

Change from Existing Conditions

Table 3-10 summarizes the changes between existing conditions and future conditions under the Likely Buildout Scenario and Full Buildout Scenario.

TABLE 3-10
CHANGES BETWEEN EXISTING CONDITIONS AND FUTURE CONDITIONS
(LIKELY BUILDOUT SCENARIO AND FULL BUILDOUT SCENARIO)

		Likely Buildout Scenario			Full Buildout Scenario		
Factor	**Existing Conditions**	**Increase**	**Total**	**Percent Change from Existing**	**Increase**	**Total**	**Percent Change from Existing**
Population	6,100[a]	+921	7,021	+15.1%	+2,165	8,265	+35.5%
Number of Housing Units	2,751[b]	+379	3,130	+13.8%	+891	3,642	+32.4%
Commercial Square Footage	7,093,612[c]	+277,104	7,370,716	+3.9%	+338,208	7,431,820	+4.8%
Number of Jobs	5,810	+560	6,370	+9.6%	+711	6,521	+12.2%

[a] ABAG. 2009. Projections and Priorities 2009: Building Momentum.
[b] California Department of Finance. 2010. E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark.
[c] Area calculated by measuring the parcels within the industrial, central business, and service commercial districts.

SOURCE: City of St. Helena, 2010b; ESA, 2010

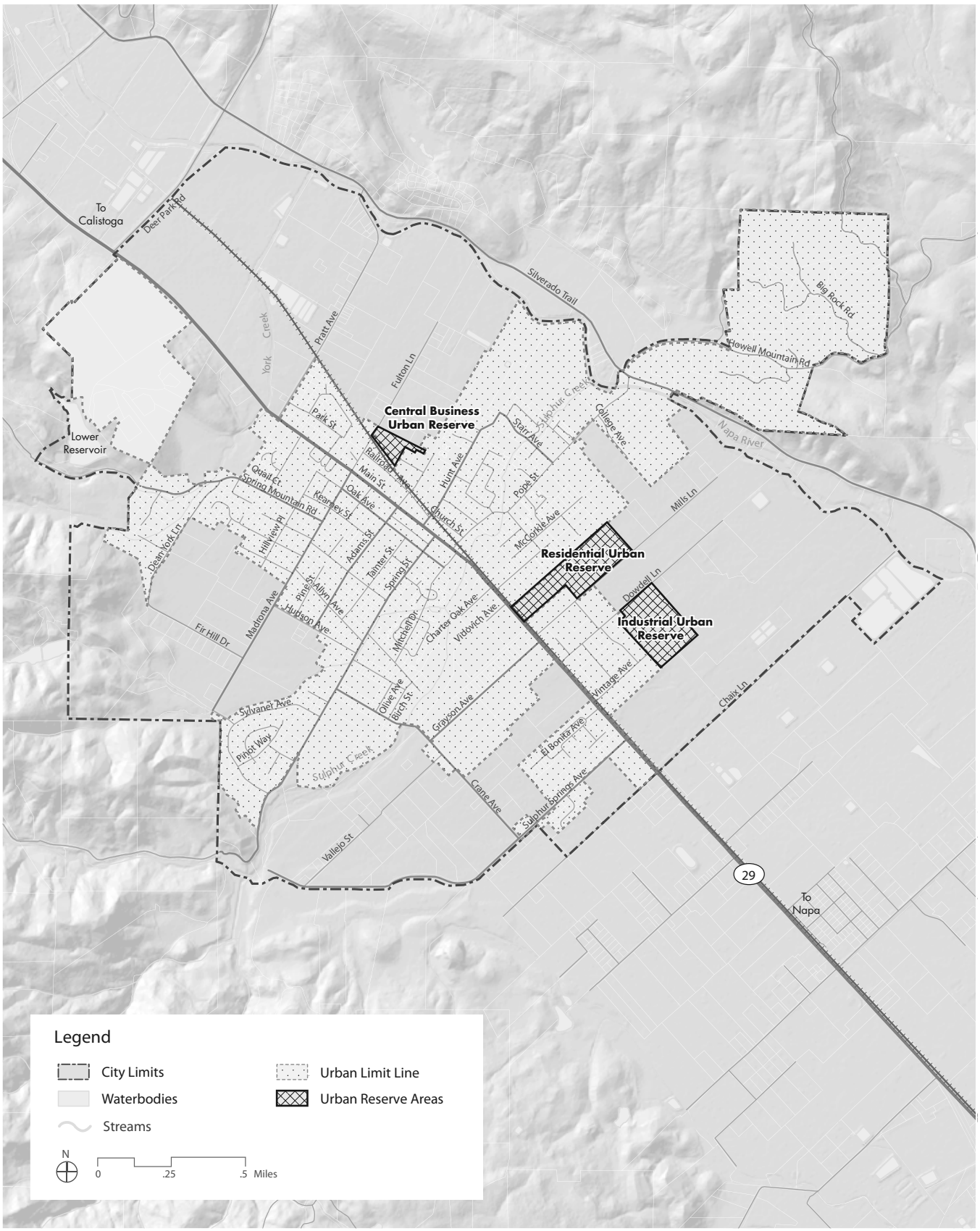
Urban Reserve Areas

The General Plan Update identifies three Urban Reserve Areas that could be considered for development after areas within the Urban Limit Line are developed.

The proposed General Plan Update identifies three "Urban Reserve Areas" that "can be considered for urban development after urban sections within the Urban Limit Line are developed and if additional land is needed for urban uses" (City of St. Helena, 2010a). These same areas were so designated in the 1993 General Plan and would not be changed under the proposed General Plan Update. Figure 3-5 illustrates the locations of the three Urban Reserve Areas. As shown in Figure 3-5, the Urban Reserve Areas consist of (1) a "Central Business Urban Reserve" area located south of Fulton Lane and east of the railroad tracks, (2) a "Residential Urban Reserve" area located on the east side of State Route 29 north of Mills Lane, and (3) an "Industrial Urban Reserve" area located east of State Route 29 on the south side of Dowdell Lane. The General Plan Update designates the Urban Reserve Areas for Agriculture land uses.

3.6 Adoption and Future Use of the General Plan Update

Once the General Plan Update is adopted by the St. Helena City Council, it would provide a basis for a variety of future, subsequent activities and actions. This EIR may be used as the basis for adopting the General Plan Update and for future, subsequent actions in accordance with the General Plan Update.



SOURCE: City of St. Helena 2010

St. Helena General Plan Update EIR . 210147

Figure 3-5
Proposed Urban Reserve Areas

3.6.1 Adoption of the General Plan Update

The St. Helena General Plan Update will be presented to the City of St. Helena Planning Commission for review and comment prior to adoption. The General Plan Update will then be presented to the St. Helena City Council for adoption. As part of the adoption of the General Plan Update, the City Council will take the following actions:

- Certification of the General Plan Update EIR;
- Adoption of required findings for EIR certification, including required findings under CEQA Guidelines Sections 15090, 15091, and 15093;
- Adoption of the General Plan Update; and
- Adoption of a Mitigation Monitoring and Reporting Program (MMRP).

3.6.2 Future Use of the General Plan Update

After the adoption of the proposed General Plan Update by the St. Helena City Council, all subsequent activities and development within the city would be subject to, and must be consistent with, the policies set forth in the adopted General Plan Update. Some of these activities would include residential developments that would be subject to Tentative Subdivision Map approval, rezoning, and design review approval. Commercial, office, and industrial uses would be subject to design review and use permit approval, and possibly Tentative Subdivision Map approval, depending on use. Public agency-sponsored development, such as additions or improvements to public services including schools and parks, roadways, and infrastructure, would also be required to be consistent with the policies set forth in the adopted General Plan Update.

After adoption of the General Plan Update, all subsequent activities and development in the city must be consistent with its policies.

City of St. Helena Actions

Subsequent actions that may be taken by the City in accordance with the General Plan Update include, but are not limited to, the following:

- Amendment of the St. Helena Zoning Ordinance so that the city zoning maps are consistent with the General Plan Update land use map;
- Implementation of financing programs or fee programs for public facilities;
- Approval of subsequent development applications;
- Approval of subsequent public facility and roadway improvement projects; and
- Additional land use studies and/or planning.

Other Governmental Agency Actions

Additional subsequent approvals and permits from local, regional, state, and federal agencies that may be required to carry out future development projects in accordance with the General Plan Update include, but are not limited to, the following:

- Napa County Local Agency Formation Commission (LAFCO) approval of revised service areas or spheres of influences for service districts, if applicable;
- Bay Area Air Quality Management District (BAAQMD) approval of dust control plans and other permits for subsequent projects;
- California Department of Transportation (Caltrans) approval of improvements and/or funding for future improvements on State Route 29;
- Extension of service and/or expansion of infrastructure facilities by area service districts, if applicable;
- California Department of Fish and Game (CDFG) approval of potential future streambed alteration agreements, pursuant to the Fish and Game Code, and approval of any future potential take[2] of state-listed wildlife and plant species covered under the California Endangered Species Act;
- Regional Water Quality Control Board (RWQCB) approval of any activity affecting St. Helena water features, pursuant to the Clean Water Act and RWQCB standards;
- U.S Army Corps of Engineers (USACE) approval of any future wetland fill activities, pursuant to the Clean Water Act; and
- U.S. Fish and Wildlife Service (USFWS) approvals involving any future potential take of federally-listed wildlife and plant species and their habitats covered under the Federal Endangered Species Act.

References

City of St. Helena. 2010a. *St. Helena General Plan Update 2030* (Draft), February.

City of St. Helena. 2010b. City of St. Helena Notice of Preparation (Revised), City of St. Helena General Plan Update 2030 Program Environmental Impact Report. April 19.

[2] To "take" a listed, threatened, or endangered species is to harm, harass, injure, kill, capture, collect, or otherwise hurt any individual of the species. "Take" is further defined in Section 4.G, Biological Resources, of this EIR.

CHAPTER 4

Environmental Setting, Impacts and Mitigation Measures

4.0 Introduction

This section addresses the impacts of the St. Helena General Plan Update at a programmatic level for the following 18 topics:

- Land Use and Planning
- Agricultural and Forestry Resources
- Transportation and Traffic
- Air Quality
- Noise
- Aesthetics
- Biological Resources
- Cultural Resources
- Energy
- Greenhouse Gas Emissions
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Utilities and Service Systems

Each of the 18 topic sections in this EIR presents information in three parts as described below.

Introduction

This section addresses an overview of the topics covered and the primary studies and other documents used in report preparation. All of these reports and documents are incorporated by reference into this EIR.

Environmental Setting

This section briefly describes elements of the project setting relevant to a discussion of impacts in the topic category. The setting section identifies the baseline conditions against which project impacts are compared.

Environmental Impacts and Mitigation Measures

This section identifies potential impacts based on the identified significance criteria. If impacts are determined to be less than significant, these are summarized under the subsection entitled "Less-than-Significant Impacts." Potentially significant project-specific impacts are numbered and summarized in **bolded** text. The level of significant prior to mitigation is also identified. The bolded text is then followed by a discussion of the particular impact. Mitigation measures (indented text) that can reduce such impacts follow this discussion with a number that corresponds to the number of the impact. A statement regarding the level of significance of each impact after mitigation follows the mitigation measures for that impact.

For some of the recommended mitigation measures, the EIR recommends new policies for the St. Helena General Plan Update and these are shown in *italics*. Where recommended changes to proposed policies occur, new text is shown with <u>underlining</u> and removed text is shown with ~~cross-outs~~.

4.A Land Use and Planning

Introduction

This section describes existing land uses within St. Helena, reviews the existing plans and policies that guide development in the city, and evaluates the potential land use and planning impacts of the General Plan Update.

Setting

Regional Setting

St. Helena sits at the heart of the upper Napa Valley.

St. Helena is centrally located in Napa County and sits at the heart of the upper Napa Valley, a region known for its diverse soils, microclimates, and success as a center for agriculture and the wine-making industry. The city is located approximately 65 miles north of San Francisco and 77 miles west of Sacramento. Highway 29 connects St. Helena to other communities in the valley, including Calistoga to the north and Yountville, Napa, and American Canyon to the south. The city serves as a commercial and business center for the surrounding towns and unincorporated areas, including Calistoga, Angwin, Deer Park, Rutherford and the unincorporated area south of St. Helena.

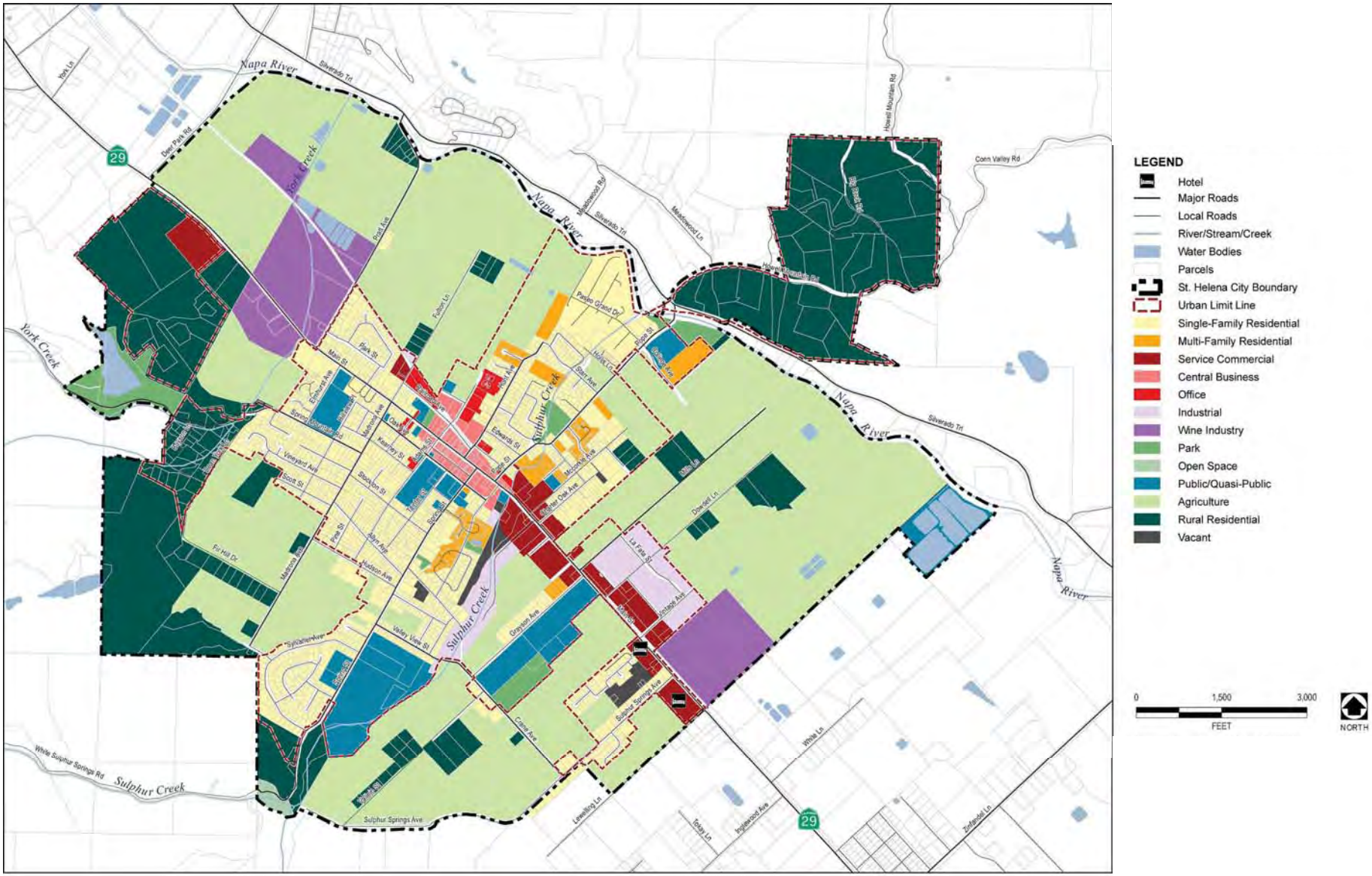
Local Setting

St. Helena and city limits encompass a land area of approximately 2,940 acres.[1] The area contains agricultural lands, business and industrial uses serving agricultural areas and single- and multi-family residential neighborhoods, and a downtown that extends along Highway 29 and serves as the commercial center for the city and surrounding communities.

Agricultural lands comprise approximately 42 percent of the area within the city limits, with most acreage actively cultivated with vineyards. Within the urbanized areas of the city, residential land uses occupy the majority of land area.

The City of St. Helena has established an Urban Limit Line within the incorporated city limits that encompasses the urbanized areas of the city. Most agricultural lands within the city limits are located outside the Urban Limit Line. Figure 4.A-1 shows the boundaries of the Urban Limit Line and city limits.

[1] If streets, railroads, and other rights-of-way are included, the acreage increases to about 3,024 acres.



SOURCE: City of St. Helena 2007

St. Helena General Plan Update EIR . 210147

Figure 4.A-1

Existing Land Uses in St. Helena

Existing Land Uses

Figure 4.A-1 illustrates existing land uses in St. Helena. As shown in the figure, existing land uses include residential, commercial, industrial, public, parks and recreation, and agricultural uses. Table 4.A-1 lists existing land uses by total acreage and by acreage within and outside the Urban Limit Line.

TABLE 4.A-1
EXISTING LAND USE DISTRIBUTION, 2007

	Within Urban Limit Line		Outside Urban Limit Line		Total Within City Limits	
Land Use	**Acres**	**Percent**	**Acres**	**Percent**	**Acres**	**Percent**
Rural Residential[a]	408.64	31.3	256.45	15.7	665.09	22.6
Single-Family Residential	417.08	31.9	12.67	0.8	429.75	14.6
Multi-Family Residential	47.17	3.6	---	---	47.17	1.6
Service Commercial	71.26	5.5	---	---	71.26	2.4
Central Business	23.13	1.8	---	---	23.13	0.8
Office	13.75	1.0	---	---	13.75	0.5
Industrial	58.22	4.5	---	---	58.22	2.0
Winery Industry	---	---	151.49	9.3	151.49	5.2
Agriculture	108.18	8.3	1,138.18	69.6	1,246.36	42.4
Open Space	---	---	5.07	0.3	5.07	0.2
Park	19.64	1.5	40.02	2.4	59.66	2.0
Public/Quasi-Public	122.98	9.4	31.11	1.9	154.09	5.2
Vacant	15.58	1.2	---	---	15.58	0.5
TOTAL	**1,305.63**	**100.0**	**1,634.99**	**100.0**	**2,940.62**	**100.0**

Acres listed do not include acreage of streets, railroad, or other rights-of-way.

[a] The Rural Residential land use category consists of woodland/watershed and small agricultural parcels.

SOURCE: City of St. Helena, 2007

Residential Uses

The main core of residential development is located off Highway 29 (Main Street) and in the west side of town.

The main core of residential development is located off Highway 29 (Main Street) and in the west side of town, extending in a northeast-southwest direction (see Figure 4.A-1). Housing in the residential areas consists mostly of single-story, detached houses. As shown in Figure 4.A-1, some residential areas, especially rural residential areas farther from the town center, abut agricultural uses. Multi-family housing developments are situated mainly in the central core of the city, typically adjoining single-family areas.

As shown in Table 4.A-1, single-family housing occupies approximately 430 acres (14.6 percent) of the total land area within the city limits. Rural residential areas occupy approximately 665 acres (22.6 percent), and multi-family housing occupies approximately 47 acres (1.6 percent).

Commercial Uses

Commercial uses located along or near Highway 29 (Main Street).

Commercial uses, including service commercial, office, and central business uses, are located along or near Highway 29 (Main Street) (see Figure 4.A-1). Commercial uses along Main Street extend from north of Adams Street to Lewelling Lane, at the southerly city limits, and occupy both sides of the street for most of this length. At the center of town, between Spring and Adams streets, the commercial uses expand beyond Main Street onto intersecting and parallel streets, such as Kearney Street, Oak Avenue, Church Street, and Hunt, Library, and Railroad avenues.

As shown in Table 4.A-1, service commercial uses occupy approximately 71 acres (2.4 percent) of the total land area within the city limits. Central business uses occupy approximately 23 acres (0.8 percent), and office uses occupy approximately 14 acres (0.5 percent) of the city's total land area.

Industrial Uses

Two main areas of industrial use are identified in St. Helena: (1) a former sand and gravel quarry and other industrial uses north of Grayson Avenue, in the vicinity of Sulphur Creek; and (2) a light industrial park located east of Main Street and south of Mills Lane (see Figure 4.A-1). Additional winery-related uses are located along Main Street at the northern and southern ends of the city (see Figure 4.A-1).

As shown in Table 4.A-1, industrial uses occupy approximately 58 acres (2.0 percent) of the total land area within the city limits, and winery industry uses occupy approximately 152 acres (5.2 percent).

Public and Quasi-Public Uses

Public and quasi-public uses in St. Helena include government-owned facilities, schools, and churches. As shown in Figure 4.A-1, these uses are located mainly in the area west of Main Street. As shown in Table 4.A-1, public and quasi-public uses occupy approximately 154 acres (5.2 percent) of the total land area within the city limits.

Parks and Recreational Uses

Parks and recreational uses are located throughout the central part of St. Helena (see Figure 4.A-1). As shown in Table 4.A-1, park uses occupy approximately 59 acres (2.0 percent) of the total land area within the city limits, although this estimate includes sites such as the 21.65-acre, City-owned "Lower Reservoir" property that have not yet been developed for park use. (See further discussion in Section 4.Q, Recreation.)

Agricultural Uses

Agriculture is the predominant land use by area in the City of St. Helena.

As noted above and shown in Figure 4.A-1, agriculture is the predominant land use by area in the City of St. Helena. Agricultural uses are found adjacent to the Urban Limit Line of the city with large areas in the northeast and southeast ends of the city, where they extend from approximately Main Street to the Napa River.

Most parcels used for agriculture are relatively large, and most are used for viticulture. In some areas, agricultural lands adjoin or have been surrounded by urban uses, as shown in Figure 4.A-1.

Most of the agricultural land is located outside the Urban Limit Line. As shown in Table 4.A-1, agricultural uses occupy approximately 1,246 acres (42.4 percent) of the total land area within the city limits. Of that total, approximately 108 acres are located within the Urban Limit Line and approximately 1,138 acres are located outside the Urban Limit Line.

For more discussion of agricultural uses, see Section 4.B, Agricultural and Forestry Resources, of this EIR.

Regulatory Framework

ABAG Regional Housing Needs Allocation

The Association of Bay Area Governments (ABAG) allocates housing needs for each city and county in the region according to four specified income levels, so that each jurisdiction can make plans to provide for its "fair share" of regional housing needs by income group. ABAG's most recent projected housing needs are for the period 2007 to 2014. ABAG has determined that a total of 121 housing units would be needed in St. Helena during this seven-year period, consisting of 30 units affordable to *very low-income* households, 21 units affordable to *low-income* households, 25 units affordable to *moderate-income* households, and 45 units affordable to *above moderate-income* households (ABAG, 2008). These "fair-share" totals represent the ABAG-projected number of units that would need to be added to St. Helena's housing stock over the period 2007 to 2014 in order to achieve an equitable distribution of housing opportunities. (See further discussion in Section 4.O, Population and Housing, of this EIR.)

Napa County General Plan

Provisions of the Napa County General Plan apply to unincorporated areas of Napa County, including unincorporated areas adjoining the St. Helena city limits.

The Napa County General Plan applies to unincorporated areas of Napa County, including areas adjoining the St. Helena city limits.

The Napa County General Plan land use map designates the areas north and south of the city limits for Agricultural Resource land uses and the areas east and west of the city for Agricultural, Watershed & Open Space land uses.

The Napa County General Plan contains a series of policies for an area identified as "South St. Helena," located immediately south of the city limits. Recognizing that this area is designated for Agricultural Resource land uses but contains existing residences and businesses, the General Plan allows existing parcels zoned for commercial uses as of February 1, 1990 "to develop commercial uses and mixed residential-commercial uses which are permitted by the existing commercial zoning as if they were designated on the land use map for these uses" (County of Napa, 2009).

Napa County Local Agency Formation Commission

The Napa County Local Agency Formation Commission (LAFCo) is an independent County agency established by State law. LAFCo has approval authority regarding changes in organization to cities, including annexations, detachments, new formations, and incorporations. LAFCo approval is necessary for changes to St. Helena's city limits or Sphere of Influence. Action by LAFCo in 2009 modified the Sphere of Influence to be co-terminus with the city limits.

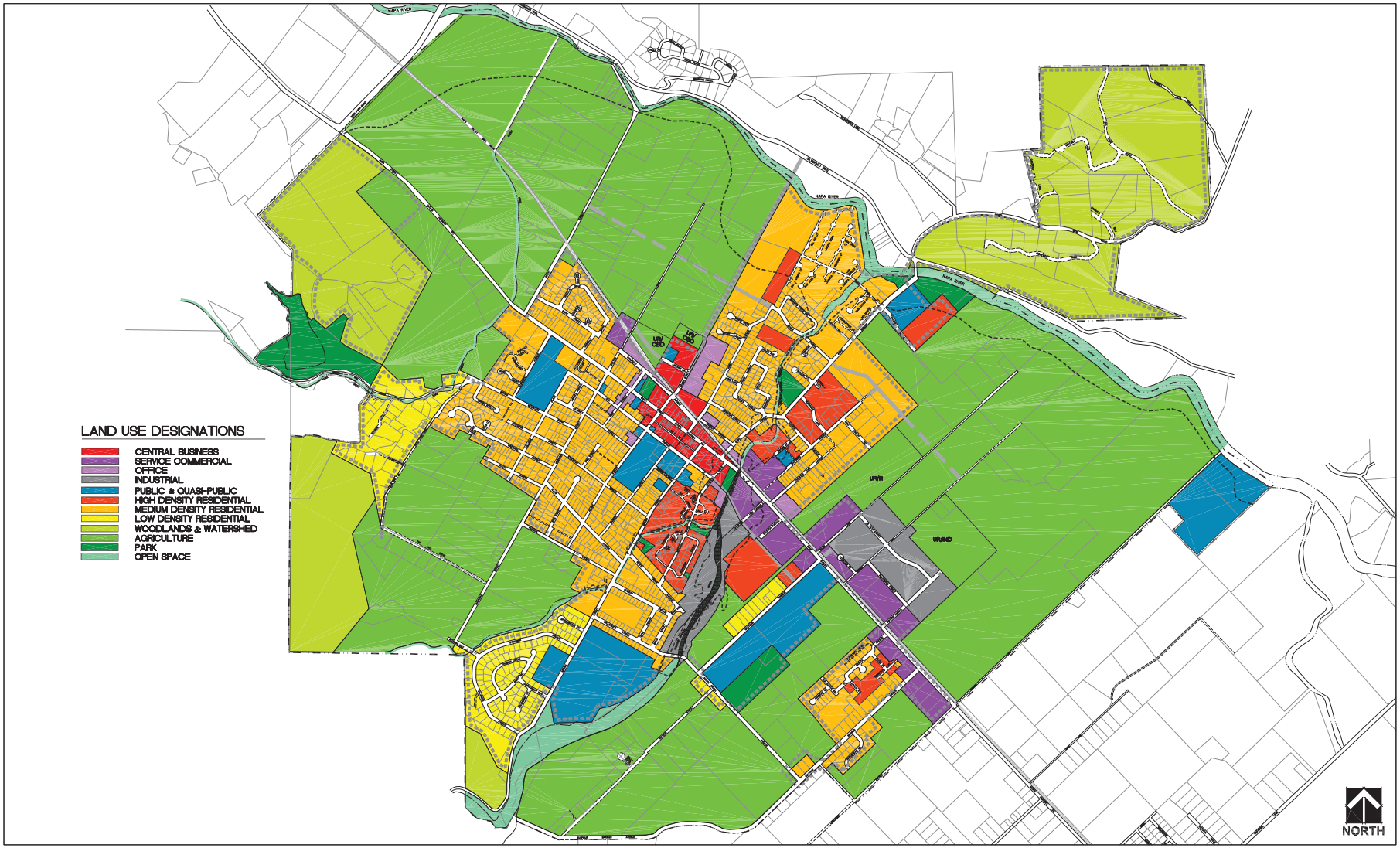
Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision as it pertains to land use, agriculture, open space, and other areas. Figure 4.A-2 illustrates the land use designations of the existing St. Helena General Plan.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

St. Helena Residential Growth Management System

The St. Helena Residential Growth Management System (Municipal Code Section 17.152) limits the residential growth rate in the city to approximately two percent per year, while providing for development of both market-rate and affordable housing units. Under this system, no more than nine building



SOURCE: City of St. Helena 2008

Figure 4.A-2
Existing General Plan Land Use Designations

permits for market-rate housing may be issued each year. Permits remaining unused at the end of the year are carried over into the subsequent year but are only available for allocation for the construction of market-rate units in development projects that include a minimum of 40 percent affordable units. The number of affordable housing units constructed is determined by the city council through the discretionary review process. The affordability agreements contain guarantees that the dwelling units would continue to be affordable to persons of very low, low, or moderate income for an agreed-upon period of time (City of St. Helena, 2010e). The City of St. Helena does not manage affordable housing within the city. This is done by non-profit entities (e.g., Bridge Housing, EAH Housing, etc.) and/or by contracts with the City of Napa's Housing Department.

St. Helena Zoning Ordinance

The St. Helena Zoning Ordinance implements the General Plan and provides location-specific regulations.

The St. Helena Zoning Ordinance (Title 17 of the Municipal Code) implements the General Plan and provides location-specific regulation, such as use restrictions and building height and bulk limitations. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless the proposed action conforms to the Zoning Ordinance or a variance is granted pursuant to provisions of the Zoning Ordinance. For some projects, the site may be rezoned or the Zoning Ordinance may be amended.

The Zoning Ordinance establishes 22 zoning districts, consisting of 15 independent districts and 7 overlay districts, as follows (City of St. Helena, 2010d):

- Twenty-Acre Agriculture (A-20) District
- Winery (W) District
- Agricultural Preserve (AP District)
- Low Density Residential (LR) District
- Low Density Residential One Acre Minimum (LR-1A) District
- Medium Density Residential (MR) District
- High Density Residential (HR) District
- Central Business (CB) District
- Service Commercial (SC) District
- Business and Professional Office (BPO) District
- Industrial (I) District
- Woodlands and Watershed (WW) District
- Public and Quasi-Public (PQP) District
- Parks and Recreation (PR) District
- Open Space (OS) District
- Rural-Residential Overlay (RR) District
- Specific Plan Overlay (SP) District
- Flood Plain Overlay (FP) District
- Historic Preservation Overlay (HP) District

- Planned Development Overlay (PD) District
- Mobilehome Park Overlay (MHP) District
- Parking Impact Overlay (PI) District

The locations of these zoning districts are generally consistent with current land use patterns.

Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant land use or planning impact if it would:

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect; or
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

Relevant Policies

The following policies and implementing actions of the General Plan Update are relevant to land use and planning impacts as defined by the significance criteria above:

> *LU1.1*. Require new development to occur in a logical and orderly manner 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, while minimizing effects on sewer, water and energy resources.
>
> *LU1.2*. Allow urban development to occur only within the Urban Limit Line. Urban services, such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line.
>
> The Urban Limit Line may only expand when the amount of developable land within the Urban Limit Line is insufficient to implement the General Plan policies. Expansion outside the Urban Limit Line should first be considered in Urban Reserve Areas. Expansion into other areas outside the Urban Limit Line should be considered only when the proposed land use is found to further the goals and long-term objectives of the City and does not result in adverse impacts to adjacent uses in either the urban or rural areas.

LU1.4. Encourage infill development and higher densities within currently developed areas wherever possible in order to minimize and postpone the need for expansion of the Urban Limit Line.

LU1.7. Support the redevelopment of vacant and underutilized sites within the downtown area to mixed-use development opportunities. Encouraging infill development with a mix of uses will support a pedestrian-oriented, vibrant retail and commercial district that is centrally located and easily accessible to residents and neighborhoods.

LU1.B. Rezone appropriate sites with land use designated as Central Business and Service Commercial as Mixed-Use, in accordance with the General Plan Land Use Map. Include provisions to allow for compatible uses on the same site, either in the one structure or adjacent structures. The mix of uses can be vertical or horizontal, and can include attached residential development in keeping with the integrity of historic structures and historic districts.

LU2.6. 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.

LU2.7. Allow higher density housing in single family neighborhoods as long as the development character of the single family area is maintained, including lot widths, orientation to street and building heights, among other considerations.

LU2.A. Update the zoning ordinance and map to be compatible with the General Plan land use map and designations.

LU2.B. Develop and implement residential design guidelines and/or form based codes, to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new residential development is consistent with the design, size and footprint of older residences in the neighborhood. Consider the impact of new development on surrounding residences, such as solar access. Explore opportunities to establish a neighborhood categorization system that allows for strict design standards in historic neighborhoods and more relaxed or creative standards in others. (Also see the following elements: Community Design, Topic Area 3; and Economic Sustainability, Topic Area 3)

LU3.1. Strengthen the downtown as the City's social and cultural core, and as the primary center of retail services. Facilitate a healthy mix of retail and commercial uses, residential development, entertainment and lodging.

LU3.9. In Mixed-Use, Service Commercial and Central Business districts encourage residential and office uses in upper-story locations or locations along the periphery of the retail district. This will facilitate active and pedestrian-oriented commercial areas.

LU4.1. Maintain a transitional zone around industrial areas to protect the health and safety of residential neighborhoods.

LU4.2. Support the development of industries that are consistent with viticulture and winery support services and similar, compatible uses. Support the role of the City as an agriculturally-based service center for the surrounding area, including Calistoga, Angwin, Deer Park, Rutherford and the unincorporated area south of St. Helena.

LU4.B. Develop and implement industrial design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new industrial development is consistent with the City's character.

LU5.2. Encourage the County to continue to promote agricultural uses and to strictly limit further development in unincorporated areas surrounding the City.

ES1.1. Maintain central St. Helena as the social, cultural and economic heart of the City by supporting infill and redevelopment of vacant and underutilized parcels in the central St. Helena area.

ES1.B. Update the zoning ordinance to encourage businesses that are complementary to St. Helena's small-town character and that provide goods at a range of prices. Update the zoning code to define and permit non-chain, discount type stores. Maintain the existing provisions in the zoning code that prohibit formula restaurants or those that solely provide take-out service, outlet and chain discount-type stores, and retail businesses over 10,000 square feet in size. Continue to discourage businesses whose consumer base requires a population larger than St. Helena and its vicinity. For the purposes of the General Plan, "vicinity" is defined as the surrounding towns and unincorporated areas for which St. Helena has historically provided goods and services, including Calistoga, Angwin, Deer Park, Rutherford and the unincorporated area south of St. Helena.

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 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.

CD3.B. Revise the ordinance language to limit lot coverage according to parcel size in residential areas in order to preserve neighborhood character, reduce adverse view and shade impacts on existing homes, improve groundwater infiltration, and avoid overbuilt conditions.

PS4.1. Maintain a transitional zone around industrial areas to protect the health and safety of residential neighborhoods.

HE2.1. Encourage higher density development where appropriate.

HE2.2. Ensure that higher density housing opportunity sites are not lost to lower density uses.

HE2.3. Be more aggressive in promoting mixed-use developments.

HE2.4. Promote second unit production more aggressively.

HE2.5. Allow conversion of single family homes to multi-unit dwellings.

HE2.H. Explore the possibility of allowing mixed use and live/work units in nonresidential zoning districts.

- Explore modifications to non-residential Zones that would permit, either as of right or as a conditional use, residential uses including integrated live/work units.
- Analyze requirements that commercial projects provide housing for a portion of the employment that will be generated on site. The City will study and determine what portion of employment generated will require housing, whether housing will be required on-site or allowed off-site, if pricing for the non-inclusionary units will be tied to anticipated salaries for employees in the commercial portion of the project, and if in-lieu fees will be permitted for smaller sized projects.
- Explore development incentives such as higher density and height allowances and a streamlined design review process.

HE2.I. Review and revise development standards pertaining to second units. Ensure that the development of second units is physically and financially feasible in targeted areas. Give particular attention to parking standards, setbacks, and impact fees.

HE2.K. Target specific areas for second unit incentives. Create incentives to construct second units in the medium density areas near downtown. Incentives to be explored include, but are not restricted to, fast tracking development applications, deferred development fees, and reduced parking and/or other City standards.

HE2.O. Identify appropriate “target” areas for conversion of single-family homes to multi-unit dwellings. Identify areas, zoning districts or specific sites where conversion would be appropriate or desirable.

HE2.P. Develop criteria and standards and provide public information regarding conversions of single-family homes to multi-unit dwellings. Identify criteria for reviewing potential conversion opportunities and standards, including parking requirements, to ensure that conversions are carried out in a manner consistent with the character and use of adjacent properties. Develop a guide for property owners explaining the conversion program and procedures.

HE2.Q. Develop a program to encourage affordable housing in clusters of 4-6 units on Infill parcels on west side of town. The City will post an inventory of potential sites on the City’s web site. In addition the City will explore incentives to encourage affordable housing clusters, including, but not limited to priority permit processing, reduced or

waived development fees, reduced parking and/ or other City standards, and an additional density bonus.

PR3.C. Design and locate new parks to minimize noise and activity impacts on nearby agricultural and residential uses. This includes requiring context-sensitive site designs that minimize negative impacts on surrounding uses, such as pathway and picnic area locations, ball field usage and park lighting.

Impact Analysis

Less-than-Significant Impacts

Conflicts with Existing Zoning

The General Plan Update would not create conflicts with existing zoning because, once the General Plan Update is adopted and as a routine matter, the City would update the St. Helena Zoning Ordinance and zoning map to achieve consistency between the adopted General Plan Update and zoning, as required by state law (Government Code Section 65860[a]). General Plan Update Implementing Actions LU2.A, LU4.A, and LU5.A ("update the zoning ordinance and map to be compatible with the General Plan land use map and designations") address this requirement. These implementing actions would ensure that the General Plan Update would not create conflicts with existing zoning, and therefore the impact would be less than significant. The environmental impacts of changes in land use that may result from adoption of the General Plan Update and the resulting zoning changes are evaluated throughout this EIR.

In general, City of St. Helena zoning districts are similar to the General Plan Update land use designations. Table 4.A-2 lists General Plan Update land use designations and the corresponding zoning districts. As shown in the table, the proposed Mixed-Use land use designation is the only General Plan Update designation for which there is no corresponding zoning district. The Zoning Ordinance update would therefore need to include establishment of a mixed-use zoning district consistent with the General Plan Update and/or provide for other changes to the Zoning Ordinance (e.g., as provided by Implementing Actions LU1.B and HE2.H).

Conflicts with Applicable Land Use Plans, Policies, and Regulations

The General Plan Update would not conflict with any applicable land use plans, policies, or regulations of agencies with jurisdiction in St. Helena. The City of St. Helena is the primary agency with jurisdiction over the planning area, and the General Plan Update would represent the primary land use plan applicable to the area.

TABLE 4.A-2
GENERAL PLAN UPDATE LAND USE DESIGNATIONS AND CORRESPONDING ZONING DISTRICTS

General Plan Update			
Land Use Designation	**Allowable Uses**	**Allowable Density/ Intensity**	**Corresponding Zoning District**
Low Density Residential	Single-family detached homes, secondary residential units and limited agricultural uses	1.0 to 5.0 dwelling units per acre	LR: Low Density Residential LR-1A: Low Density Residential 1-Acre Minimum
Medium Density Residential	Single-family detached and attached homes and secondary residential units	5.1 to 16.0 dwelling units per acre	MR: Medium Density Residential
Higher Density Residential	Single-family and multi-family housing, including apartments, townhouses, and group homes	16.1 to 28.0 dwelling units per acre	HR: High Density Residential
Mixed-Use	Medium density residential mixed with retail, office, restaurant, or other local-serving uses	Up to 20 dwelling units per acre; maximum FAR 1.0	(None)
Central Business	Retail and commercial businesses that serve residents and visitors, including restaurants, lodging, retail, office, etc.	Maximum FAR 2.0 with off-site parking	CB: Central Business
Service Commercial	Retail and service uses that are local-serving and may be auto-oriented, including offices, restaurants, service stations, etc.	Maximum FAR 0.50	SC: Service Commercial
Business and Professional Office	Administrative and professional office uses, including medical, financial, etc.	Maximum FAR 0.50	BPO: Business and Professional Office
Industrial	Industrial parks, warehouses, light manufacturing, auto and farm-related uses	Maximum FAR 0.50	I: Industrial
Open Space	Natural open spaces devoted to natural resource preservation and management, outdoor recreation, public health and safety	N/A	OS: Open Space
Parks and Recreation	Parks and public recreation uses	N/A	PR: Parks and Recreation
Public and Quasi-Public	Government-owned facilities, schools, churches, cemeteries, etc.	Maximum FAR 0.50.	PQP: Public and Quasi-Public
Woodland and Watershed	Very low density residential that ensures protection of wildlife, vegetation, open space, and watershed resources	Minimum parcel size 5 acres	WW: Woodlands and Watershed
Agriculture	Agricultural and winery uses with restricted single-family residential	Minimum parcel size 5 to 40 acres	A-20: Twenty-Acre Agriculture W: Winery AP: Agricultural Preserve *Overlay Zones (Can implement any General Plan designation in combination with base zone district)* *RR: Rural Residential* *SP: Specific Plan* *FP: Flood Plain* *HP: Historic Preservation* *PD: Planned Development* *MHP: Mobilehome Park* *PI: Parking Impact*

FAR = Floor Area Ratio; N/A = not applicable.

SOURCES: City of St. Helena, 2007 and 2010a; ESA, 2010

Potential development outlined in the General Plan Update (approximately 379 new housing units in the city by 2030 under the Likely Buildout Scenario) would help to achieve ABAG's regional housing need allocations and would be subject to the St. Helena Residential Growth Management System. Policies and implementing actions included in the General Plan Update would limit the rate of residential development and provide for development of affordable housing. See further discussion in Section 4.O, Population and Housing, of this EIR.

For these reasons, the potential for conflict with applicable land use plans, policies, and regulations is considered a less-than-significant land use impact.

Conflicts with Habitat Conservation Plans/Natural Community Conservation Plans

The General Plan Update would not conflict with applicable habitat conservation plans or natural community conservation plans, as no such plans apply within St. Helena. (See also Section 4.G, Biological Resources, of this EIR.) The potential for conflict with such plans is considered a less-than-significant impact.

Conflicts between Land Uses

As described in Chapter 3, Project Description, the General Plan Update could result in development of a variety of urban uses, including higher-density housing (see Policies LU2.6, LU2.7, HE2.1, HE2.2, HE2.4, and HE2.5, and Implementing Actions HE2.I, HE2.K, and HE2.O), mixed uses (see Policies LU1.7, LU3.1, LU3.9, and HE2.3, and Implementing Actions LU1.B and HE2.H), and infill and redevelopment of vacant or underused parcels (see Policy ES1.1 and Implementing Action HE2.Q). The overall pattern of development would be similar to the existing pattern, with new development generally extending existing development patterns out to the Urban Limit Line. While the new development would not physically divide the established community, it could create isolated areas of land use conflict (e.g., between residential and commercial developments, and between residential and industrial developments). (See Section 4.B, Agricultural and Forestry Resources, of this EIR for discussion of potential conflicts between urban and agricultural uses.)

The General Plan Update contains policies and implementing actions calling for orderly development within the Urban Limit Line (Policies LU1.1, LU1.2, LU1.4, and LU5.2). The General Plan Update also contains provisions for:

- Developing residential design guidelines (Implementing Action LU2.B)

- Maintaining a transitional zone around industrial areas to protect the health and safety of residential neighborhoods (Policies LU4.1 and PS4.1)
- Developing industrial design guidelines (Implementing Action LU4.B)
- Encouraging businesses that complement St. Helena's small-town character (Implementing Action ES1.B)
- Preserving the character of existing residential areas through limitations on building envelope size and other provisions (Policy CD3.1 and Implementing Action CD3.B)
- Developing criteria and standards for conversions of single-family houses to multi-unit dwellings (Implementing Action HE2.P)
- Designing and locating new parks to minimize noise and activity impacts on nearby residential uses (Implementing Action PR3.C).

These provisions would help to reduce the potential for land use conflicts to a less-than-significant level.

Potentially Significant Impacts

The General Plan Update would not result in any potentially significant land use or planning impacts.

References – Land Use and Planning

Association of Bay Area Governments (ABAG). 2008. San Francisco Bay Area Housing Needs Plan, 2007-2014, June 2008. Available at http://www.abag.ca.gov/planning/pdfs/SFHousingNeedsPlan.pdf

City of St. Helena. 2007. Regional Planning Context General Plan Update Background Working Paper. November.

City of St. Helena. 2010a. St. Helena General Plan Update 2030, Chapter Two, Land Use and Growth Management, Public Draft. February.

City of St. Helena. 2010b. St. Helena General Plan Update 2030, Chapter Seven, Community Design, Public Draft. February.

City of St. Helena. 2010c. St. Helena General Plan Update 2030, Chapter Eight, Open Space and Conservation, Public Draft. February.

City of St. Helena. 2010d. Zoning Ordinance (Title 17 of St. Helena Municipal Code).

City of St. Helena. 2010e. Municipal Code, Section 17.152, “Residential Growth Management System.”

County of Napa. 2009. Napa County General Plan, Agricultural Preservation and Land Use Element. June 23.

4.B Agricultural and Forestry Resources

Introduction

This section describes existing agricultural and forestry resources in St. Helena, reviews relevant plans and regulations, and evaluates the potential impacts of the General Plan Update on agricultural and forestry resources.

Setting

Agricultural Resources

Agriculture is the predominant land use by area in the City of St. Helena. Figure 4.A-1 in Section 4.A, Land Use and Planning, illustrates the locations of existing agricultural land within the city limits.

Most of the agricultural land is used for viticulture, and most parcels used for agriculture are relatively large. In some areas, agricultural lands adjoin or have been surrounded by urban uses.

Forestry Resources

Most forest lands within the city limits are located in the western and eastern parts of the city. In addition, valley oak woodland and eucalyptus are located along creeks that extend through the city. (See further discussion in Section 4.G, Biological Resources. See also Figure 8.2 of the General Plan Update, which shows the locations of existing forest lands within and near the city limits.)

Regulatory Framework

Williamson Act Contracts

The Williamson Act protects agricultural land from growth pressures by reducing the tax liability for land while it remains in agricultural use.

Enacted by the California State Legislature in 1965, the Williamson Act protects agricultural land from growth pressures by reducing the tax liability for land while it remains in agricultural use. Property owners enter into 10-year contracts with the local taxing jurisdiction that automatically renew each year. A Williamson Act contract provides a guarantee to the property owner that the property will be taxed according to its potential agricultural income, as opposed to the maximum valued use of the property, such as for residential development. Article 13 allows Williamson Act contracts to be used for recreational, scenic, and natural resource areas in addition to crop production.

Contracts last for 10 years and can be terminated only by a cancellation or non-renewal. Cancellation involves an extensive review and approval process, in addition to a payment of fees of up to 12.5 percent of the property

value. Under non-renewal, a notice is filed by the property owner, after which the 10-year contract expires over time. The non-renewal allows for tax rates to gradually increase over the remainder of the contract, reaching the market value rate by the end of the term (City of St. Helena, 2007).

Figure 4.B-1 shows the locations of Williamson Act contracts within the city limits. As shown in the figure, six properties subject to Williamson Act contract are located within the city limits. Of these six properties, three are located on the west side of Main Street between the El Bonita Motel and Grayson Avenue, and the other three are located on Vallejo Street near the western city limits. All six properties are located outside the Urban Limit Line.

The California Department of Conservation's Farmland Mapping and Monitoring Program assesses agricultural lands and conversion of these lands over time.

California Department of Conservation Farmland Mapping and Monitoring Program

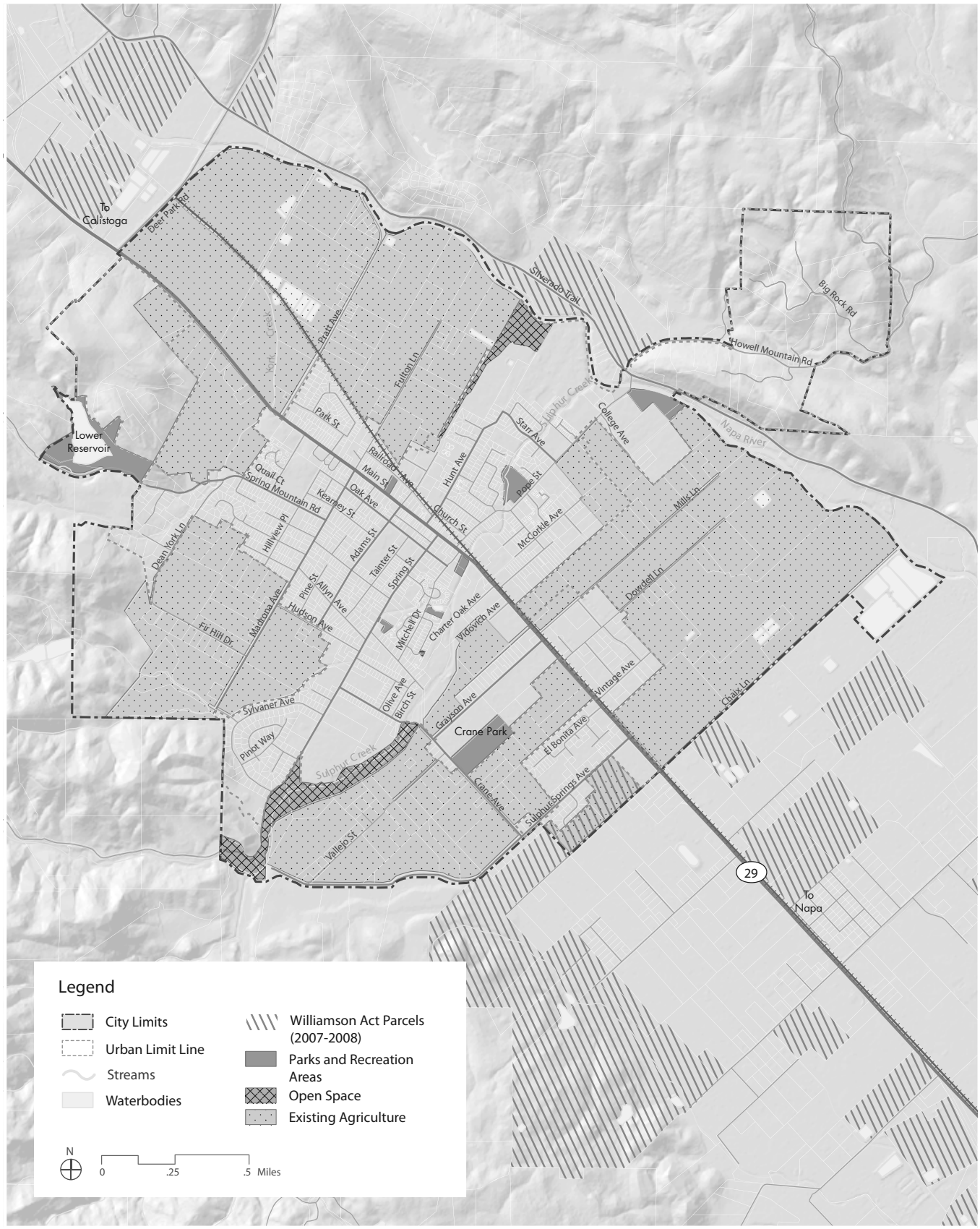
In 1982, the California Department of Conservation enacted the Farmland Mapping and Monitoring Program (FMMP) database to assess the location, quality, and quantity of agricultural lands and conversion of these lands over time. The FMMP categorizes agricultural land as follows (California Department of Conservation, 2010a):

- *Prime Farmland:* Prime Farmland is land that has the best combination of physical and chemical characteristics for the production of crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming methods. Prime Farmland must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

- *Farmland of Statewide Importance:* Farmland of Statewide Importance is land other than Prime Farmland that has a good combination of physical and chemical characteristics for the production of crops. It must have been used for the production of irrigated crops at some time during the two update cycles prior to the mapping date. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

Typical vineyards found in St. Helena

- *Unique Farmland:* Unique Farmland is land that does not meet the criteria for Prime Farmland or Farmland of Statewide Importance but that has been used for the production of specific high economic value crops at some time during the two update cycles prior to the mapping date. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality and/or high yields of a specific crop when treated and managed according to current farming methods. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.



SOURCE: City of St. Helena and Napa County 2008

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Figure 4.B-1
Existing Williamson Act Contracts in St. Helena

- *Farmland of Local Importance:* Farmland of Local Importance is either currently producing crops, has the capability of production, or is used for the production of confined livestock. Farmland of Local Importance is land other than Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. This land may be important to the local economy due to its productivity or value. It does not include publicly owned lands for which there is an adopted policy preventing agricultural use.

- *Grazing Land:* Grazing Land is defined in California Government Code Section 65570(b)(3) as "...land on which the existing vegetation, whether grown naturally or through management, is suitable for grazing or browsing of livestock."

Figure 4.B-2 illustrates the locations of these agricultural land categories within the St. Helena city limits. As shown in the figure, the city limits encompass approximately 966 acres of Prime Farmland, approximately 284 acres of Farmland of Statewide Importance, approximately 53 acres of Unique Farmland, and approximately 23 acres of Farmland of Local Importance. No Grazing Land is located within the city limits. "Other Land" and Urban and Built-Up Land make up almost 1,827 acres.

Existing St. Helena General Plan

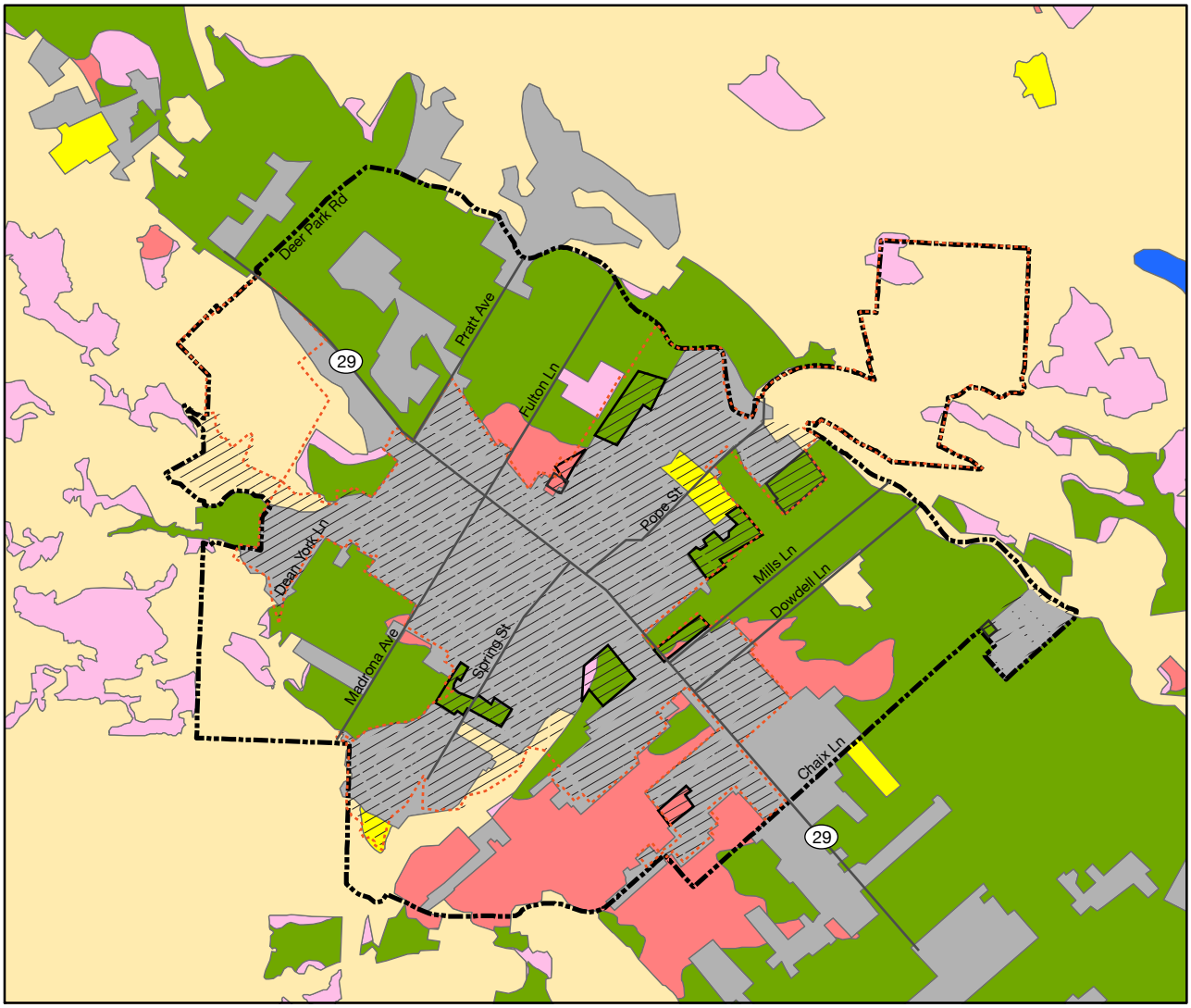
The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions related to agricultural and forestry resources.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

St. Helena Municipal Code (Right-to-Farm Provisions)

The St. Helena Municipal Code (Chapters 17.32 through 17.60 and 17.68) contains the following "right-to-farm" provision in the regulations for non-agricultural zoning districts:

> *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.*



St Helena City Limits

Urban Limit Line

0 .5
Miles

California Department of Conservation Mapping Category (approximate acreage within St Helena city limits)

- Urban and Built-Up Land (1171 acres)
- Grazing Land
- Farmland of Local Importance (23 acres)
- Prime Farmland (966 acres)
- Farmland of Statewide Importance (284 acres)
- Unique Farmland (53 acres)
- Other Land (656 acres)
- Area designated for urban uses by proposed General Plan. (Note: See Figure 2.1 in proposed General Plan. "Urban uses" are defined as the residential, commercial, mixed use, office, industrial, parks/recreation, and public/quasi-public land use categories.)
- Area of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance designated for urban uses by proposed General Plan (82 acres)

SOURCE: California Department of Conservation, "Napa County Important Farmland 2008" map; ESA, 2010

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Figure 4.B-2
Farmland in St. Helena Planning Area

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.*

Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant impact on agricultural or forestry resources if it would:

- 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; or
- 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.

Relevant Policies

The following policies and implementing actions of the General Plan Update are relevant to agricultural and forestry resource impacts as defined by the significance criteria above:

LU1.1. Require new development to occur in a logical and orderly manner 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, while minimizing affects on sewer, water and energy resources.

LU1.2. Allow urban development to occur only within the Urban Limit Line. Urban services, such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line.

The Urban Limit Line may only expand when the amount of developable land within the Urban Limit Line is insufficient to implement the General Plan policies. Expansion outside the Urban Limit Line should first be considered in Urban Reserve Areas. Expansion into other areas outside the Urban Limit Line should be considered only when the proposed land use is found to further the goals and long-term objectives of the City and does not result in adverse impacts to adjacent uses in either the urban or rural areas.

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

LU1.4. Encourage infill development and higher densities within currently developed areas wherever possible in order to minimize and postpone the need for expansion of the Urban Limit Line.

LU2.4. Minimize large lot development, including those of one dwelling unit per acre or less, except where development protects agricultural uses or woodlands and watershed habitat and efficiently uses land.

LU4.2. Support the development of industries that are consistent with viticulture and winery support services and similar, compatible uses. Support the role of the City as an agriculturally-based service center for the surrounding area, including Calistoga, Angwin, Deer Park, Rutherford and the unincorporated area south of St. Helena.

LU5.1. Support and protect agricultural uses within and adjacent to the City.

LU5.2. Encourage the County to continue to promote agricultural uses and to strictly limit further development in unincorporated areas surrounding the City.

LU5.3. Limit development on properties existing at the time of the adoption of this General Plan that are designated agricultural and are outside of the Urban Limit Line.

LU5.4. Support community-based agricultural uses within the City, including community gardens.

LU5.5. Encourage the use of sustainable agricultural practices.

LU5.B. Continue to enforce the City's "right to farm" ordinance that protects the right of agricultural operations in agriculturally-designated areas to continue their operations, even though such practices may generate complaints from nearby established urban uses.

LU5.C. Initiate studies to explore the feasibility and desirability of implementing permanent agricultural protection for lands within the Urban Limit Line in the form of agricultural preserves.

LU5.D. Identify sites for community gardens. Establish a program to maintain public areas within and surrounding community gardens and to administer the assignment of garden spaces and collection of use fees.

LU5.E. Encourage local farmers to employ sustainable agricultural practices wherever possible. Support agricultural activities that incorporate best management practices related to sustainable agriculture, including participation in local programs such as the Napa Valley Vintners - Napa Green Program and the California Certified Organic Farmers certification program.

CD4.2. Integrate open space, including parks, community gardens, natural areas and agriculture into the community to strengthen the connection to St. Helena's agricultural heritage and provide a sense of openness.

CD4.3. Support agricultural and low-intensity uses beyond the Urban Limit Line. (Also see the Land Use and Growth Management Element, Topic Area 1)

OS1.K. Require environmental review of new agricultural uses including, but not limited to, farming, horticulture, floriculture and viticulture, animal husbandry and livestock farming. Viticulture review must include the replanting of existing vineyards in accordance with County regulations.

OS1.L. Discourage removal of trees for agricultural or other development in hillside areas.

OS1.M. Encourage local farmers to employ sustainable agricultural practices wherever possible. Support agricultural activities that incorporate best management practices related to sustainable agriculture, including participation in local programs such as the Napa Valley Vintners - Napa Green Program and the California Certified Organic Farmers certification program.

OS2.1. Maintain agriculture as the mainstay of the local economy by preserving agriculturally-designated lands as an invaluable and irreplaceable open space resource. (Also see the Land Use and Growth Management Element for additional policies and implementing actions relating to agriculture.)

OS4.A. Establish an urban forestry program to ensure a coordinated and comprehensive approach to maintaining and increasing the City's trees.

Monitor and enforce compliance with program guidelines. Key program aspects will include the following:

- A master tree list to guide the choice of tree varieties;
- A tree planting program to ensure that new trees are planted regularly;
- A tree maintenance program to ensure that existing trees are healthy and pruned;
- A tree inventory to create a comprehensive listing of the City's trees and tree-related needs;
- A Tree Committee to oversee the implementation of the urban forestry program and approval of tree removals; and
- A landmark tree list that identifies trees that require additional protection from damage and/or removal.

OS4.B. Until implementation of the City-sponsored urban forestry program occurs, continue to use the Master Street Tree List as a guideline for all street tree plantings.

OS4.C. Develop and adopt a Tree Ordinance for the purpose of protecting trees and identifying replacement trees. In coordination with an urban forestry program, existing, significant trees should be integrated into future development. In cases where existing trees cannot be saved, require the planting of replacement trees consistent with guidelines included in the Master Tree List.

PS2.H. Incorporate right-to-farm legal provisions relative to noise in all newly created deeds where agricultural activities may pose noise impacts in the future.

CC4.1. Support efforts to protect and increase the amount of vegetation and biomass in soil, and reduce emissions from agricultural sources. [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.2. Encourage responsible and sustainable agricultural and landscaping practices. [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.4. Support efforts to expand and improve the City's managed urban forest program in order to reduce greenhouse gas emissions and improve overall air quality. (Also see the Open Space and Conservation Element for additional policies and implementing actions relating to urban forests.)

CC4.A. Establish programs to support and encourage local agriculture, food production and school and community gardens. [Draft Napa Countywide Community Climate Action Plan Framework, AN1]

CC4.C. Establish programs and plans that create and enhance urban forests and greenways. [Draft Napa Countywide Community Climate Action Plan Framework, AN2]

CC4.E. Support efforts by local growers and restaurants to produce and use locally-grown food and remove associated regulatory hurdles. [Draft Napa Countywide Community Climate Action Plan Framework, AN4]

CC4.F. Revise ordinances to further protect habitat and mitigate the conversion of oak woodlands, natural resources, riparian habitat and other important natural communities by permanently protecting similar habitats. [Draft Napa Countywide Community Climate Action Plan Framework, AN5]

CC4.G. Support and promote the Napa Green Certified Winery Program and the Napa Green Certified Land Program. [Draft Napa Countywide Community Climate Action Plan Framework, AN6]

CC4.J. Establish an urban forestry program to ensure a coordinated and comprehensive approach to maintaining and increasing the City's trees. [Staff direction]

HE1.F. Amend the General Plan to reconfigure the Urban Limit Line in accordance with the adopted Adams Street property Preferred Alternative.

PR3.1. Ensure that the design and development of parks and recreation facilities preserves viewsheds and creates a buffer between urban and agricultural uses, where necessary.

PR3.2. Protect sensitive habitat, agricultural land and open space when planning and maintaining City park lands.

PR3.A. Develop design guidelines for recreational facilities that preserve viewsheds and maintain a transition buffer between urban and agricultural uses. Include specific design criteria regarding recreational trails and picnic areas adjacent to agricultural uses.

PR3.C. Design and locate new parks to minimize noise and activity impacts on nearby agricultural and residential uses. This includes requiring context-sensitive site designs that minimize negative impacts on surrounding uses, such as pathway and picnic area locations, ball field usage and park lighting.

Impact Analysis

Less-than-Significant Impacts

Impacts on Forest Land

The General Plan Update would maintain the existing designation for three areas along the western boundary of the city and one area in the northeastern corner of the city for Woodland and Watershed use. These areas represent the major areas of forest land within the city. The General Plan Update contains policies (CC4.4) and implementing actions (OS1.L, OS4.A, OS4.B, OS4.C, CC4.C, CC4.F, and CC.4.J) that would protect forest resources and trees. For

these reasons, the potential for loss of forest land or conversion of forest land to non-forest use is considered a less-than-significant forestry resource impact. For additional discussion of impacts on forest land, see Section 4.G, Biological Resources, of this EIR.

Conflicts with Williamson Act Contracts

The General Plan Update would not conflict with existing Williamson Act contracts. The General Plan Update would designate the areas that are subject to Williamson Act contract (see Figure 4.B-1) for Agriculture use. The potential for conflict with Williamson Act contracts would therefore represent a less-than-significant impact.

For discussion of impacts on land zoned for agricultural use, see "Potentially Significant Impacts" below.

Potentially Significant Impacts

The following impacts would be potentially significant and thus would warrant mitigation measures.

Impact AGRICULTURE-1: Development in accordance with the General Plan Update could result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use. (Potentially Significant)

Farmland Acreages

Figure 4.B-2 shows areas of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (hereafter collectively referred to as "Farmland") identified by the California Department of Conservation Farmland Mapping and Monitoring Program that are designated for urban uses by the General Plan Update.[1] Eight such areas, totaling approximately 82 acres, have been identified, as shown in Figure 4.B-2. The eight "Farmland" areas are located within the Urban Limit Line, as shown in Figure 4.B-2.[2]

Development in accordance with the General Plan Update could convert these areas of "Farmland" to non-agricultural use. The eight "Farmland" areas overlap portions of two Change Areas (1 and 8), three Pipeline Projects

1 For purposes of Figure 4.B-2, "urban uses" are defined as the residential, commercial, mixed-use, office, industrial, parks/recreation, and public/quasi-public land use designations of the General Plan Update.

2 In the vicinity of the Adams Street land use change area, the Urban Limit Line would be reconfigured in accordance with General Plan Update Implementing Action HE1.F ("amend the General Plan to reconfigure the Urban Limit Line in accordance with the adopted Adams Street property Preferred Alternative").

(Doumani, Mercy Housing, and Montessori School & Arts Center), and five Key Housing Opportunity Sites identified in the General Plan Update (see Figure 3-4 in Chapter 3, Project Description, of this EIR).

It should be noted that the existing General Plan already commits all but 0.83 acre of the 82 acres of "Farmland" to urban uses. Thus, compared to the existing General Plan, the General Plan Update would result in conversion of less than one additional acre of "Farmland" to urban uses. The impact of buildout under the proposed General Plan Update would thus be very similar to the impact of buildout under the existing General Plan. (The additional 0.83 acre is located on a portion of the City-owned property on Adams Street, in Change Area 1. The existing General Plan designates this 0.83-acre area for Agriculture, and the proposed General Plan Update land use designation is Mixed-Use.[3]) See Chapter 5, Alternatives to the Project, for additional discussion of the existing General Plan and its impacts compared to the proposed General Plan Update.

City Agricultural Land Protection Programs

The City of St. Helena has strong and longstanding programs and practices in place for protection of agricultural land. The City adopted an Urban Limit Line within the incorporated city limits for the sole purpose of protecting agricultural land. Within the incorporated area, approximately 48 percent of all land is designated for agriculture. The City's Sphere of Influence, as designated by the Napa County Local Agency Formation Commission (LAFCo), is the same as the city limits, indicating LAFCo's approval of use of land within the city limits for urban development. In addition, the cities and the County of Napa have agreed that urban uses belong in the cities, with the purpose of this agreement being to reduce development pressures on agricultural lands in the unincorporated area (Desmond, Poole 2010).

The proposed General Plan Update contains extensive policies and implementing actions for protection of agricultural land (see "Relevant Policies" above). For example, Policies LU-1.3, LU5.1, CD4.3, OS2.1, and PR3.2 provide support for agricultural uses within and adjacent to the city; Policy LU-1.4 encourages infill development and higher densities within

[3] The remaining properties in the 82-acre total consist of the following five properties, which have been within the City's Urban Limit Line and designated for urban uses by the existing General Plan since 1993: (1) the Hunter property, designated for Medium Density Residential uses by the existing General Plan; (2) the Aves property on Pope Street, designated for Medium Density Residential uses by the existing General Plan; (3) the Romero property on Pope Street, designated for Medium Density Residential uses by the existing General Plan; (4) the Particelli property at the end of McCorkle Avenue, designated for Medium Density Residential uses by the existing General Plan; and (5) a portion of the Lorraine Ruston property on Spring Street, designated Woodlands & Watershed/Low Density Residential by the existing General Plan. The General Plan Update proposes the same land use designations for these properties (Desmond, 2010).

currently developed areas in order to minimize the need to expand the Urban Limit Line; and Implementing Actions LU5.B and PS2.H call for continued enforcement of the City's "right-to-farm" provisions.

In addition, under General Plan Update Implementing Action LU5.C, the City would "initiate studies to explore the feasibility and desirability of implementing permanent agricultural protection for lands within the Urban Limit Line in the form of agricultural preserves."

The General Plan Update would protect agricultural lands that might otherwise be developed by increasing development densities at the city core. In addition, the City will continue to maintain an Urban Limit Line that is within the city limits as a further way to protect agricultural lands.

Mitigation Measures

Mitigation Measure AGRICULTURE-1: The following new implementing action shall be added to the Land Use and Growth Management Element of the General Plan Update:

- *Evaluate discretionary, rezonings, or General Plan amendments outside the Urban Limit Line to determine their potential for impacts on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance mapped by the State Farmland Mapping and Monitoring Program and avoid converting these farmlands where feasible. Where conversion of farmlands mapped by the state cannot be avoided, require long-term preservation of one acre of existing farmland of equal or higher quality for each acre of state-designated farmland that would be rezoned or redesignated to non-agricultural uses. This protection may consist of establishment of farmland easements or other similar mechanism, and the farmland to be preserved shall be located within the City and preserved prior to approval of the proposed rezoning or General Plan amendment.*

This new implementing action would help to reduce the impact of conversion of California Department of Conservation-identified "Farmland" to non-agricultural use to a less than-than-significant level (Less than Significant).

Impact AGRICULTURE-2: By allowing urban development adjoining farmland and thereby creating the potential for land use conflicts, the General Plan Update could result in conversion of additional farmland to non-agricultural use. (Potentially Significant)

As shown in Figure 4.B-2, areas designated for urban uses by the General Plan Update would adjoin farmland at various locations in the eastern and

western parts of the city. Development of urban uses in these locations could create land use conflicts with agricultural operations, thereby leading to pressure to convert the existing farmland to non-agricultural use. Examples of conflicts between urban and agricultural uses include complaints from residents about noise, dust, odors, slow-moving traffic, and other aspects of agricultural operations. Areas that would be designated for urban uses and that would adjoin farmland include two Change Areas (1 and 8), three Pipeline Projects (Doumani, Mercy Housing, and Montessori School & Arts Center), and five Key Housing Opportunity Sites identified in the General Plan Update (see Figure 3-4 in Chapter 3, Project Description, of this EIR).

The General Plan Update designates these areas of farmland for Agriculture or Open Space use and contains policies and implementing actions calling for orderly development within the Urban Limit Line (Policies LU1.1, LU1.2, LU1.4, and LU5.2), protection of and support for agricultural uses (Policies LU1.3, LU2.4, LU5.1, LU5.3, LU5.4, LU5.5, CD4.2, CD4.3, OS2.1, CC4.1, and CC4.2, and Implementing Actions LU5.B, LU5.D, LU5.E, OS1.K, OS1.M, PS2.H, CC4.A, CC4.E, CC4.G, and HE1.H), development of uses compatible with agricultural uses (Policy LU4.2), and design of parks and recreational facilities to avoid conflicts with adjoining agricultural uses (Polices PR3.1 and PR3.2 and Implementing Actions PR3.A and PR3.C). The General Plan Update does not contain policies and implementing actions that address the land use relationships or design of other, non-park uses that adjoin agricultural uses, however.

Mitigation Measures

Mitigation Measure AGRICULTURE-2: The following new implementing actions shall be added to the Land Use and Growth Management Element of the General Plan Update:

- *Where proposed residential, commercial, or industrial development abuts lands devoted to agricultural use, require the non-agricultural uses to incorporate buffer areas to mitigate potential land use conflicts as a condition of approval for subdivision or use permit. The type and width of buffer areas shall be determined based on the character, intensity, and sensitivity of the abutting land uses.*

- *Prepare and adopt guidelines and regulations to assist in the determination of the appropriate type and scope of agricultural buffer areas needed in circumstances that warrant the creation of such buffer areas.*

These new implementing actions would reduce the impact to a less-than-significant level. (Less than Significant)

References – Agricultural and Forestry Resources

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4.C Transportation and Traffic

Introduction

This section of the EIR evaluates the potential transportation impacts resulting from implementation of the proposed General Plan Update. Impacts are evaluated based upon a comparison between existing conditions and future conditions (Year 2030) with implementation of the General Plan Update.

The transportation information presented in this section is derived from data collected from the *City of St. Helena General Plan 2030 Transportation Element Update, Background Report* (July 2009).

Environmental Setting

The circulation network serving St. Helena consists of roadways, transit, bicycle, and pedestrian facilities. A description of travel characteristics, major transportation facilities, and existing travel conditions is provided in the *City of St. Helena General Plan 2030: Background Transportation Report*; a summary of those key travel characteristics is included in this section. A full copy of the report can be viewed at the St. Helena Planning Department.

Travel Characteristics

In 2000, approximately 69 percent of St. Helena's residents drove alone to work.

Journey-to-work data gathered by the U.S. Census Bureau provides a means of estimating the prevalence of particular transportation modes, or mode split, in a given community. Journey-to-work data from the 2000 Census indicates the mode of travel to and from work for St. Helena residents. As shown by Table 4.C-1, in 2000, approximately 69 percent of St. Helena's residents drove alone to work (slightly lower than the countywide average of 73 percent), while 13 percent carpooled to work (also slightly lower than the countywide average of 15 percent). The remainder took public transit, bicycled, walked, worked at home, or drove a motorcycle to work (see Table 4.C-1).

Carpooling substantially increased in St. Helena between 1990 and 2000, from 7.5 percent to 13.1 percent. Meanwhile, bicycling decreased from 1.3 percent to 0.3 percent over the same period. The percentage walking to work also decreased from 8.4 percent in 1990 to 7.2 percent in 2000. However, this percentage was higher than the overall countywide average of employees walking to work for both time periods (see Table 4.C-1).

TABLE 4.C-1
JOURNEY TO WORK DATA BY MODE OF TRAVEL

	St. Helena		Napa County	
Mode	**1990**	**2000**	**1990**	**2000**
Drove alone	74.8%	69.2%	75.2%	72.7%
Carpooled	7.5%	13.1%	12.8%	14.8%
Transit	0.0%	1.3%	1.0%	1.4%
Bicycle	1.3%	0.3%	1.2%	0.2%
Motorcycle	1.6%	0.0%	0.3%	0.8%
Walked	8.4%	7.2%	5.1%	4.1%
Other means	0.4%	0.9%	0.7%	0.8%
Worked at home	5.7%	8.0%	3.7%	5.1%

SOURCE: U.S. Census Bureau, Census 1990, 2000

Origin and destination data from the 2000 Census provides information on where St. Helena residents are commuting to, and where people working in St. Helena are commuting from. As shown in Table 4.C-2, approximately one-half of St. Helena's employed residents work within the city, and close to one-half travel to other destinations within Napa County. Very few St. Helena residents commute to destinations outside of Napa County.

TABLE 4.C-2
DESTINATIONS FOR WORKERS LIVING IN ST. HELENA

Origin	Destination	Number of Total Workers	Percentage of Total Workers
St. Helena	St. Helena	1,170	43%
St. Helena	Napa	300	11%
St. Helena	Calistoga	80	3%
St. Helena	Yountville	70	3%
St. Helena	Remainder of Napa County	780	29%
St. Helena	Sonoma County	88	3%
St. Helena	Alameda County	64	2%
St. Helena	Work Elsewhere in California	151	6%
	Total	**2,703**	

SOURCE: U.S. Census Bureau, Census 2000

23 percent of St. Helena's workforce lives within the city, 28 percent commute from Napa, and 32 percent commute from other places in Napa County.

As shown in Table 4.C-3, 23 percent of St. Helena's workforce lives within the city, and 28 percent commute from the City of Napa. Another 32 percent commute from other places in Napa County, with only a small percentage of workers commuting from outside the county.

TABLE 4.C-3
ORIGINS OF WORKERS TRAVELING TO ST. HELENA FOR WORK

Origin	Destination	Number of Total Workers	Percentage of Total Workers
Napa	St. Helena	1,410	28%
St. Helena	St. Helena	1,170	23%
Calistoga	St. Helena	245	5%
Angwin	St. Helena	165	3%
Yountville	St. Helena	85	2%
Remainder of Napa County	St. Helena	1,110	22%
Lake County	St. Helena	185	4%
Sonoma County	St. Helena	263	5%
Solano County	St. Helena	180	4%
Living Elsewhere in California	St. Helena	230	5%
	Total	**5,043**	

SOURCE: U.S. Census Bureau, Census 2000

According to these data, many more workers are commuting into St. Helena than are living within the city, suggesting a jobs/housing imbalance in which the number of jobs in the City of St. Helena far exceeds the number of residential units that provide housing for employees working within the city. Jobs/housing balance is a measure of the equilibrium between employment and residential units in a specific area. A balanced ratio between jobs and housing can reduce travel times and traffic congestion in a given area.

Motor Vehicle Circulation

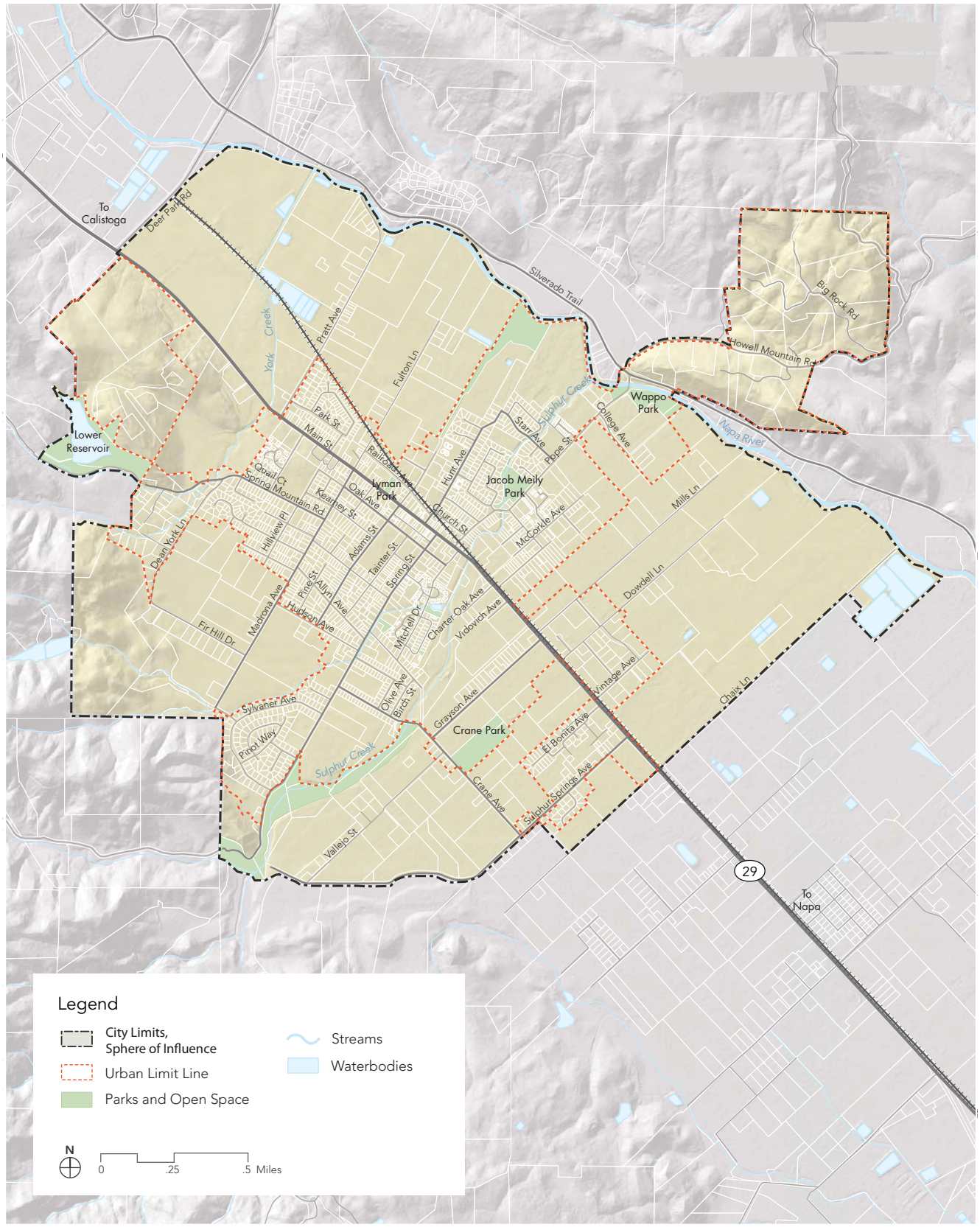
The City of St. Helena lies on a north-west/south-east axis, with State Route (SR) 29/Main Street[1] providing the backbone and the main route for intercity and regional travel. For simplicity, all streets parallel to SR 29 will be referred to as north-south routes, while streets perpendicular to SR 29 will be referred to as east-west routes.

Within St. Helena, State Route 29 has two travel lanes and is known as Main Street.

The street network to the west of SR 29 is a grid pattern of residential blocks connected to SR 29 by a series of east-west streets connecting residential areas. To the east of SR 29, the grid network is discontinuous due to the lack of parallel facilities to SR 29 to connect the east-west roadways. The existing street network is displayed in Figure 4.C-1.

SR 29 is a two- to four-lane rural highway that stretches through Napa County from Vallejo at Napa County's southern border to Lake County in the north. Within the City of St. Helena, SR 29 has two travel lanes and is

[1] SR 29 and Main Street are used interchangeably throughout this section of the EIR.



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

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Figure 4.C-1
Local Roadway Network

known as Main Street. Main Street has parallel parking on both sides of the street and a center turn lane between Dowdell Lane and Madrona Street-Fulton Lane. Main Street provides the primary route for travel within St. Helena and to further destinations around the region.

Since SR 29 is a major north-south thoroughfare for Napa County, heavy through traffic is typical along Main Street and drivers often try to avoid this congestion by using alternate parallel routes such as Oak Avenue and Valley View/Crane Avenue in St. Helena neighborhoods.

Future SR 29 improvements include the "Napa 29 Rehabilitation and Channelization" project, which would construct wider shoulders and a nearly continuous center turn lane from Mee Lane to Sulphur Creek. This project would include road widening and would require easements from the Wine Train and allowances from Caltrans to move some of the aboveground utilities. The project would also include bicycle crossing improvements at the Whitehall Lane railroad crossing. The *SR 29 Access Study* also recommends the signalization of three intersections along Main Street: Grayson Avenue, Vintage Avenue, and Sulphur Springs Avenue (Kimley Horn, 2007).

North-South Streets

Major north-south streets in St. Helena are the following:

- *Silverado Trail* is a major north-south road that runs parallel to SR 29 on the east side of St. Helena and extends between Soscol Avenue (in the City of Napa) to the south and Lake County Highway (in the City of Calistoga) to the north.
- *Oak Avenue* is a two-lane intracity street that runs parallel to SR 29 to the west.
- *Valley View Street/Crane Avenue* is a two-lane, north-south street that that begins as a rural roadway at Sulphur Springs Avenue and transitions into a suburban residential collector north of Vallejo Street.

East-West Streets

Major east-west streets in St. Helena are the following:

- *Pratt Avenue* is a two-lane street that connects Main Street to Silverado Trail on the north side of the city. Pratt Avenue provides access to both residential and winery uses, but lacks any north-south connections outside of Main Street.
- *Pope Street* is a two-lane street that runs parallel to Pratt Avenue (to the South) and connects Main Street and downtown St. Helena to Silverado Trail. Pope Street also provides access to suburban residential neighborhoods on the east side of Main Street.

- *Madrona Street/Fulton Lane* is a two-lane, east-west street. To the west of Main Street, Madrona Street provides access to residential neighborhoods and to Spring Mountain Road, a regional connection to the City of Santa Rosa in Sonoma County. To the east of Main Street, Madrona becomes Fulton Lane which provides "dead end" access to commercial and residential areas.

- *Adams Street* and *Spring Street* are both downtown streets that primarily provide access to the residential neighborhoods on the west side of the city.

- *Dowdell Lane* is a two-lane street to the east of Main Street that provides access to a variety of agricultural and industrial uses located in the southeastern quadrant of the city.

- *Sulphur Springs Avenue* is two-lane street on the southern edge of the city that provides access to a variety of commercial and rural residential uses.

Other Streets

In addition to streets listed above, there are a number of local streets with low traffic speeds and volumes that provide direct access to abutting land uses.

Level of Service

Level of service is a qualitative assessment of traffic conditions perceived by motorists.

Level of service (LOS) is a qualitative assessment of traffic conditions perceived by motorists. LOS generally reflects driving conditions such as travel time and speed, freedom to maneuver, and traffic interruptions. LOS uses quantifiable traffic measures such as average speed, intersection control delay, and volume-to-capacity ratio to determine driver satisfaction.

Defining Level of Service

LOS is reported for individual intersections and is designated by a range of letters. "A" represents the most favorable conditions (free flow) and "F" represents the least favorable conditions (jammed with excessive delays). Table 4.C-4 describes the characteristics of each LOS designation and presents the relationship between level of service and control delay for unsignalized and signalized intersections. For purposes of this EIR, intersection and segment LOS were analyzed.

Since automobile travel has been the dominant form of transportation, level of service has traditionally been measured for vehicles, with minimal regard to bicycle, pedestrian, and transit conditions. This bias unintentionally but inherently ignores overall mobility and conditions for non-auto road users and perpetuates a system that focuses on expanding auto capacity. This issue is addressed later in this section of the EIR.

TABLE 4.C-4
INTERSECTION LEVEL OF SERVICE THRESHOLDS

LOS	Unsignalized Intersection Control Delay (sec/veh)[a]	Signalized Intersection Control Delay (sec/veh)[a]	General Description
A	0 – 10.0	0 – 10.0	Little to no congestion or delays.
B	10.1 – 15.0	10.1 – 20.0	Limited congestion. Short delays.
C	15.1 – 25.0	20.1 – 35.0	Some congestion with average delays.
D	25.1 – 35.0	35.1 – 55.0	Significant congestion and delays.
E	35.1 – 50.0	55.1 – 80.0	Severe congestion and delays.
F	> 50.0	> 80.0	Total breakdown with extreme delays.

[a] Control delay includes initial deceleration delay, queue move-up time, stopped delay, and acceleration delay. Unsignalized intersection LOS is presented as the delay and LOS for the most delayed movement.

SOURCE: Highway Capacity Manual, Chapter 17 (Unsignalized Intersections), Transportation Research Board, 2000

Existing Level of Service Standards

The existing (1993) City of St. Helena General Plan establishes LOS C as the desired standard for signalized intersections except for those on Main Street, where LOS D is permitted. The existing General Plan establishes LOS C as the standard for unsignalized intersections.

Appendix E describes existing LOS standards in more detail.

Existing Roadway Conditions

Calculating Level of Service on Roadway Segments

There are several approaches to calculating the LOS for a roadway segment.

A generalized approach is to estimate daily LOS by calculating the volume-to-capacity ratio from a theoretical daily roadway capacity based on the number of lanes and capacity class. The capacity class represents the type of facility, such as highway, arterial, or collector. This approach is used where the road features are generally uniform over an extended distance. The daily LOS may not account for peak hour delays that result from extended queuing at closely spaced intersections or at high-demand movements.

Other methods of quantifying the LOS of a roadway segment include using the AM and PM peak hour volumes for collector or local roadways and average vehicle speeds for arterial roadway segments.

Appendix E describes these calculation methods in more detail.

Existing Levels of Service on St. Helena Roadway Segments

Streets in St. Helena generally operate acceptably with little congestion, except for Main Street, which operates at oversaturated conditions at three study locations.

To measure daily LOS, Average Daily Trip (ADT) counts were conducted by Omni-Means in August 2007 at a selection of eight key roadway segments in St. Helena. These counts were supplemented with traffic counts from sources less than two years old, including Caltrans count data and recent traffic studies. Table 4.C-5 shows existing ADT on eight key roadway segments in St. Helena. These roadways were selected as some of the most likely to be affected by future development and proposed new street extensions within the city.

TABLE 4.C-5
EXISTING ROADWAY SEGMENT AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE

Study Roadway Segments	Roadway Classification	Average Daily Traffic (ADT)	Level of Service (LOS)[a]
Main Street north of Pratt Avenue	Minor Arterial Street	**18,600**[b]	**F**
Main Street north of Adams Street	Minor Arterial Street	**17,000**	**F**
Main Street north of Mills Lane	Minor Arterial Street	**22,000**[d]	**F**
Silverado Trail north of Howell Mountain Road[c]	Collector Street	10,900	C
Oak Avenue south of Adams Street	Collector Street	4,800	A
Pope Street west of Silverado Trail	Collector Street	6,000	B
Valley View north of Grayson Avenue	Collector Street	3,500	A
Sulphur Springs Avenue west of Main Street	Collector Street	2,200	A

a See Appendix E for Average Daily Traffic (ADT) LOS definitions and standards.
b **Bold** represents unacceptable operations.
c Silverado Trail functions as a minor arterial even though it is classified as a rural collector.
d ADT calculated based on peak hour volumes from Main Street / Mills Lane intersection.

SOURCE: Fehr & Peers, 2008

Streets in St. Helena generally operate acceptably with little congestion, except for Main Street, which operates at oversaturated conditions at three study locations. Main Street has substantially more traffic than the acceptable LOS D defined by the existing St. Helena General Plan.

Existing Intersection Conditions

Roadway traffic volumes provide a limited sense of how traffic operates and where major areas of congestion typically occur. Intersection analysis is generally a useful tool to develop a better understanding of key traffic issues and conflicts. To better understand the current traffic issues facing St. Helena, six study intersections were chosen and analyzed. These intersections were selected as those most likely to be affected by future development, based on a review of intersections evaluated in previous traffic studies in St. Helena.

Intersections are typically analyzed based on the average delay in seconds that vehicles have to wait at an intersection before proceeding through. Table 4.C-6 shows the existing delay and LOS of the selected intersections. These values were calculated based on traffic counts conducted by Omni-Means in August 2007.[2] Appendix E contains the LOS computations for these intersections.

TABLE 4.C-6
EXISTING INTERSECTION LEVELS OF SERVICE

Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay[b]	LOS	Delay[b]	LOS
1. Main Street / Pratt Avenue	SSS[a]	34	D	**47**	**E**
2. Main Street / Madrona Street / Fulton Lane	Signal	14	B	16	B
3. Main Street / Adams Street	Signal	15	B	16	B
4. Main Street / Pope Street	Signal	35	D	36	D
5. Main Street / Grayson Avenue / Mills Lane	SSS	**> 50**	**F**	**> 50**	**F**
6. Silverado Trail / Pope Street	SSS	32	D	**> 50**	**F**

a Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection
b Unsignalized intersection delay is presented as the delay and LOS for the most delayed movement.
c Any delay greater than 50 seconds at a stop controlled intersection represents a failing intersection with oversaturated conditions. **Bold** represents unacceptable operations.

SOURCE: Fehr & Peers, 2010

As shown in Table 4.C-6, three of the six intersections have a peak hour LOS of E or worse during the PM peak hour. All of the intersections are unsignalized. Two of the intersections are on Main Street and one is on the Silverado Trail. The operations at these intersections are due to excessive delays and long queues for the side-street stop-controlled traffic. The delays and queues are attributed to heavy through movements along Main Street and Silverado Trail and the lack of "gaps" available for vehicles to proceed through the intersection.

Motor Vehicle Parking

Parking is mainly a concern in downtown St. Helena.

In general, the City of St. Helena has few restrictions on on-street parking, and parking is mainly a concern in downtown St. Helena. Along Main Street, parallel on-street parking is free to encourage commercial activity and to provide a buffer between pedestrians and the roadway. However, time limits are established in the downtown parking zone to encourage turnover.

2 Traffic counts are not typically taken during the summer as schools are not in session which can disproportionately affect the counts. However, in the case of St. Helena, traffic is typically higher during the summer months due to Wine Country tourism, and Omni-Means presumably took counts during August for a conservative estimate of daily traffic volumes.

Public Transit

Public transit services are available in all of the cities and in much of the unincorporated area of Napa County. The primary transit service in Napa County is provided by the VINE, a fixed-route bus service providing service to Calistoga, St. Helena, Napa, American Canyon, Yountville, and parts of unincorporated Napa County.

Development and land use patterns in the Napa Valley have resulted in low rates of transit ridership.

Development and land use patterns in the Napa Valley have resulted in low rates of transit ridership. According to the 2000 Census, 1.4 percent of St. Helena residents commute by transit (see Table 4.C-1), compared to 5.0 percent statewide.

St. Helena is served by VINE Route 10 and the St. Helena Shuttle. The bus routes through St. Helena are shown in Figure 4.C-2 and function as follows:

- *Route 10* – A major intercity route in Napa County, Route 10 provides service between Calistoga and Vallejo approximately once an hour from 5:00 AM to 9:45 PM on weekdays, once every hour and a half to two hours on Saturdays from 6:00 AM to 8:45 PM, and four times a day on Sundays between 8:20 AM and 7:15 PM. Within St. Helena, Route 10 runs along Main Street and makes stops at Pratt Avenue, City Hall, Mitchell Drive, Mills Lane, and Dowdell Lane. Route 10 provides transit connections at the Vallejo Ferry Terminal to the greater San Francisco Bay Area region.

- *St. Helena VINE Shuttle* – The St. Helena Shuttle provides a fixed route service within the City of St. Helena and to the St. Helena Hospital in Deer Park, just north of the city. The shuttle is also available for door-to-door service within St. Helena when a reservation is made on the same day of travel. The shuttle operates ten trips on weekdays between the hours of 7:45 AM and 5:00 PM. Service is not available on weekends.

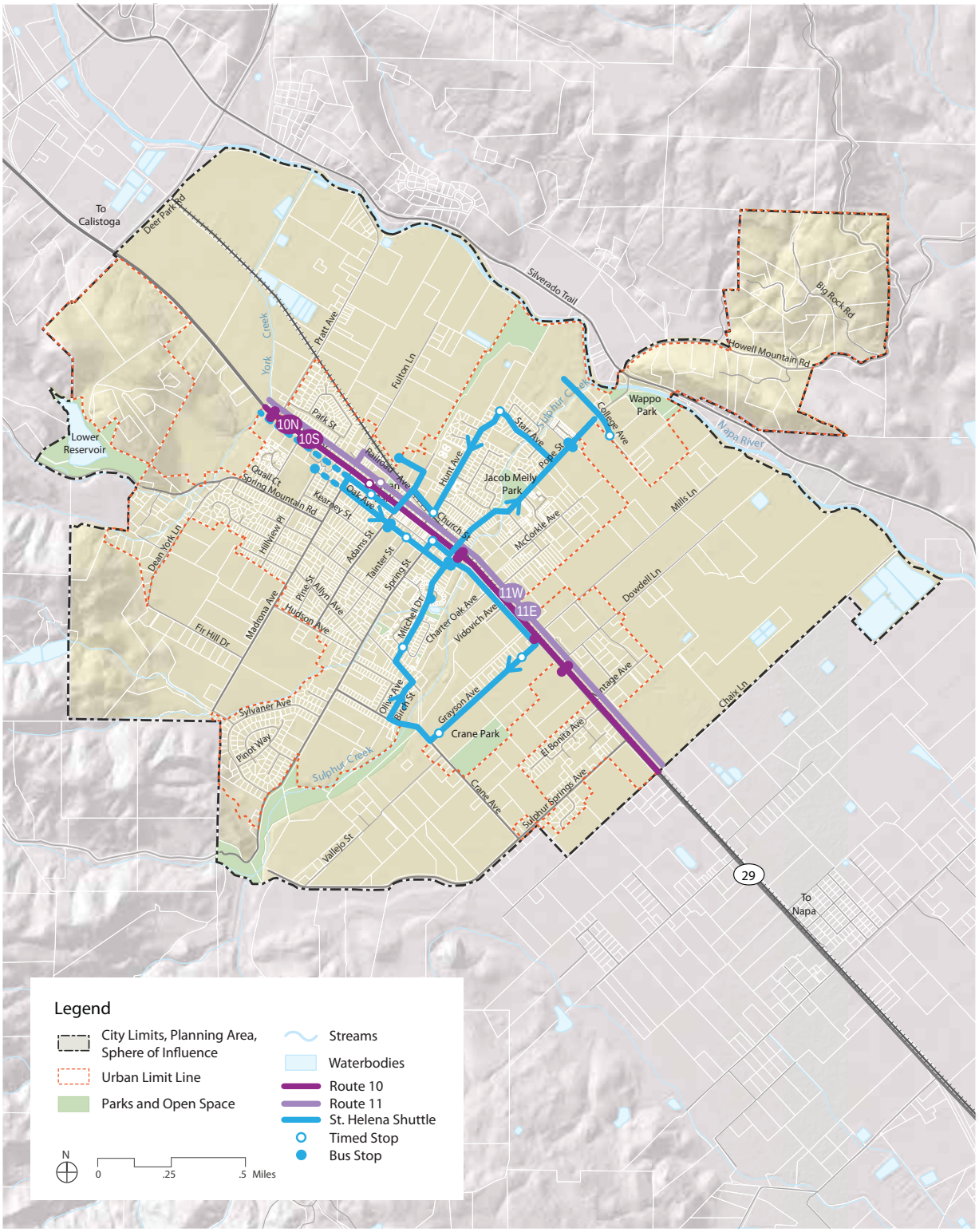
Bicycle Circulation

The size, topography, and climate of St. Helena make it an ideal city for bicycling.

The size, topography, and climate of St. Helena make it an ideal city for bicycling. Bicycles are a convenient means of transportation for short trips within cities, especially those less than three miles in length.

According to the 2000 Census, 0.3 percent of workers commute by bicycle in the City of St. Helena (see Table 4.C-1). However, this estimate does not capture recreational trips, which are the majority of all bicycling trips in St. Helena.

The existing and planned bicycle network is illustrated in Figure 4.C-3. All existing city bicycle routes are “Class III” bikeways (shared use with pedestrian or motor vehicle traffic), with the exception of one segment of “Class II” bike lane (striped lane for one-way bike travel on street) along Starr Avenue. These bicycle routes are consistent with the existing (1993) St. Helena General Plan, which states that bicyclists shall be discouraged from using



SOURCE: City of St. Helena; Napa County
Map Revised: June 2010

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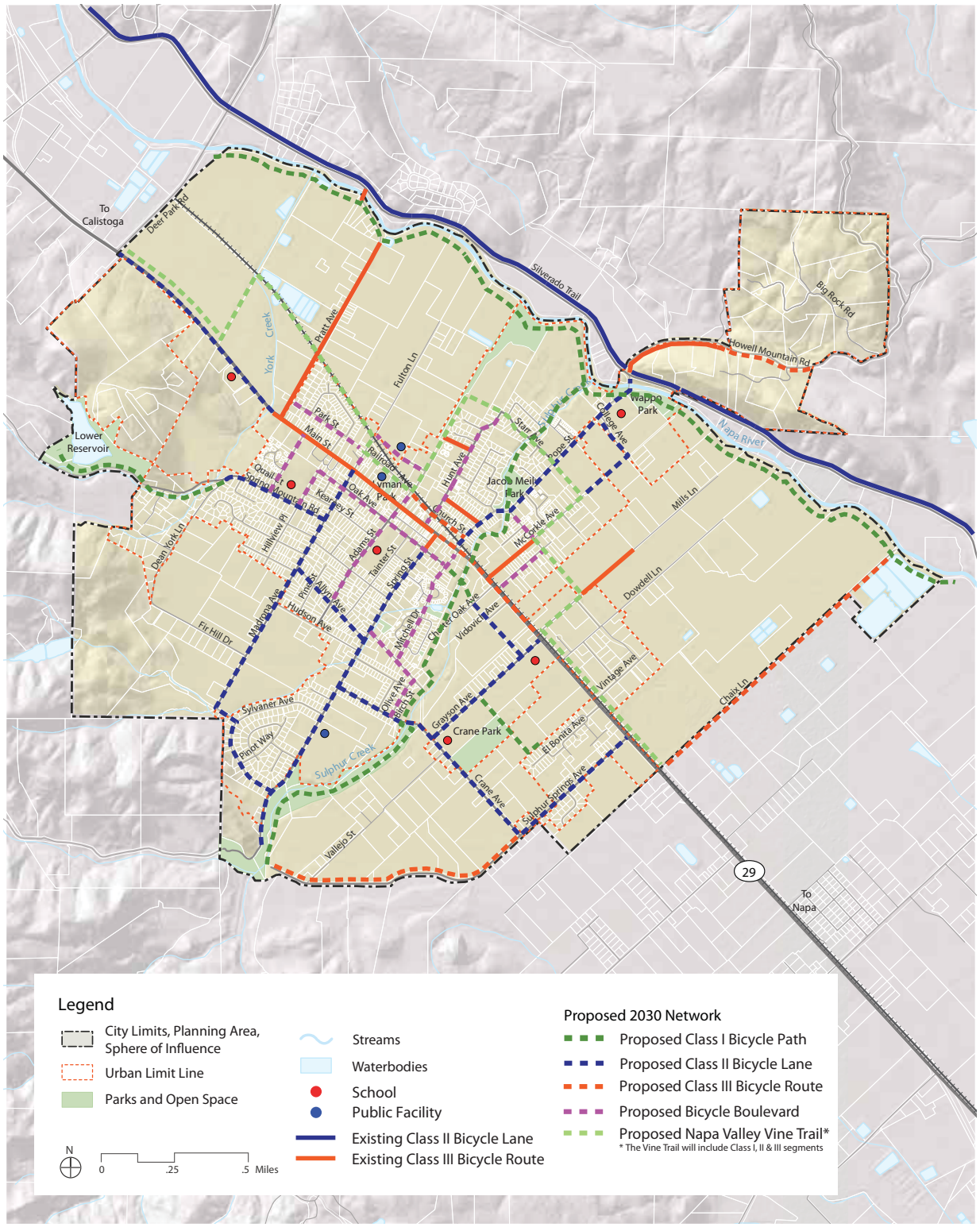
Figure 4.C-2
Existing Public Transit Network



SOURCE: City of St. Helena; Napa County
Map Revised: June 2010

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Figure 4.C-3
Existing and Planned Bicycle Network

Main Street for safety purposes and shall be encouraged to use other parallel streets. SR 29 is designated as a Class III bikeway. The city has no Class I bike facilities (separated right-of-way for exclusive use of bicycles and pedestrians). Plans for the Vine Trail would provide Class I, II & III segments throughout the community connecting St Helena to regional destinations throughout the Napa Valley.

Key constraints to bicycling in St. Helena include the lack of bikeway and support facilities (such as bicycle parking).

Pedestrian Circulation

Neighborhoods toward the city's periphery have fewer pedestrian amenities and lack sidewalks in some locations.

Downtown St. Helena was originally developed with a grid of streets that included a comprehensive network of sidewalks in most parts of the city. The central business district surrounding Main Street is the city's core pedestrian district. Older neighborhoods surrounding the downtown core generally have well-maintained sidewalks that provide pedestrian access between residential areas and schools, community centers, and other walkable destinations. Additionally, some traffic calming measures have recently been implemented along Sulphur Springs Avenue, Crane/Valley View and Spring Street to improve the walking environment by reducing vehicular speeds.

Neighborhoods toward the city's periphery have fewer pedestrian amenities and lack sidewalks in some locations. Areas such as the Dean York neighborhood have a rural character where sidewalks may not be appropriate, while traditional suburban developments were designed primarily for vehicular access.

Open Space Access

Several open spaces and parks located within St. Helena and in the surrounding area lack well-defined and accessible connections for pedestrians and bicyclists. For example, Lower Reservoir Park, a proposed but unbuilt park located at the northwest end of the city, lacks pedestrian access. Future opportunities for a multi-use trail that connects to the park are being considered by the City of St. Helena. Similarly, opportunities to provide pedestrian and bicycle access to the Napa River are being pursued by local wineries and will create recreational and commuting opportunities for both visitors and local residents.

Rail Service

The Napa Valley Wine Train is a private, family-owned tourist rail service that brings passengers from Napa to St. Helena.

No commuter or freight rail service exists in St. Helena. The Napa Valley Wine Train is a private, family-owned tourist rail service that is operated by the Napa Valley Railroad. The Wine Train brings passengers from the City of Napa to the City of St. Helena, although passengers are not allowed to embark or

disembark at St. Helena. The Wine Train rail line runs parallel to SR 29 starting in Napa and passes through the towns of Yountville, Rutherford, and Oakville.

The *Napa / Solano Passenger / Freight Rail Study* (R.L. Banks & Associates, Inc., 2003) investigated the viability of expanded rail service within the Napa Valley. The study projected start-up costs of $100 million to $140 million for stand-alone passenger service.

Airports

There are no airports in St. Helena. The closest airports are Angwin-Parrett Field, a public use general aviation airport located in Angwin; Napa County Airport, a public airport located in Napa; and Charles M. Schulz Airport, a public airport located in Santa Rosa.

Regulatory Framework

Federal Regulations (Americans with Disabilities Act)

Titles I, II, III and V of the Americans with Disabilities Act (ADA) of 1990 have been codified in Title 42 of the United States Code, beginning at Section 12101. Title III prohibits discrimination on the basis of disability in "places of public accommodation" (businesses and non-profit agencies that serve the public) and "commercial facilities" (other businesses). The regulation includes Appendix A to Part 36 (Standards for Accessible Design) establishing minimum standards for ensuring accessibility when designing and constructing a new facility or altering an existing facility.

Examples of key guidelines include detectable warnings for pedestrians entering traffic where there is no curb, a clear zone of 48 inches for the pedestrian travelway, and a vibration-free zone for pedestrians.

State Programs and Regulations

State Transportation Improvement Program

The California Department of Transportation (Caltrans) manages the operation of state highways, including State Route 29 through St. Helena.

The California Transportation Commission (CTC) administers transportation programming, the public decision-making process that sets priorities and funds projects envisioned in long-range transportation plans. It commits expected revenues over a multi-year period to transportation projects. The State Transportation Improvement Program (STIP) is a multi-year capital improvement program of transportation projects on and off the state highway system, funded with revenues from the State Highway Account and other funding sources. The California Department of Transportation (Caltrans) manages the operation of state highways, including SR 29 through St. Helena.

AB 32 and SB 375

With the passage of Assembly Bill (AB) 32, the Global Warming Solutions Act of 2006, the State of California committed itself to reducing greenhouse gas (GHG) emissions to 1990 levels by 2020. The California Air Resources Board (CARB) is coordinating the response to comply with AB 32.

In 2007, CARB adopted a list of early action programs that could be put in place by January 1, 2010. In 2008, CARB defined its 1990 baseline level of emissions, and by 2011 it will complete its major rule making for reducing GHG emissions. Rules on emissions, as well as market-based mechanisms like the proposed cap and trade program, will take effect January 1, 2012.

On December 11, 2008, CARB adopted its Proposed Scoping Plan for AB 32. This scoping plan included the approval of Senate Bill (SB) 375 as the means for achieving regional transportation-related GHG targets. SB 375 provides guidance on how curbing emissions from cars and light trucks can help the state comply with AB 32.

SB 375 contains the following major components:

- *Regional GHG Emissions Targets.* SB 375 addresses regional GHG emissions targets. CARB's Regional Targets Advisory Committee will guide the adoption of targets to be met by 2020 and 2035 for each Metropolitan Planning Organization (MPO) in the state. These targets, which MPOs may propose themselves, will be updated every eight years in conjunction with the revision schedule of housing and transportation elements.

- *Sustainable Communities Strategy.* MPOs will be required to create a Sustainable Communities Strategy (SCS) that provides a plan for meeting regional targets. The SCS and the Regional Transportation Plan (RTP) must be consistent with each other, including action items and financing decisions. If the SCS does not meet the regional target, the MPO must produce an Alternative Planning Strategy that details an alternative plan to meet the target.

- *Coordination of Housing and Transportation Plans.* SB 375 requires that regional housing and transportation plans be synchronized on eight-year schedules. In addition, Regional Housing Needs Assessment (RHNA) allocation numbers must conform to the SCS. If local jurisdictions are required to rezone land as a result of changes in the housing element, rezoning must take place within three years.

- *Transportation and Air Emissions Modeling.* Finally, MPOs must use transportation and air emissions modeling techniques consistent with guidelines prepared by the CTC. Regional transportation planning agencies, cities, and counties are encouraged, but not required, to use travel demand models consistent with the CTC guidelines.

Regional Agencies and Plans

Metropolitan Transportation Commission (MTC)

The Metropolitan Transportation Commission prepares the regional transportation plan (RTP), a long-range development plan for allocating state and federal transportation funds.

The majority of federal, state, and local financing available for transportation projects is allocated at the regional level by the MTC, the transportation planning, coordinating, and financing agency for the nine-county Bay Area. MTC prepares the regional transportation plan (RTP), which is a long-range development plan for allocating state and federal transportation funds. The current RTP, known as Transportation 2035, was adopted by MTC on April 22, 2009. Transportation 2035 specifies a detailed set of investments and strategies throughout the region from 2009 through 2035 to maintain, manage, and improve the surface transportation system. The plan specifies how anticipated federal, state, and local transportation funds will be spent in the Bay Area during the next 25 years. Most of this "committed funding" will go toward maintaining the region's existing transportation infrastructure.

Bay Area Air Quality Management District (BAAQMD)

The Bay Area Air Quality Management District (BAAQMD) is the regional agency with the authority to develop and enforce regulations for the control of air pollution throughout the Bay Area. The Clean Air Plan is BAAQMD's plan for reducing the emissions of air pollutants that lead to ozone. BAAQMD has also published CEQA Guidelines for the purpose of evaluating the air quality impact of projects and plans. One of the criteria that the guidelines describe is that plans, including General Plans, must demonstrate reasonable efforts to implement transportation control measures (TCMs) included in the Clean Air Plan that identify local governments as the implementing agencies. On-road motor vehicles are the largest source of air pollution in the Bay Area. To address the impact of vehicles, the California Clean Air Act requires air districts to adopt, implement, and enforce TCMs.

Napa County Transportation and Planning Agency (NCTPA)

The Napa County Transportation and Planning Agency (NCTPA) is the countywide transportation planning body for the incorporated and unincorporated areas of Napa County.

The Napa County Transportation and Planning Agency (NCTPA) serves as the countywide transportation planning body for the incorporated and unincorporated areas of Napa County. Because the County does not have a Congestion Management Agency or an adopted congestion management plan, NCTPA works with the Metropolitan Transportation Commission (MTC) to prepare the Napa County portion of the regional transportation plan (RTP).

In 1999, the NCTPA adopted the Napa County Strategic Transportation Plan which the NCTPA intended to be a long-range guide for decision-making and funding of Napa County roadways, transit, and bicycle facilities. The plan was recently updated through the Napa Transportation Future Study (Napa County 2009).

The following goals are included in this report:

- Reduce/restrain growth of automobile vehicle miles traveled (VMT)
- Spread the travel load from peak times to non-peak times
- Improve the quality and safety of our street and road infrastructure
- Shift travel from Single-Occupancy Vehicles to other modes
- Reduce overall energy use and greenhouse gas (GHG) emissions

Facilities that are included in this transportation analysis include State Routes 29/128 and the Silverado Trail.

Local Plans

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions for transportation and traffic.

The proposed project analyzed in this EIR is the St. Helena General Plan Update (General Plan Update), which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Bicycle Master Plan

The City currently has a *Bicycle Master Plan* developed as part of the Napa County Transportation and Planning Agency's countywide *Bicycle Master Plan* that was adopted in 2003. The countywide *Bicycle Master Plan* identifies six improvements in the City of St. Helena. The countywide Bicycle Master Plan will be updated in 2010/11.

Impacts and Mitigation Measures

This subsection describes the transportation analysis methodology and assumptions, lists criteria for determining impact significance, identifies relevant policies and implementing actions of the proposed General Plan Update, and identifies potential impacts of the proposed General Plan Update. Mitigation measures are recommended for potentially significant impacts.

Methodology and Assumptions

Quantitative roadway impact analysis was conducted for Year 2030 land uses and transportation improvements described in the proposed General Plan Update. Impacts are identified based upon comparison between existing conditions (based on data collected from 2007 to 2009) and future (Year 2030) with General Plan Update conditions. For purposes of this EIR, General Plan Update conditions are based on forecasted Year 2030 land uses and transportation improvements described in the proposed General Plan Update.

Planned Roadway Improvements

The General Plan Update carries over several street extensions from the 1993 General Plan to provide new connections and reduce traffic congestion within the city, particularly along SR 29. The analysis of future conditions in this EIR assumes that these improvements identified in the proposed General Plan Update would be in place by the Year 2030.

The proposed street extensions include the following and are shown in Figure 4.C-4:

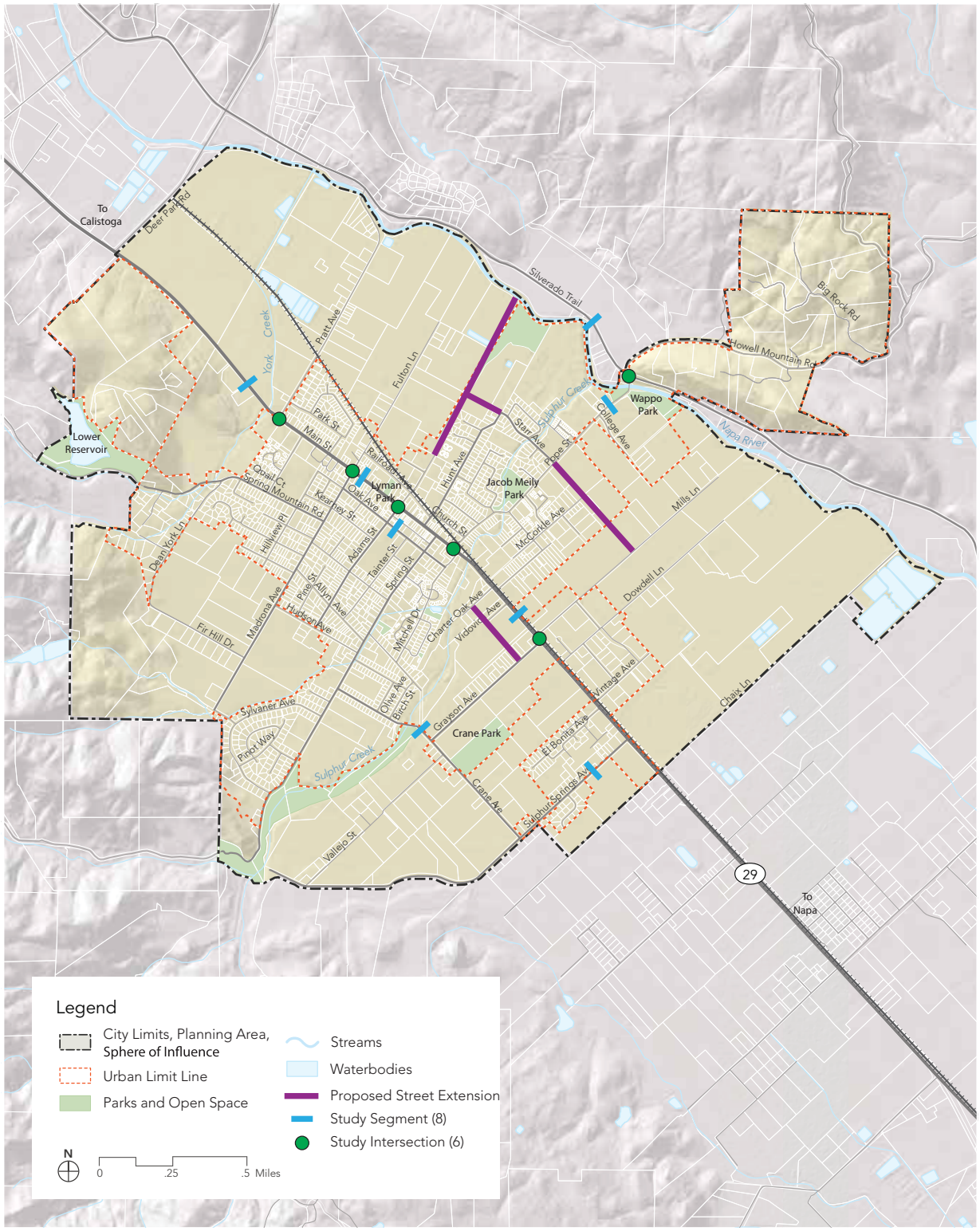
- *Starr Avenue* extension north to Adams Street;
- *Starr Avenue* or *College Avenue* extension to Mills Lane;
- *Oak Avenue* from Charter Oak Avenue to Grayson Avenue;
- *Adams Street* extension from its current eastern terminus to Starr Avenue; and
- Extension to Silverado Trail, by extending *Adams Street* or *Mills Lane*.

For the two street extensions where multiple variations exist, the transportation analysis for Year 2030 assumes a Starr Avenue extension to Mills Lane and an Adams Street extension to Silverado Trail. These were selected in consultation with City staff, who expect that these would be the more likely variations for street extensions and would provide the most benefit to transportation circulation within the city.

Travel Demand Forecasting Model

The City of St. Helena does not currently have a local travel demand forecasting model. Therefore, the Napa-Solano County travel demand forecasting (TDF) model was used to forecast future traffic volumes for the General Plan Update.

Land use inputs for the Napa-Solano model were based on the Year 2030 land uses contained in the General Plan Update. These land uses were then allocated to traffic analysis zones (TAZs). The TAZs are geographic



SOURCE: City of St. Helena; Napa County
Map Revised: June 2010

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Figure 4.C-4
Proposed Street Extensions

polygons used to organize land use input data for the TDF model. The TAZs are defined by natural borders such as roads, waterways, and topography and typically represent areas of homogenous travel behavior.

Because Napa-Solano County TDF model is a regional model, it only provides a coarse level of detail for TAZs and streets in St. Helena. It is also not validated for all streets within the city. As a result, the model does not provide a high degree of precision for forecasting specific traffic volume changes on individual streets. Results presented in this section of the EIR are based on model output but should be considered as planning-level forecasts that do not necessarily indicate traffic volumes.

The land use forecasts for Year 2030 were input to the Napa-Solano TDF model, and the model was run to generate AM and PM peak hour traffic volume forecasts. The Napa-Solano TDF model was run using the proposed roadway network to identify potential roadway intersection and segment deficiencies. Table 4.C-7 summarizes the number of peak hour vehicle trips estimated by the model under existing conditions and with the proposed General Plan Update.

TABLE 4.C-7
CHANGE IN CITYWIDE PEAK HOUR VEHICLE TRIP GENERATION COMPARED TO EXISTING CONDITIONS

Existing Conditions	General Plan Update	Change
7,900	8,900	+1,000 (13%)

- Conditions are based on the sum of AM and PM peak hour vehicle trips that are generated within St. Helena.

SOURCE: Fehr & Peers, 2010 and Napa-Solano Travel Demand Forecasting Model

Transportation Performance Measures

As part of the General Plan Update process, the City of St. Helena is considering new transportation performance measures to ensure that the General Plan Update will reflect a balanced perspective on transportation given the full set of community values and interests. As such, the City is considering replacing the traditional automobile Level of Service (LOS) threshold with measures that capture transportation system performance from the perspective of all users and incorporate the environmental consequences of transportation decisions, especially with regards to climate change. A key part of this effort is to better understand how vehicle trips and vehicle miles traveled (VMT) relate to greenhouse gas (GHG) emission reduction goals. A new approach is designed to achieve the following objectives:

- Develop an alternative way of evaluating new land use development impacts for automobiles, pedestrians, bicycles, and transit.
- Develop a quantifiable way of measuring the transportation-related GHG impacts and benefits of new land use development and transportation infrastructure improvements.

Adoption of the General Plan Update would establish new standards and measures that evaluate transportation system performance from the perspective of all users and incorporate the environmental consequences of transportation decisions, especially with regard to climate change. As described in the Circulation Element section of the General Plan Update, the purpose of establishing new transportation performance measures is to develop a meaningful nexus between transportation-related development impacts and the City's desired mitigations. The proposed performance measures contained in the General Plan Update aim to reduce greenhouse gas emissions, improve multimodal circulation and manage traffic congestion in St. Helena. The reasons for adopting new standards include:

- Traditional automobile Level of Service (LOS) measures driver comfort and convenience based largely on delay experienced while driving, without consideration for other roadway users, including bicyclists, pedestrians, and transit riders.
- Mitigation measures based on traditional LOS can result in widening roads and intersections that would not be in accordance with community character or other values established in this General Plan. Additionally, such measures can have a negative impact on other travel modes and encourage additional vehicle trips.
- Thresholds for traditional LOS standards are not necessarily linked to the City's vitality and quality of life, and can make smart growth projects, such as mixed-use infill development in downtown St. Helena, more difficult.

Several targets, including operating standards for vehicular travel times on Main Street *(Policy CR1.11)*, standards for new auto trips generated by new development *(Implementing Action CR1.H)* and targets for increasing pedestrian and bicycle trips *(Policy CR3.3)*, have been set forth in the goals, policies, and implementing actions of the Circulation Element of the General Plan Update.

Motor Vehicle Circulation Analysis

A general trend nationwide has been that increases in trips and trip length proceed at a higher rate than growth in population. This is due in part to changing lifestyles (the prevalence of two-income families and a greater percentage of non-work trips on a day-to-day basis) and increased reliance on the private automobile. St. Helena's roadways currently experience

congestion during peak travel periods. Even with substantial increases in alternative mode shares in the years ahead, automobile travel in St. Helena will remain the form of transportation used for most trips. Potential impacts are evaluated at study intersections and roadway segments.

LOS was forecast at each of the study intersections and roadway segments (shown in Figure 4.C-5). The Napa-Solano travel demand forecasting (TDF) model was used to generate traffic volume forecasts resulting from implementation of the General Plan Update, shown in Figure 4.C-5. These data were used to determine the peak LOS rating, or hour when the highest number of vehicles passed through the intersection during each commute period for the study intersections and average daily trips (ADT) and daily LOS for the study roadway segments. Table 4.C-8 lists each study intersection along with a comparison of the AM and PM peak level of service for existing conditions and future conditions. Table 4.C-9 lists each study roadway segment along with a comparison of the daily level of service for existing conditions and future conditions. Figure 4.C-6 shows study intersections and roadway segments where potentially significant impacts are anticipated.

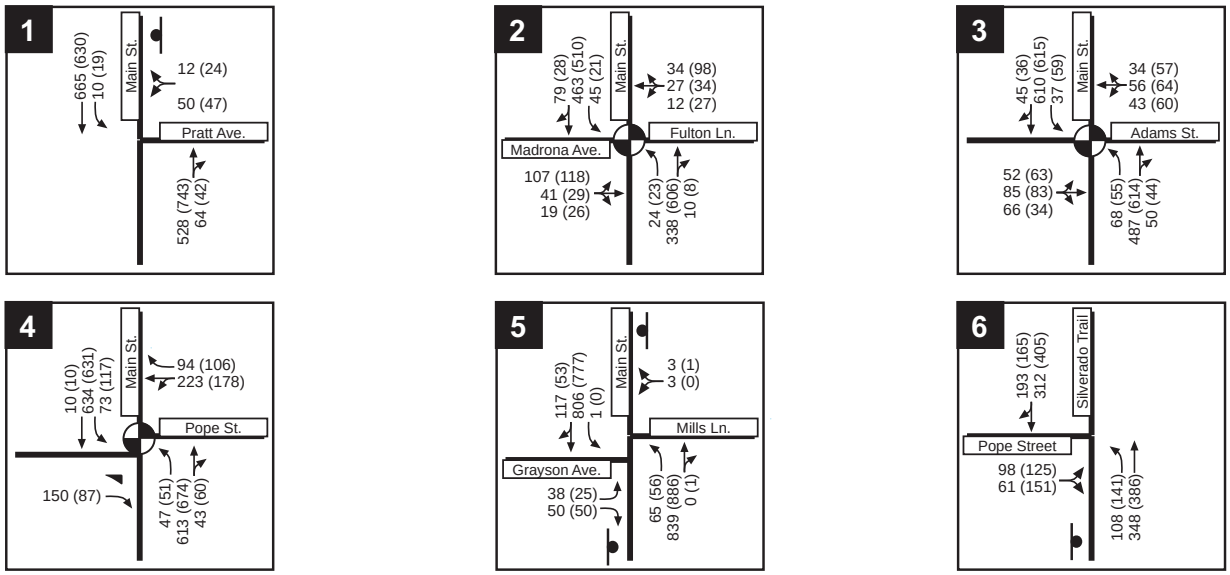
Future Intersection Operations

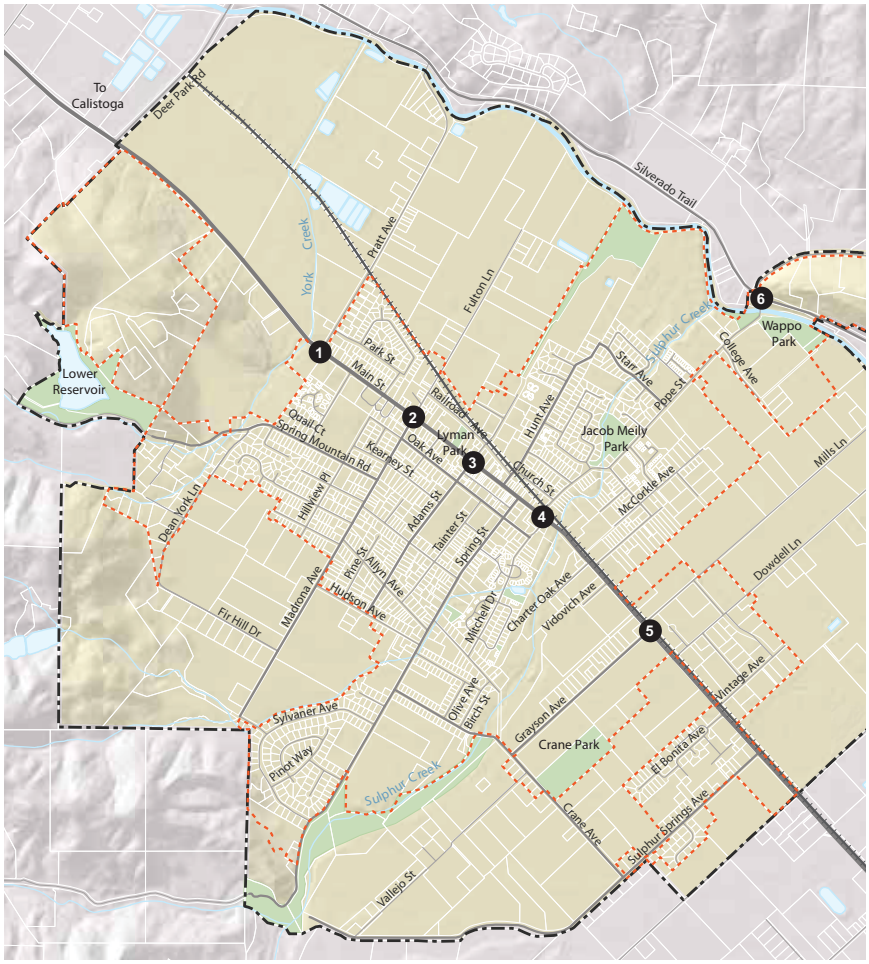
Six intersections were studied as shown in Table 4.C-8. At the Silverado Trail/Pope Street study intersection, intersection operations are unacceptable (LOS C or worse for all streets except Main Street, where LOS D is acceptable) under Existing Conditions and would deteriorate to a lower LOS under Year 2030 General Plan Update conditions for the AM peak hour. PM peak hour conditions at the Silverado Trail/Pope Street intersection would remain at an unacceptable LOS F, and traffic volumes would increase by more than five percent. By the Year 2030, peak hour signal warrant criteria may be met for this intersection during the PM peak hour.

While the Main Street/Pratt Avenue intersection would deteriorate from LOS D to LOS E during the AM peak hour and from LOS E to LOS F during the PM peak hour, signal warrant criteria would not be met because the side-street approach would not serve more than 100 vehicles in the AM or PM peak hour.

At the following study intersections, intersection operations are acceptable under Existing Conditions and would deteriorate to a lower acceptable LOS under Year 2030 General Plan Update conditions:

- Main Street / Madrona Street / Fulton Lane (for PM peak hour)
- Main Street / Adams Street (for AM and PM peak hour)





Legend

XX (YY) = AM (PM) Peak Hour Traffic Volumes

= Traffic Signal

= Stop Sign

SOURCE: City of St. Helena; Napa County
Map Revised: June 2010

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Figure 4.C-5

Existing Intersection Geometries and Turning Movements

TABLE 4.C-8
INTERSECTION LEVELS OF SERVICE: EXISTING AND GENERAL PLAN UPDATE CONDITIONS

		Existing Conditions				Year 2030 General Plan Update Conditions			
		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
Intersection	**Control Type[a]**	**Delay[b]**	**LOS**	**Delay[b]**	**LOS**	**Delay[b]**	**LOS**	**Delay[b]**	**LOS**
1. Main Street / Pratt Avenue	SSS	34	D	**47**	**E**	**> 50[c]**	**F**	**> 50**	**F**
2. Main Street / Madrona Street / Fulton Lane	Signal	14	B	16	B	16	B	20	C
3. Main Street / Adams Street	Signal	15	B	16	B	29	C	23	C
4. Main Street / Pope Street	Signal	35	D	36	D	54	D	52	D
5. Main Street / Grayson Avenue / Mills Lane	SSS[d]	**> 50**	**F**	**> 50**	**F**	52	D	25	C
6. Silverado Trail / Pope Street	SSS	32	D	**> 50**	**F**	**47**	**E**	**> 50**	**F**

LOS = level of service

[a] Signal = Signalized intersection; AWS = All-Way Stop-Controlled intersection; SSS = Side-Street Stop-Controlled intersection
[b] Unsignalized intersection delay is presented as the delay and LOS for the most delayed movement.
[c] Any delay greater than 50 seconds at a stop controlled intersection represents a failing intersection with oversaturated conditions. **Bold** represents unacceptable operations.
[d] Signalized under General Plan Update conditions.

SOURCE: Fehr & Peers, 2010

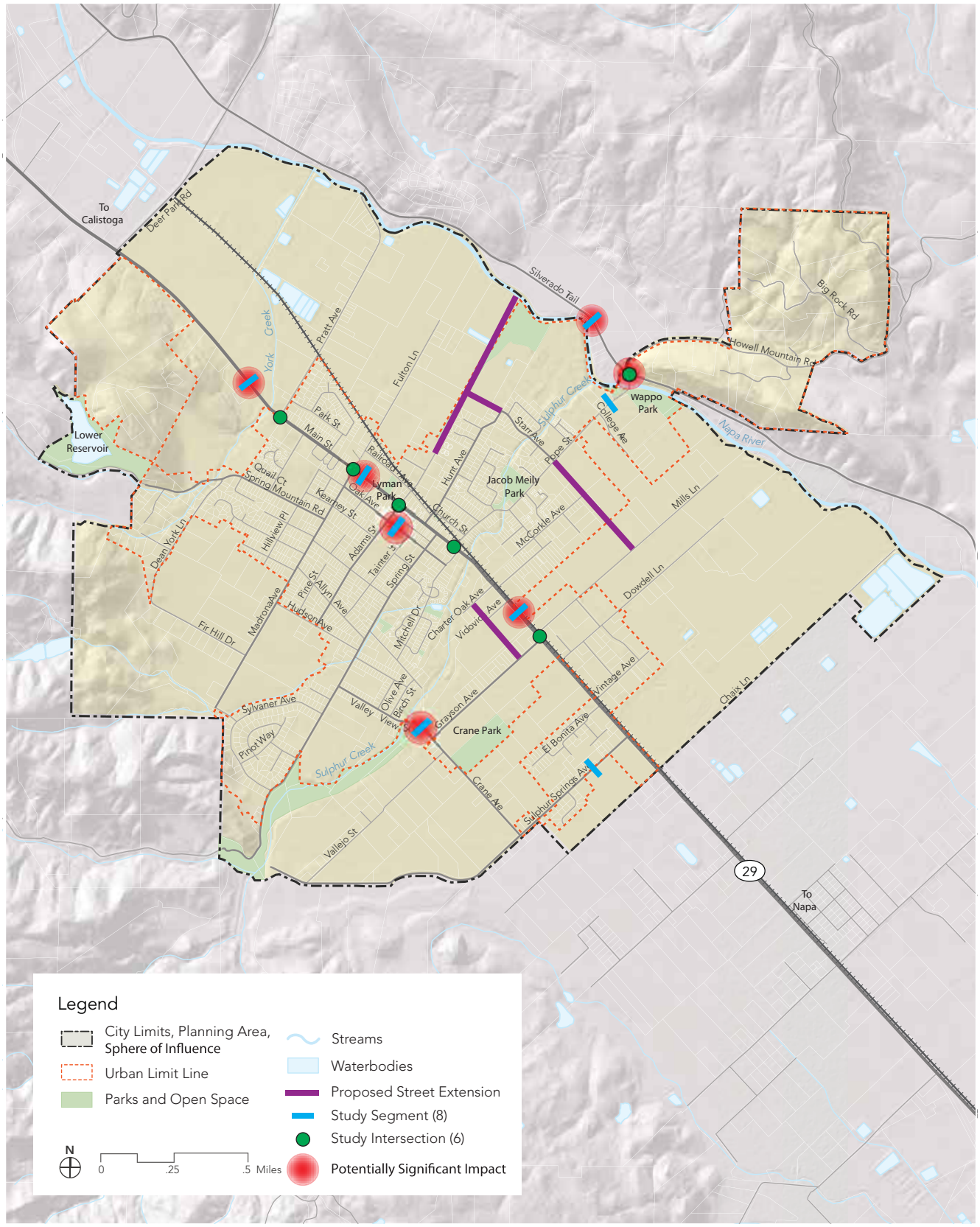
TABLE 4.C-9
ROADWAY SEGMENT AVERAGE DAILY TRAFFIC AND LEVELS OF SERVICE: EXISTING AND GENERAL PLAN UPDATE CONDITIONS

		Existing Conditions		Year 2030 General Plan Update Conditions	
Study Roadway Segments	**Roadway Classification**	**ADT**	**LOS[a]**	**ADT**	**LOS[a]**
Main Street north of Pratt Avenue	Minor Arterial Street	**18,600[b]**	**F**	**28,500**	**F**
Main Street north of Adams Street	Minor Arterial Street	**17,000**	**F**	**21,000**	**F**
Main Street north of Grayson Avenue/Mills Lane	Minor Arterial Street	**22,000**	**F**	**25,200**	**F**
Silverado Trail north of Howell Mountain Road[c]	Minor Arterial Street[d]	10,900	C	12,900	D
Oak Avenue south of Adams Street	Collector Street	4,800	A	**10,000[e]**	**F**
Pope Street west of Silverado Trail	Collector Street	6,000	B	3,700	A
Valley View north of Grayson Avenue	Collector Street	3,500	A	**9,200[e]**	**F**
Sulphur Springs Avenue west of Main Street	Collector Street	2,200	A	4,600	A

LOS = level of service; ADT = average daily traffic

[a] See Appendix E for ADT LOS definitions and standards.
[b] **Bold** represents unacceptable operations.
[c] Silverado Trail functions as a minor arterial even though it is classified as a rural collector.
[d] Silverado Trail is defined as a Collector Street but functions as a Minor Arterial Street.
[e] Forecast traffic volumes on Oak Avenue and Valley View increase due primarily to regional vehicle trips being diverted from Main Street to parallel routes. Forecasts are from the Napa-Solano regional travel demand model which has a coarse degree of detail for collector streets in St Helena. Due to local street conditions and factors not specifically considered in the model, actual changes in traffic demand may be substantially less than shown.

SOURCE: Fehr & Peers, 2010



SOURCE: City of St. Helena; Napa County
Map Revised: June 2010

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Figure 4.C-6
Study Intersections and Roadway Segments with Potentially Significant Impacts

Operations at the Main Street/Pope Street intersection are not expected to change as a result of implementation of the General Plan, and operations at the Main Street/Grayson Avenue/Mills Lane intersection would improve due to the planned signalization of the intersection.

Future Roadway Segment Operations

Eight roadway segments were studied as shown in Table 4.C-9. Operations at the following study roadway segments would deteriorate from an acceptable LOS (C or better) to an unacceptable LOS (LOS D or worse):

- Silverado Trail north of Howell Mountain Road
- Oak Avenue south of Adams Street
- Valley View Street north of Grayson Avenue

Forecast traffic volumes on Oak Avenue and Valley View Street increase due primarily to regional vehicle trips being diverted from Main Street to parallel routes. To avoid congestion in the downtown area, the TDF model forecasts some northbound regional traffic will turn west off of SR 29 onto Sulphur Springs Avenue, then north onto Crane Avenue (which turns into Valley View Street). Valley View Street would experience a larger increase in traffic compared to Sulphur Springs Avenue because it also serves diverted traffic from Grayson Avenue.

Because the Napa-Solano TDF model contains a coarse degree of detail for collector streets in St. Helena, these streets may not experience as great of an increase in traffic demand as indicated by the model results shown in Table 4.C-9. Design characteristics of these streets such as narrower lanes, presence of on-street parking, frequent intersections, low average vehicle speeds, and traffic calming measures serve to limit their attractiveness to regional cut-through traffic. Due to these local street conditions and factors not specifically considered in the TDF model, actual changes in traffic demand may be substantially less than shown. However, for purposes of this analysis, impacts are identified based on Year 2030 forecasts generated by the Napa-Solano TDF model.

The following study roadway segments along Main Street would remain at LOS F under General Plan Update conditions and would experience increases in average daily volumes of more than five percent:

- Main Street north of Pratt Avenue
- Main Street north of Adams Street
- Main Street north of Grayson Avenue/Mills Lane

Roadway segments on Pope Street and Sulphur Springs Avenue would remain at acceptable levels of service under General Plan Update conditions.

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant transportation and traffic impact if it would:

- Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;

- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways;

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks;

- Substantially increase hazards due to a design feature (i.e., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);

- Result in inadequate emergency access; or

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

Based on the City of St. Helena's current transportation impact criteria and the state of the practice for evaluating impacts on the transportation system, the above general significance criteria are interpreted as follows in evaluating the proposed General Plan Update.

City Roadway and Intersection Impact Criteria

The City's current LOS standard is LOS D for signalized intersections on Main Street and LOS C elsewhere. Based on existing CEQA and City of St Helena standards, traffic impacts are identified as significant if implementation of the General Plan Update would cause:

- Operations at a signalized intersection along Main Street to deteriorate from LOS D under conditions without the project to LOS E or F, or operations at other signalized intersections to deteriorate from LOS C under conditions without the project to LOS D, E or F.

- The LOS to deteriorate to LOS F for signalized intersections that operate at LOS E under conditions without the project.

- The average intersection delay to increase by more than five seconds for signalized intersections that operate at LOS F under conditions without the project.

- The LOS to deteriorate to LOS D, E or F for unsignalized intersections operating at LOS C or better under conditions without the project, **and** the traffic volumes would satisfy the Caltrans peak hour volume warrant criterion for traffic signal installation. For unsignalized intersections on Main Street operating at LOS D or better under conditions without the project, the impact would be significant if the project would cause the LOS to deteriorate to LOS E or F, **and** the traffic volumes would satisfy the Caltrans peak hour volume warrant criterion for traffic signal installation.

- Average delay to increase by five or more seconds for unsignalized intersections operating at unacceptable levels (LOS D, E or F; or LOS E or F on Main Street) under conditions without the project, **and** the traffic volumes would satisfy the Caltrans peak hour volume warrant criterion for traffic signal installation.

- Operations on street segments to deteriorate from LOS D under conditions without the project to LOS E or F. For street segments that operate at LOS E under conditions without the project, the impact would be significant if the project would cause the LOS to deteriorate to LOS F.

- For street segments that operate at LOS F under conditions without the project, the average daily volume to increase by more than five percent.

Parking Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Alter land uses within the Parking Impact Area (as shown in Figure 5-3 of the 1993 General Plan) in Downtown St. Helena to produce more demand for parking than it proposes to supply.

Design Review Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Introduce a design feature that substantially increases traffic safety hazards.

Air Traffic Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Increase air traffic levels, resulting in a substantial safety risks.

Emergency Access Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Provide inadequate design features to accommodate emergency vehicle access and circulation; or
- Cause a substantial decrease in travel speeds on primary emergency response routes such that emergency vehicles would be significantly delayed.

Pedestrian Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Disrupt existing pedestrian facilities;
- Interfere with planned pedestrian facilities;
- Not provide accessible pedestrian facilities that meet current Americans with Disabilities (ADA) best practices; or
- Create inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards.

Bicycle Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Disrupt existing bicycle facilities;
- Interfere with planned bicycle facilities;
- Conflict or create inconsistencies with adopted bicycle system plans, guidelines, policies, or standards; or
- Not provide secure and safe bicycle parking in adequate proportion to anticipated demand.

Transit Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Result in a significant unanticipated increase in transit patronage; or
- Disrupt existing, or interfere with planned, transit services or facilities.

Vehicle Miles Traveled (VMT) Impact Criteria

Implementation of the General Plan Update would have a significant impact if it would:

- Cause citywide vehicles miles traveled (VMT) per service population (residential population plus employees) to increase over existing conditions.

Relevant Policies

The proposed General Plan Update includes the following policies and implementing actions that address transportation and are relevant to the current analysis:

LU2.8. Promote safe, walkable and bikeable residential neighborhoods and vibrant, livable streets.

LU2.9. Promote walkable and accessible neighborhoods through mixed-use development.

LU3.2. Enhance the pedestrian-oriented character of commercial areas and provide for convenient pedestrian and bicycle connections to encourage walking and reduce vehicle trips within the commercial area.

LU3.3. Support the redevelopment of auto-oriented commercial areas into pedestrian-friendly commercial uses.

LU3.7. Provide sufficient auto and bicycle parking in order to serve local businesses in the commercial districts. Ensure that all parking areas are well-designed, and that auto parking spaces are hidden from pedestrian view, whenever possible.

LU3.9. In Mixed-Use, Service Commercial and Central Business districts encourage residential and office uses in upper-story locations or locations along the periphery of the retail district. This will facilitate active and pedestrian-oriented commercial areas.

LU3.10. Require office development in Mixed-Use, Service Commercial and Central Business districts to complement the pedestrian orientation of surrounding development.

LU3.A. Identify sites in the Central Business and Service Commercial districts for mixed-use development that are close to services and facilitate walking, bicycling, and transit use.

LU3.E. Conduct a parking study in the Central Business District to evaluate parking needs and recommend future parking management strategies.

LU4.4. Ensure access to and from industrial areas that allows for safe and efficient circulation of goods and people.

LU4.C. Develop alternate automobile, pedestrian and bicycle routes to and from the Industrial District in order to facilitate access to the area and decrease the need to use State Route 29.

LU4.D. Implement appropriate traffic improvements to provide safe ingress and egress to the industrial areas from State Route 29.

LU6.C. Install community amenities, such as public restrooms, drinking fountains, benches, and trash and recycling containers in commercial districts. Ensure that community amenities are designed and installed to complement surrounding businesses and support the pedestrian-orientation of the street.

LU6.D. Require safe and accessible bicycle and pedestrian access for all newly-developed public facilities.

ES2.5. Encourage sustainable modes of travel and reduce the number and length of vehicle trips generated by visitors to the community. Expand lodging in the downtown area to encourage walking, biking and alternative transportation modes in order to reduce the need for automobile trips. (Also see the Circulation Element, Topic Area 4)

ES2.D. Enhance the pedestrian environment within the commercial area, support the development of bicycle trails connecting to a countywide system and encourage the use of small vans for group wine tours in order to decrease tourist-generated traffic congestion. (Also see the Circulation Element, Topic Area 2)

PF5.B. Develop a Safe Routes to School Program to improve walking and bicycling access to schools and after-school programs. The program can promote bicycling and walking to benefit students' health, decrease automobile traffic near schools, and support local efforts to improve the environment. Align this program with the City's bicycle and pedestrian trail systems.

PF5.3. Ensure that children have access to safe routes to school, especially by bicycle and walking.

CR1.1. Promote a connected street network within the City to provide better internal automobile, bicycle and pedestrian connections for residents. Where new streets are constructed, ensure they connect to dead-end roads and other streets to create a flexible network for residents.

CR1.2. Provide complete streets that balance the diverse needs of users of the public right-of-way, in accordance with the California Complete Streets Act of 2008.

CR1.3. Pursue appropriate funding for the development of a balanced transportation system.

CR1.4. Use performance measures that consider all road users to determine transportation impacts of new development.

CR1.5. Avoid mitigation measures that negatively impact the walking and bicycling environment and encourage driving, such as roadway and intersection widenings.

CR1.6. Continue to support NCTPA in the provision of convenient transit, including regional and local service. Support more frequent and reliable transit service between communities to reduce the number of people traveling to or from St. Helena to work by private vehicle. Promote and encourage use of the St. Helena Vine Shuttle.

CR1.7. Encourage use of the rail corridor to reduce traffic on State Route 29.

CR1.8. Reduce transportation-based GHG emissions from City-controlled sources by employing the following strategies:

- Complete the City's bicycle and pedestrian network, which will increase transportation choices in the City and reduce the demand for vehicle travel;
- Maximize the overall efficiency of the transportation system, including managing the transportation network through a citywide transportation system management program;
- Implement "smart growth" and sustainable planning principles as defined in the Land Use Element;
- Encourage jobs/housing match, as defined in the Housing Element; and
- Encourage/provide incentives for employee car pools.

CR1.9. Promote a walking and bicycling environment that is comfortable and convenient. Ensure that all St. Helena streets have no more than a single through-automobile lane in each direction, plus a single left-hand turning lane where appropriate, even if this requirement increases vehicle travel times. Allow exceptions if an extra lane would reduce the possibility of collisions.

CR1.10. Strive to maintain a ten minute or less travel time during peak periods along State Route 29, from the northern and southern City boundaries.[3]

CR1.11. Establish a multimodal transportation impact fee program to finance and implement project mitigations that help achieve GHG reduction goals. As part of the impact fee program, require new development to manage citywide travel demand and finance and construct all off-site circulation improvements necessary to reduce the severity of cumulative transportation impacts to all modes of travel.

[3] This is a draft target which assumes an average speed of 15 mph; it could be adjusted upward or downward if desired.

Implementing Actions

CR1.A. Use the street classification as defined in the Circulation Element as a basis for improving and managing streets. Improve vehicle, pedestrian and bicycle facilities on streets based on this system.

CR1.B. Construct the following new roads and connections as any potential new development occurs. 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
- *Oak Avenue* from Charter Oak Avenue to Grayson Avenue and limited access from Mitchell Drive to Charter Oak Avenue
- *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

CR1.C. Identify streets that should become "more complete," through consideration of transit priorities, sidewalk gap closures, new bikeways and vehicle traffic calming measures.

CR1.D. Use the performance measures defined in the Circulation Element as the basis for evaluating the impacts of development on the street system.

CR1.E. Support efforts to secure additional funding for regional transit service to St. Helena for residents, workers, and visitors as a viable alternative to travel by private automobile. Focus on improving the bus service for use by commuters.

CR1.F. Subject all rail corridor uses to use permit review; locate passenger facilities within zoning districts which minimize impacts to established and proposed land uses.

CR1.G. Study the potential for integrating Wine Train activities with car-free tourism strategies to provide an alternative for tourists to visit St. Helena without a car.

CR1.H. Measure total automobile trips generated by new developments on a per project basis, to reduce vehicle trips. Maintain a citywide trip generation analysis methodology that evaluates the effects of land use and built environment changes on travel choices and behavior.

CR1.I. Evaluate changes to vehicle travel times along State Route 29 on a per-development or per-project basis. Establish significance criteria for determining if an increase in travel time resulting from new development is significant.

CR1.J. Ensure that any new land use development provides a continuous path of travel for walking and bicycling from the development site to the center of downtown and other key destinations, as determined by the City. Determine appropriate bicycle and pedestrian routes based on the street classification system and the proposed bicycle and pedestrian network. If a path of travel is not continuous, require development to construct improvements and/or contribute to the transportation mitigation fee program.

CR1.K. Fund transportation improvements through a citywide, multimodal transportation mitigation fee program. The mitigation fee program will emphasize transportation improvements that reduce citywide automobile trips, including completing the bicycle and pedestrian network, implementing transportation demand and systems management strategies, and improving traffic signal coordination on State Route 29. Ensure that fees are proportional to a development's contribution to changes in net new automobile trips and change in travel time along State Route 29.

CR1.L. Work with Caltrans to ensure regional coordination and manage congestion on State Route 29.

Impact Analysis

This section describes the potential impacts on the transportation system resulting from buildout of the land uses described in the proposed General Plan Update in conjunction with the transportation improvements and policies described in the Circulation Element of the General Plan Update.

The Circulation Element identifies long-range transportation needs for moving people in and around St. Helena. It is comprehensive and far-reaching, addressing pedestrian, bicycle, motor vehicle, public transit and rail transportation. A range of public safety, environmental, and sustainability issues associated with transportation are addressed through the policies and standards identified in the Circulation Element.

For the roadway system, the results of the analysis include 2030 conditions with the planned roadway improvements assumed in place. For the transit, bicycle and pedestrian analysis, the analysis was limited to a review of the General Plan Update policy framework and implementation program and a comparison with the identified significance criteria. If a potential inconsistency was discovered, a significant impact was identified.

Less-than-Significant Impacts

Safety and Hazards Impacts

Implementation of the proposed General Plan Update would not increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses. None of the transportation system improvements

proposed in the General Plan Update would introduce new safety hazards at intersections or along roadway segments. Most – such as through median installation, enhanced crosswalks for pedestrians, and the installation of bicycle lanes or wide curb lanes to enhance circulation for bicyclists – would be designed to improve safety. Therefore, from a programmatic perspective, this impact would be less than significant.

There are no site-specific project plans at this time, so project layouts, driveway locations, land use types, or actual intensities are unknown. Without such detail, it is not possible, using available traffic analysis procedures, to estimate some types of impacts. Therefore, ongoing development proposals must be reviewed on a case-by-case basis as they arise and as details such as driveway locations or intersection modifications become known.

Pedestrian, Bicycle, and Transit Impacts

Implementation of the proposed General Plan Update would not conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities. The General Plan Update would place a strong emphasis on walking and bicycling as a means of replacing short automobile trips within St. Helena. For example, the General Plan Update would provide for mixed-use developments at the city's core, encourage bicycle and pedestrian access by placing complementary uses (housing, shopping, offices, transit facilities) within walking or bicycling distance of each other, and provide for a fine-grained system of local streets and access ways. The General Plan Update contains policies and implementing actions to encourage bicycle, pedestrian, and transit trips.

Pedestrian and Bicycle Facilities. The General Plan Update would encourage walking and bicycling within St. Helena by improving pedestrian and bicycling conditions, increasing pedestrian and bicycle safety, and creating a land use context supportive of non-motorized travel. The General Plan Update specifies policies and implementing actions to achieve this end (Policies CR2.1 through CR2.6, Implementing Actions CR2.A through CR2.K).

The General Plan Update would not disrupt existing pedestrian facilities or interfere with planned pedestrian facilities. The General Plan Update would not create conflicts or inconsistencies with adopted pedestrian system plans, guidelines, policies, or standards. Therefore, impacts on pedestrian circulation would be less than significant.

Similarly, the General Plan Update would not disrupt any existing or planned bicycle facilities, or create conflicts or inconsistencies with adopted bicycle system plans, guidelines, policies, or standards. For the purposes of this EIR, it is assumed that investment in bicycle facilities would be commensurate with the increase in bicycle trips resulting from implementation of the General Plan Update. The implementation of the multi-modal Transportation Fee Program and Transportation Demand Program proposed in the General Plan Update, as well as other local, regional, state and federal funding opportunities, are expected funding sources for expansion of the bicycle network within St. Helena. Therefore, impacts on bicycle circulation would be less than significant.

Public Transit. The proposed General Plan Update contains goals, policies, and actions to promote increased transit ridership in St. Helena. For the purposes of this EIR, it is assumed that investment in local and regional bus transit service would be commensurate with the increased ridership resulting from implementation of the General Plan Update. Because the General Plan Update will not result in a substantial change in the overall development density and land use patterns within the City, increases in transit demand are expected to be small. Therefore, impacts on transit would be less than significant.

Congestion Management Program Impacts

Buildout of the proposed General Plan Update would not conflict with an applicable congestion management program.

The General Plan includes multiple policies and implementing actions that strive to mitigate impacts on the local and regional transportation network. These actions seek to reduce single occupancy vehicle trips, improve circulation throughout St. Helena, and promote walking, bicycling and transit trips as viable transportation options. These policies and implementing actions would be consistent with the provisions of Napa Transportation Future Study recently published by the Napa County Transportation and Planning Agency (NCTPA), the countywide transportation planning body (see “Regulatory Framework” above).

Air Traffic Impacts

Implementation of the General Plan Update would not result in substantial safety risks due to changes in air traffic levels. Due to the nature and scope of the General Plan Update, its implementation would not have the potential to result in a change in air traffic patterns at any other airport in the area. Therefore, safety risks due to changes in air traffic patterns would be less than significant.

Impacts on Parking in Downtown St. Helena

Implementation of the General Plan Update could cause increased demand for motor vehicle parking within the Parking Impact Area in downtown St. Helena, but this impact would be less than significant.

The General Plan Update would provide for new development in St. Helena, including higher-density mixed-use development in the downtown area. This development would increase the demand for on-street parking within the Parking Impact Area, as defined in the 1993 St. Helena General Plan.

Parking conditions are not static, as parking supply and demand varies from day to day, from day to night, from month to month, and so on. Hence, the availability of parking spaces (or lack thereof) is not a permanent physical condition, but changes over time as people change their modes and patterns of travel.

Parking deficits are considered to be social effects, rather than impacts on the physical environment. The social inconvenience of parking deficits, such as having to hunt for scarce parking spaces, is not an environmental impact, but there may be secondary physical environmental impacts such as increased traffic congestion at intersections, related air quality impacts, safety impacts, or noise impacts caused by congestion.

Even with a shortage of off-street parking, measures often are implemented that result in more efficient use of the parking spaces provided. General Plan Update Policy CR5.1 and Implementing Actions CR3.A, CR3.B, and CR5.A would reduce the parking impact to a less-than- significant level by reducing demand by requiring travel demand management measures and creating a Parking Management Program to optimize parking.

Potentially Significant Impacts

The following impacts would be potentially significant and thus would warrant mitigation measures.

Impact TRANS-1: Increased motor vehicle traffic would result in unacceptable level of service (LOS) at intersections and study roadway segments. (Potentially Significant)

Buildout of the land uses and changes to the roadway network proposed by the General Plan Update would contribute traffic to intersections and roadway segments that are expected to operate at unacceptable levels of service. Significant impacts would result at one intersection and six study roadway segments, as follows (see Figure 4.C-6):

- Silverado Trail/Pope Street study intersection (PM peak hour intersection operations would remain at LOS F, peak hour delay would increase by more than five seconds, and the Caltrans peak hour signal warrant criterion would be met in the Year 2030).
- Main Street north of Pratt Avenue (conditions would remain at LOS F and the average daily volume would increase by more than five percent).
- Main Street north of Adams Street (conditions would remain at LOS F and the average daily volume would increase by more than five percent).
- Main Street north of Grayson Avenue/Mills Lane (conditions would remain at LOS F and the average daily volume would increase by more than five percent).
- Silverado Trail north of Howell Mountain Road (conditions would deteriorate from LOS C to LOS D).
- Oak Avenue south of Adams Street (conditions would deteriorate from LOS A to LOS F).
- Valley View north of Grayson Avenue (conditions would deteriorate from LOS A to LOS F).

The General Plan Update includes multiple policies and implementing actions (including Policies CR1.4, CR1.5, CR1.11, CR1.12, and CR6.2 and Implementing Actions CR1.H, CR1.I, and CR 1.K) that would seek to mitigate impacts on the transportation network through a series of efforts to reduce single occupancy vehicle trips, improve circulation throughout St. Helena, and promote walking, bicycling and transit trips as viable transportation options.

The General Plan Update contains multiple implementing actions that identify mechanisms for mitigating transportation impacts from new construction. Specifically, Implementing Actions CR1.H and CR1.K provide for the development of a methodology to measure automobile trips generated (ATG) by new developments, and the adoption of a citywide, multimodal Transportation Mitigation Fee program. These actions would be instrumental in mitigating impacts and managing congestion. While the City already has a traffic impact fee program in place, the updated multimodal fee program would seek to provide transportation improvements that offset the increase in vehicle trips resulting from new development. As such, the City should conduct a fee study to ascertain whether the fees designated under the existing fee program should be revised. The Transportation Mitigation Fee program would determine how many peak hour trips could be mitigated by the strategy of completing the City's bicycle and pedestrian network, employing a citywide transportation demand management program and implementing other automobile trip reduction measures. The goal would be to provide a program that reduces vehicle trips by the same number as would be generated by development allowed with buildout of the General Plan Update.

It should also be noted that the General Plan Update provides for use of alternative criteria for evaluating travel times and effects on travel behavior (e.g., Implementing Actions CR1.H and CR1.I). This approach is consistent with recent changes to the state CEQA Guidelines intended to encourage traffic analyses that encompass more holistic performance measures, beyond analysis of traditional level of service standards.

Mitigation Measure

Mitigation Measure TRANS-1: The following new implementing actions shall be included in the General Plan Update:

- *To reduce the effect of regional traffic on local streets, monitor traffic volumes and speeds on potential regional cut-through routes, including Oak Avenue and Valley View Street. Due to the forecast potential for traffic volumes to increase on Oak Avenue and Valley View Street, the City shall consider installing traffic calming or traffic diverting devices to discourage regional cut-through traffic with the goal of ensuring that, over the duration of the General Plan, traffic volumes on these streets do not increase by more than 50 percent above current (2010) levels.*

- *To ensure the multimodal Transportation Mitigation Fee (TMF) program serves as acceptable mitigation for the increase in traffic volumes resulting from buildout of the General Plan, the City shall prepare and adopt the TMF within 6 months of adoption of the General Plan Update. As part of this effort, the City shall conduct a fee study to ascertain whether the fees designated under the existing fee program should be revised.*

With adoption of the new policies and implementing actions contained in the General Plan Update, including adoption of a Transportation Mitigation Fee program as recommended in Mitigation Measure TRANS-1, this impact would be reduced to a less-than-significant level. (Less than Significant)

Impact TRANS-2: Buildout of the General Plan Update could increase the number of vehicle miles traveled (VMT) per service population.[4] **(Significant and Unavoidable)**

Transportation is a major contributor to greenhouse gas emissions. According to the U.S. Environmental Protection Agency (EPA), the transportation sector was responsible for nearly 28 percent of all greenhouse gas (GHG) emissions in the United States in 2006 (EPA, 2008). In California, transportation was responsible for about 38 percent of GHG

[4] Service population refers to the residential population plus employees.

emissions in 2004 (CARB, 2008). Transportation is the direct result of population and employment growth, which generates vehicle trips to move goods, provide public services, and connect people with work, school, shopping, and other activities.

While a number of factors influence daily trip-making, the following variables are some of the most influential when it comes to how individuals travel:

- Income
- Age
- Household size
- Workers per household
- Autos available
- Access to transit
- Comfort and convenience of travel modes

Growth in travel (especially vehicle travel) is due in large part to urban development patterns (i.e., the built environment). Over the last half century, homes have been built farther from workplaces, schools have been located farther from neighborhoods they serve, and other destinations, including shopping, have been isolated from where people live and work. A significant portion of new development since World War II has been planned and built in a pattern that is dependent on the use of cars as the primary mode of travel. As a larger share of the built environment has become automobile-dependent, vehicle trips and distances have increased, and walking and public transit use have declined. Population growth has been responsible for only a quarter of the increase in vehicle changing built environment, namely to longer trips and people driving alone (ULI, 2008).

A performance measure used to quantify the amount of travel is vehicle miles traveled (VMT). VMT is a useful performance measure, since the amount of travel and conditions under which the travel occurs directly relate to how much fuel vehicles burn.[5] One combusted gallon of gas from a vehicle is equal to approximately 24 pounds of carbon dioxide. Given today's average fuel mileage of vehicles (i.e., approximately 22 miles per gallon), one mile of travel equates to about one pound of carbon dioxide. As a result, increases in VMT directly cause increases in greenhouse gas emissions and air pollution.

The General Plan Update would enable new population and employment growth that could generate additional VMT, which would result in increased air pollutant and greenhouse gas emissions as well as additional energy consumption due to vehicle travel. The General Plan Update includes provisions that are

[5] Conditions influencing the amount of fuel consumed per VMT include the speed of travel; congestion stops and starts, length of trip, layover between trips, and the vehicle type and fuel economy.

expected to reduce the growth of VMT generated per service population (sum of residential population and employees) by encouraging a jobs/housing match emphasizing mixed-use development close to downtown, specifying mode split goals, and mitigating traffic impacts from new development. Applicable General Plan Update provisions include Policies CR1.1, CR1.2, CR1.5, CR1.6, CR1.12, and CR3.3 and Implementing Actions CR1.D, CR1.H, CR1.J, CR1.K, CR3.A, CR3.B, and CR6.C. (See further discussion under Impact TRANS-1 above.)

These provisions would not necessarily eliminate the growth in total VMT, however, because regional land use changes within Napa County would generate additional vehicle trips. Some vehicle trips generated outside of the city would have destinations within St. Helena. Though they are due to regional land use patterns and travel characteristics beyond the city's control, these trips would contribute to the city's total VMT per service population. As a result of these regional factors, the City's VMT per service population could increase in the future.

Mitigation Measure

Mitigation Measure TRANS-2: Policies and implementing actions contained in the General Plan Update would reduce this impact, but the impact could remain significant due to regional factors influencing VMT that are beyond the city's control. (Significant and Unavoidable)

Impact TRANS-3: Emergency access within St. Helena may be impacted by traffic congestion on State Route 29 and other local roads as addressed in Impact TRANS-1.

Traffic congestion has the potential to affect emergency response times. As discussed in Impact TRANS-1, buildout of the land uses and changes to the roadway network proposed by the General Plan Update would contribute traffic to intersections and roadway segments on SR 29 that are expected to operate at unacceptable levels of service. Increased traffic may cause a substantial decrease in travel speeds such that emergency vehicles would be significantly delayed.

As discussed in Impact TRANS-2, regional land use changes within Napa County would generate additional vehicle trips along SR 29 and potentially impact emergency vehicle access regardless of the adoption and implementation of the General Plan Update. Therefore, the cause of any future impacts to emergency access cannot be attributed solely to the General Plan Update.

However, through transportation demand management (TDM) measures included in the General Plan Update to discourage driving, coordinated with improvements to transit, bicycle, and pedestrian networks within the city, the General Plan Update seeks to reduce the amount of new automobile trips generated in the city. In addition, transportation improvements included in the General Plan Update, such as the proposed roadway extensions, have the potential to improve emergency access by providing alternate routes to SR 29. Specifically, the proposed extensions of Adams Street to Starr Avenue, Starr Avenue north to Adams Street, and Adams Street to Silverado Trail would create alternative routes for emergency vehicles and lessen potential impacts. Signal preemption at congested locations would further reduce the impact on emergency response times.

There are no site-specific project plans at this time. Thus, potential emergency access impacts due to project layouts, access, or land use types are unknown. Without such detail, it is not possible, using available traffic analysis procedures, to estimate specific impacts related to emergency access. Therefore, ongoing development proposals must be reviewed on a case-by-case basis as they arise. CEQA Guidelines Section 15145 states that if a particular impact or project is too speculative for evaluation, then analysis in the EIR is not required.

Development in accordance with the proposed General Plan Update would be required to meet all applicable local and state regulatory standards for adequate emergency access. Additionally, each project would be required to comply with applicable Municipal Code and Fire Code requirements regarding emergency access. These standard requirements would help to ensure that any potential impacts would be less than significant.

Mitigation Measure

Mitigation Measure TRANS-3: The following new implementing action shall be included in the Circulation Element of the General Plan Update:

- *The City shall consider the use of signal preemption for emergency response or evacuation in locations where Fire Department response times are not met.*

With adoption of the new policies and implementing actions contained in the General Plan Update (such as creating alternate travel routes to SR 29 and adopting policies to discourage single-occupant auto trips) and Mitigation Measure TRANS-1 and TRANS-3, this impact would be reduced to a less-than-significant level. (Less than Significant)

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4.D Air Quality

Introduction

This section summarizes information on the air quality environment in St. Helena and provides an evaluation of the air quality-related effects of the proposed General Plan Update. The analysis considers existing and projected air quality along major roadways, in addition to other air pollutant sources in the area. Mitigation measures are recommended that address General Plan Update policies and implementing actions.

Setting

The City of St. Helena is located in the northern portion of Napa County, part of the nine-county San Francisco Bay Air Basin. The climate is characterized by warm dry summers and mild moist winters. The summer average maximum temperatures are in the 80s to low 90s, while winter average maximum temperatures are in the high 50s and low 60s, with minimum temperatures in the high to mid 30s.

Air quality in and around St. Helena is very good due to the rural nature of the area and lack of upwind air pollution sources.

Due to the climate and terrain of the valley, the potential for air pollution could be high if there were sufficient sources of air contaminants nearby. The summer and fall prevailing winds can transport ozone precursors northward from the San Pablo Bay and Carquinez Strait area into the Napa Valley, which effectively traps and concentrates pollutants when stable conditions are present. In addition, pollutants may be recirculated by the local upslope and downslope flows created by the surrounding mountains, contributing to buildup of air pollution within the valley. In the late fall and winter, particulate matter from motor vehicles, agriculture, and wood burning in fireplaces and stoves can build up in the valley because of the high frequency of light winds and stable atmospheric conditions.

Since 1972, the Bay Area Air Quality District (BAAQMD) has operated a multi-pollutant monitoring site on Jefferson Street in Napa, which allows the analysis of trends in air quality. Air quality in and around St. Helena is very good due to the rural nature of the area and lack of upwind air pollution sources. (See further discussion under “Regulatory Framework” below.)

Besides various small permitted sources, there are no substantial sources of air pollution or toxic air contaminants in St. Helena. The primary source of air pollution within the City of St, Helena is traffic, particularly State Route 29 traffic. BAAQMD lists stationary sources in St. Helena that include fueling stations, a dry cleaner, two auto body shops with spray painting operations, and some standby emergency and diesel generators. A review of

the permit data for these sources shows that they would have very localized impacts (BAAQMD, 2010c).

Regulatory Framework

Federal and State Air Quality Standards

In addition to being subject to federal requirements, air quality in California is governed by more stringent regulations under the California Clean Air Act.

The Federal Clean Air Act governs air quality in the United States. In addition to being subject to federal requirements, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CAA). At the federal level, the United States Environmental Protection Agency (USEPA) administers the CAA.

Under the CAA, the USEPA has established concentration-based national ambient air quality standards (NAAQS) for criteria air pollutants (see Table 4.D-1) and has identified hazardous air pollutants, for which emissions standards are developed. The NAAQS are periodically reviewed as new health information is made available.

The California Clean Air Act is administered by the California Air Resources Board (CARB) at the state level and by the Air Quality Management Districts at the regional and local levels. The Bay Area Air Quality Management District (BAAQMD) regulates air quality at the regional level, which includes the nine-county Bay Area.

California ambient air quality standards (CAAQS) are established by CARB for criteria air pollutants and also address some industry-specific pollutants that are not found an issue in the Napa Valley (see Table 4.D-1). The CAAQS are established based on health effects and are also periodically reviewed and updated if necessary as new information is made available. CARB also identifies toxic air contaminants, which are similar to hazardous air pollutants identified by the USEPA.

Air Pollutants and Contaminants of Concern in Bay Area

State and federal ambient air quality standards cover a wide variety of pollutants. However, only a few of these pollutants are problems in the Bay Area, either due to the strength of the emission or the climate of the region. Problem air pollutants in St. Helena and the Bay Area include ozone, respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$) and toxic air contaminants (TACs). The Bay Area is currently classified as a federal and state nonattainment area for ozone and $PM_{2.5}$ and a state nonattainment area for PM_{10}.

TABLE 4.D-1
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	National Standards[a]	
			Primary[b]	Secondary[c]
Ozone	8-hour	0.070 ppm (154 µg/m^3)	0.075 ppm (176 µg/m^3)	Same as primary
	1-hour	0.09 ppm (180 µg/m^3)	—	Same as primary
Carbon monoxide	8-hour	9.0 ppm (10 µg/m^3)	9 ppm (10 µg/m^3)	—
	1-hour	20 ppm (23 µg/m^3)	35 ppm (40 µg/m^3)	—
Nitrogen dioxide	Annual	—	0.053 ppm (100 µg/m^3)	Same as primary
	1-hour	0.18 ppm (339 µg/m^3)	0.10 ppm (189 µg/m^3)	—
Sulfur dioxide	Annual	—	0.03 ppm (80 µg/m^3)	—
	24-hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	—
	3-hour	—	—	0.5 ppm (1,300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	—	—
PM_{10}	Annual	20 µg/m^3	—	Same as primary
	24-hour	50 µg/m^3	150 µg/m^3	Same as primary
$PM_{2.5}$	Annual	12 µg/m^3	15 µg/m^3	—
	24-hour	—	35 µg/m^3	—
Lead	Calendar quarter	—	1.5 µg/m^3	Same as primary
	30-day average	1.5 µg/m^3	—	—

ppm= parts per million
µg/m3 = micrograms per cubic meter

[a] Standards, other than for ozone and those based on annual averages, are not to be exceeded more than once a year. The ozone standard is attained when the expected number of days per calendar year with maximum hourly average concentrations above the standard is equal to or less than one. Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

[b] Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than 3 years after that state's implementation plan is approved by the United States Environmental Protection Agency.

[c] Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

SOURCE: Illingworth & Rodin, 2009

Ozone

Emissions from motor vehicle use may contribute to elevated ozone levels in the Napa Valley and other parts of the Bay Area.

Ground level ozone, often referred to as smog, is not emitted directly, but is formed in the atmosphere through complex chemical reactions. Ozone is not a pollutant that adversely affects St. Helena, but emissions from motor vehicle use in the area may contribute to elevated ozone levels in the Napa Valley and high ozone levels in other parts of the Bay Area. Motor vehicles are the largest source of ozone precursor emissions (i.e., nitrogen oxides and reactive organic gases) in the Bay Area.

The Bay Area is currently classified as a federal and state nonattainment area for ozone. The most recent three-year set of monitoring data (2006-2008) indicates that ozone levels in Napa have exceeded state standards on 0 to 2 days and exceeded federal standards on 2 days in 2008.[1] During this same period, ozone levels basin-wide exceeded state standards on 9 to 22 days and federal standards on 1 to 12 days.

Exposure to levels of ozone above current ambient air quality standards can lead to human health effects, such as lung inflammation and tissue damage and impaired lung functioning. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. The greatest risk for harmful health effects is among outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during periods where ozone levels exceed air quality standards. Elevated ozone levels can reduce crop and timber yields, as well as damage native plants.

Particulate Matter

Although particulates are found naturally in the air, most particulate matter is emitted by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas.

Particulate matter is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size, and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles ten microns or less in diameter are defined as "respirable particulate matter" or "PM_{10}." Very small particles that are 2.5 microns or less in diameter are defined as "fine particulate matter" or "$PM_{2.5.}$" These particulates can contribute significantly to regional haze and reduction of visibility. Inhalable particulates come from smoke, dust, aerosols, and metallic oxides. Although particulates are found naturally in the air, most particulate matter found in the area is emitted either directly or indirectly by motor vehicles, industry, construction, agricultural activities, and wind erosion of disturbed areas. Most $PM_{2.5}$ is comprised of combustion products such as smoke or formed in the atmosphere from regional emissions of nitrogen oxides. There are many sources of PM_{10} emissions, including combustion, industrial processes, grading and construction, and motor vehicles. The greatest quantity of PM_{10} emissions associated with motor vehicle uses is generated by re-suspended road dust. Reductions in motor vehicle miles traveled, rather than changes to motor vehicle technology, are necessary to reduce PM_{10} emissions. Wood burning in fireplaces and stoves is another significant source of particulate matter, primarily $PM_{2.5}$.

[1] Based on monitoring data published by BAAQMD – Bay Area Air Pollution Summaries for 2006, 2007, and 2008 available at http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx

The Napa monitoring station only measures PM_{10} levels and not $PM_{2.5}$ levels. Over the past 3 years (2006-2008), the Napa station has measured only one day of levels above the state standard. The Napa station has slightly exceeded the state standard for annual average levels in each of the 3 years. The federal PM_{10} standards have not been exceeded. Although $PM_{2.5}$ is not measured in Napa, it is measured in the more urbanized area of Santa Rosa to the west of St. Helena, where $PM_{2.5}$ levels during the same 3-year period have only exceeded the federal standard on one day. The state $PM_{2.5}$ standard is based on an annual average, which the Santa Rosa station does not exceed.

Exposure to outdoor PM_{10} and $PM_{2.5}$ levels exceeding current ambient air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. Exposure to particulate matter is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing visibility, the acidic portion of PM (e.g., nitrates and sulfates) can harm crops, forests, and aquatic and other ecosystems.

In 2002, CARB adopted their most recent ambient air quality standards for PM_{10} and $PM_{2.5}$, resulting from an extensive review of the health-based scientific literature. EPA adopted stricter standards for $PM_{2.5}$ in September 2006.

Other Criteria Air Pollutants

Measured levels of other criteria air pollutants such as nitrogen dioxide and carbon monoxide are well below federal and state standards in Napa. Some pollutants, such as lead and sulfur dioxide, are not measured in or near Napa because there is no evidence that they would be at levels that would warrant concern (i.e., lack of emission sources). Carbon monoxide emissions from motor vehicles and stationary sources have been reduced greatly over the last 15 to 20 years, such that the entire Bay Area region has been brought into attainment of the federal and state standards. Current levels in Napa are about one-fourth of the most stringent federal and state standards. Carbon monoxide concentrations are expected to decrease further in the future as newer and cleaner vehicles replace older vehicles on the roadway.

Toxic Air Contaminants (TACs)

Toxic air contaminants (TACs) are another group of pollutants of concern in the Bay Area. Common sources of TACs include industrial processes, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Diesel particulate matter from exhaust has been identified as a TAC. Mobile sources, such as trucks, buses, and construction equipment

are by far the largest source of diesel emissions. Diesel particulate matter is the most prevalent TAC in the state, due to the toxicity of diesel particulate matter and the common sources that include trucks and construction equipment. There are very few sources of TAC emissions in Napa County, however, due to the general land uses of the area.

Sensitive Receptors

The State of California has identified children, the elderly, athletes, and people with cardiovascular and chronic respiratory diseases as "sensitive receptors" for air pollution.

Some groups of people are more affected by air pollution than others. The State of California has identified the following people who are most likely to be affected by air pollution: children under 14, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as "sensitive receptors." Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, day care facilities, elder care facilities, elementary schools, and parks.

Attainment Status

Areas that do not violate ambient air quality standards are considered to be in attainment for each regulated air pollutant. Violations of ambient air quality standards are based on air pollutant monitoring data and are judged for each air pollutant. The Bay Area as a whole does not meet state or federal ambient air quality standards for ground level ozone and state standards for PM_{10} and $PM_{2.5}$. Under the CAA, the BAAQMD is currently classified as marginally nonattainment for the 1997 8-hour ozone standard.

In 2008, the USEPA adopted a more stringent 8-hour ozone NAAQS then the 1997 standard. In 2009, the USEPA, under a new administration, began the process of new rulemaking action to reconsider the 2008 ozone NAAQS upon reconsideration of the scientific advisory committee recommendations used to establish the 2008 NAAQS. In January 2010, the USEPA announced that, upon review of scientific data, it was proposing to further lower the ozone NAAQS. The USEPA was poised to promulgate nonattainment designations under the 2008 ozone NAAQS in December 2009, which would have included the Bay Area. These nonattainment designations would have become effective by March 12, 2010. However, on January 19, 2010, the USEPA announced delay of the final designations for the 2008 NAAQS until March 12, 2011, to allow adequate time for reconsideration and possible revision of the 2008 NAAQS. The range of standards under consideration would be a significant change, which would undoubtedly result in a nonattainment designation for the Bay Area and much of California. Final standards are expected to be issued by August 31, 2010. Designations of nonattainment areas will become effective one year later in 2011.

The USEPA also recently designated the Bay Area Air Basin as nonattainment for the 2006 24-hour $PM_{2.5}$ standard, as recent monitoring data indicate levels slightly above the standard (from measurements conducted in the cities of San Jose and Vallejo). Most $PM_{2.5}$ nonattainment areas would have until 2015 to attain the standards with some extensions to 2020 if necessary.[2]

The Bay Area has met the carbon monoxide standards for over a decade and is classified attainment maintenance by the USEPA. The USEPA grades the region unclassified for all other air pollutants, which include PM_{10}.

At the state level, the region is considered serious nonattainment for ground level ozone and nonattainment for PM_{10} and $PM_{2.5}$. The region is required to adopt plans on a triennial basis that show progress toward meeting the state ozone standard. (There are no planning requirements for PM_{10} or $PM_{2.5}$ at the state level.) The area is considered attainment or unclassified under state standards for all other pollutants.

Air Quality Plans

The Bay Area Air Quality Management District develops air quality plans and updates them approximately every three years.

The BAAQMD develops air quality plans addressing the California Clean Air Act and updates them approximately every three years with the goal of meeting the CAAQS. In early 2006, BAAQMD adopted the Bay Area 2005 Ozone Strategy, which includes a comprehensive strategy to reduce ozone precursor emissions from stationary, area, and mobile sources. This plan implements transportation control measures to address the 1-hour NAAQS for O3 and achieve region-wide reductions in ozone precursor pollutants. The clean air planning efforts for ozone will also reduce PM_{10} and $PM_{2.5}$, as a substantial amount of particulate matter comes from combustion emissions such as vehicle exhaust.

The Bay Area 2005 Ozone Strategy proposes expanded implementation of Transportation Control Measures (TCMs) and programs such as Spare the Air, a public outreach program designed to educate the public about air pollution in the Bay Area and to promote individual behavior changes that improve air quality. Some of these measures or programs rely on local governments for implementation.

BAAQMD is currently in the process of adopting the Bay Area 2010 Clean Air Plan that will:

- Update the current Bay Area 2005 Ozone Strategy in accordance with the requirements of the California Clean Air Act to implement “all feasible measures” to reduce ozone;

[2] Not attaining the standards by the designated date would mean possible sanctions such as withholding of federal transportation dollars.

- Provide a control strategy to reduce ozone, particulate matter (PM), TACs, and greenhouse gases in a single, integrated plan;
- Review progress in improving air quality in recent years; and
- Establish emission control measures to be adopted or implemented in the 2010-2012 time frame.

As of July 2010, there is no anticipated date of adoption for this plan.

The region meets the federal and state standards for carbon monoxide. Regions previously classified as nonattainment under the NAAQS, must demonstrate that they can maintain the standards. A Carbon Monoxide Maintenance Plan was also approved in 1998 by the USEPA, which demonstrated how NAAQS for the carbon monoxide standard would be maintained.

BAAQMD adopts and enforces rules to reduce particulate matter emissions and develops public outreach programs (e.g., Spare the Air program) to educate the public to reduce PM_{10} and $PM_{2.5}$ emissions. As part of BAAQMD's plan to reduce PM_{10} and $PM_{2.5}$ concentrations, BAAQMD adopted Regulation 6, Rule 3: Wood-Burning Devices, which is intended to reduce emissions that come from residential wood burning. This new rule restricts wood burning when air quality is unhealthy and a wintertime Spare the Air Advisory is issued. The rule also requires that only cleaner burning EPA-certified stoves and inserts be installed in new construction or remodels, including natural gas fireplaces. The rule applies to new woodstove and fireplace inserts. The regulation also places limits on excessive smoke, prohibits the burning of garbage and other harmful materials, and also requires the labeling of firewood and solid fuels sold within the Bay Area.

CARB Air Quality and Land Use Handbook

The California Air Resources Board (CARB) Air Quality and Land Use Handbook seeks to highlight the potential health impacts associated with close proximity to common air pollution sources and to have those issues considered in the planning process.

In 2005, CARB released the final version of the Air Quality and Land Use Handbook, which is intended to encourage local land use agencies to consider the risks from air pollution before making decisions that approve the siting of new sensitive receptors, such as homes or day care centers, near sources of air pollution (CARB, 2005). Unlike industrial or stationary sources of air pollution, siting of new sensitive receptors does not require air quality permits, but could result in adverse air quality issues. The primary purpose of the handbook is to highlight the potential health impacts associated with close proximity to common air pollution sources and to have those issues considered in the planning process. CARB makes recommendations regarding the siting distance of new sensitive land uses near freeways, truck distribution centers, dry cleaners, gasoline dispensing stations, and other air pollution sources. CARB acknowledges that land use agencies have to balance other siting considerations, such as housing and transportation needs, economic

development priorities, and other quality-of-life issues. In addition, siting some sensitive receptors, such as residences, near transportation facilities, employment centers, and services would reduce overall emissions from a community. These "advisory" siting recommendations (or buffer distances), summarized in Table 4.D-2, are based primarily on modeling information and may not be entirely reflective of conditions in the plan area. The siting of new sensitive land uses within the identified buffer distances may be possible, but only after site-specific studies are conducted to identify the actual health risks.

TABLE 4.D-2
CARB RECOMMENDED SETBACK DISTANCE FOR SENSITIVE USES FROM COMMON SOURCES OF TOXIC AIR CONTAMINANTS

Source Type	Recommended Buffer Distance for Sensitive Uses
Freeways and busy arterial roadways	500 feet
Distribution centers with 100 or more daily truck trips or 40 daily truck trips that use refrigeration units	1,000 feet
Dry cleaners (onsite dry cleaning)	300 feet for any dry cleaning operation. At least 500 feet for operations with 2 or more machines
Large gasoline stations (i.e. over 3.6 million gallons pumped per year)	50 feet for typical gas stations and up to 300 feet for large gas stations

SOURCE: CARB, 2005

BAAQMD CEQA Air Quality Guidelines

On June 2, 2010, the BAAQMD updated the BAAQMD CEQA Guidelines in support of the upcoming new Clean Air Plan. The CEQA Guidelines update revised significance thresholds, assessment methodologies, and mitigation strategies for criteria pollutants, air toxics, odors, and greenhouse gas emissions (BAAQMD, 2010a, 2010b). These standards have been used in preparing this EIR.

Impacts and Mitigation Measures

Significance Criteria

Significance determinations are from the BAAQMD guidelines for evaluating air quality impacts from plans. The standards established by these guidelines address the California Environmental Quality Act (CEQA) thresholds identified in Appendix G of the state CEQA Guidelines.

Plan Consistency with Clean Air Plan

The most recently adopted Clean Air Plan (CAP) is the 1991 Clean Air Plan, as updated by the 2005 Bay Area Ozone Strategy; standards provided by these documents are used in this EIR to evaluate the potential air quality impacts of the General Plan Update. In assessing impacts of plans on regional air quality, proposed plans (e.g., general plan updates) would have a significant impact if:

- They would be inconsistent with current air quality plan control measures; and
- The increase in projected vehicle miles traveled (VMT) or vehicle trips (either measure may be used) would be greater than the plan's projected population increase.

Local Carbon Monoxide Concentrations

A plan would have a significant impact if it would cause a violation of any air quality standard or contribute substantially to an existing or projected air quality violation. For general plans, a significant impact on local air quality is defined as increased carbon monoxide concentrations at the closest sensitive receptors that would cause a violation of the most stringent ambient state standard for carbon monoxide (20 parts per million [ppm] for the one-hour averaging period, or 9.0 ppm for the eight-hour averaging period).

Community Risk and Hazards

The proposed General Plan Update could cause significant community risk and hazard impacts if it does not:

- Create overlay zones around sources of TACs, PM, and hazards including special overlay zones of at least 500 feet (or Air District-approved modeled distance) on each side of all freeways and high-volume roadways; and
- Identify goals, policies, and objectives to minimize potential impacts from these sources (including adopted risk reduction plan areas).

Odors

Significant odor impacts would occur if odor sources could result in complaints and if the General Plan Update does not identify goals, policies, and objectives to minimize potentially adverse impacts.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address air quality as it affects the community.

Air Quality Policies

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

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.

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.

PS1.4. Promote balanced land use development that minimizes cumulative air quality impacts from proposed developments.

Policies and Implementing Actions that Promote Walking and Bicycling[3]

LU2.8. Promote safe, walkable and bikeable residential neighborhoods and vibrant, livable streets.

LU2.9. Promote walkable and accessible neighborhoods through mixed-use development.

LU3.2. Enhance the pedestrian-oriented character of commercial areas and provide for convenient pedestrian and bicycle connections to encourage walking and reduce vehicle trips within the commercial area.

LU3.3. Support the redevelopment of auto-oriented commercial areas into pedestrian-friendly commercial uses.

LU3.7. Provide sufficient auto and bicycle parking in order to serve local businesses in the commercial districts. Ensure that all parking areas are well-designed, and that auto parking spaces are hidden from pedestrian view, whenever possible.

LU3.9. In Mixed-Use, Service Commercial and Central Business districts encourage residential and office uses in upper-story locations or locations along the periphery of the retail district. This will facilitate active and pedestrian-oriented commercial areas.

LU3.10. Require office development in Mixed-Use, Service Commercial and Central Business districts to complement the pedestrian orientation of surrounding development.

[3] These policies are included because they would have a direct connection to improving local air quality and reducing vehicular emissions.

LU3.A. Identify sites in the Central Business and Service Commercial districts for mixed-use development that are close to services and facilitate walking, bicycling, and transit use.

LU4.C. Develop alternate automobile, pedestrian and bicycle routes to and from the Industrial District in order to facilitate access to the area and decrease the need to use State Route 29.

LU6.C. Install community amenities, such as public restrooms, drinking fountains, benches, and trash and recycling containers in commercial districts. Ensure that community amenities are designed and installed to complement surrounding businesses and support the pedestrian-orientation of the street.

LU6.D. Require safe and accessible bicycle and pedestrian access for all newly-developed public facilities.

ES2.5. Encourage sustainable modes of travel and reduce the number and length of vehicle trips generated by visitors to the community. Expand lodging in the downtown area to encourage walking, biking and alternative transportation modes in order to reduce the need for automobile trips. (Also see the Circulation Element, Topic Area 4)

ES2.D. Enhance the pedestrian environment within the commercial area, support the development of bicycle trails connecting to a countywide system and encourage the use of small vans for group wine tours in order to decrease tourist-generated traffic congestion. (Also see the Circulation Element, Topic Area 2)

PF5.B. Develop a Safe Routes to School Program to improve walking and bicycling access to schools and after-school programs. The program can promote bicycling and walking to benefit students' health, decrease automobile traffic near schools, and support local efforts to improve the environment. Align this program with the City's bicycle and pedestrian trail systems.

PF5.3. Ensure that children have access to safe routes to school, especially by bicycle and walking.

CR1.1. Promote a connected street network within the City to provide better internal automobile, bicycle and pedestrian connections for residents. Where new streets are constructed, ensure they connect to dead-end roads and other streets to create a flexible network for residents.

CR1.5. Avoid mitigation measures that negatively impact the walking and bicycling environment and encourage driving, such as roadway and intersection widenings.

CR1.9. Promote a walking and bicycling environment that is comfortable and convenient. Ensure that all St. Helena streets have no more than a single through-automobile lane in each direction, plus a single left-hand turning lane where appropriate, even if this requirement increases vehicle

travel times. Allow exceptions if an extra lane would reduce the possibility of collisions.

CR2.1. Create a comprehensive bicycle and pedestrian network that enhances neighborhood connectivity. Develop the system to expand and improve the pedestrian and bikeway system.

CR2.2. Promote walking and bicycling as safe and convenient modes of transportation.

CR2.3. Ensure secure, accessible and convenient bicycle parking facilities throughout St. Helena, including downtown, commercial areas, schools, and parks.

CR2.4. Preserve and enhance pedestrian connectivity and safety throughout St. Helena.

CR2.5. Improve the pedestrian experience through streetscape enhancements, focusing improvements where there is the greatest need, and by orienting development toward the street.

CR2.6. Encourage walking and bicycling trips to St. Helena schools.

Policies that Promote Transit or Other Travel Modes

CR1.6. Continue to support NCTPA in the provision of convenient transit, including regional and local service. Support more frequent and reliable transit service between communities to reduce the number of people traveling to or from St. Helena to work by private vehicle. Promote and encourage use of the St. Helena Vine Shuttle.

CR1.7. Encourage use of the rail corridor to reduce traffic on State Route 29.

CR1.8. Reduce transportation-based GHG emissions from City-controlled sources by employing the following strategies:

- Complete the City's bicycle and pedestrian network, which will increase transportation choices in the City and reduce the demand for vehicle travel;
- Maximize the overall efficiency of the transportation system, including managing the transportation network through a citywide transportation system management program;
- Implement "smart growth" and sustainable planning principles as defined in the Land Use Element;
- Encourage jobs/housing match, as defined in the Housing Element; and
- Encourage/provide incentives for employee car pools.

CR3.1. Provide incentives and encourage existing major employers to develop and implement transportation demand, management (TDM)

programs to increase the number of people who bike and walk to work and reduce peak-period trip generation. Strategies include the following:

- Transit subsidies or reimbursement to residents and employees (often referred to as "commuter check" or "EcoPass");
- Car-share, car-pooling and neighborhood electric vehicle programs, to reduce the need to have a car or second car;
- Integrated bicycle parking and support facilities, primarily to reduce trips within the City;
- Modified parking codes to manage the supply of parking that generates frequent turn-over and serves multiple users; and
- Marketing and information programs to encourage alternative transportation modes.

CR3.2. Support the implementation of NCTPA goals to reduce/restrain growth of automobile vehicle miles traveled (VMT).

CR3.3. Shift travel from single-occupancy vehicles to other modes so that, by 2030, 45 percent of work trips by St. Helena residents and workers are by carpool, transit, walking or bicycling (see Table 5.5 at the end of this section for 2030 commute mode split targets).

CR3.4. Work with the wine and hospitality industries to manage congestion and create and promote car-free tourism services. (Also see the Environmental Sustainability Element, Topic Area 2)

CR3.5. Work with the school district to encourage the use of carpooling and the bus system to reduce drive-alone trips to St. Helena schools.

CR3.6. Support development of the bikeway and pedestrian networks to provide a convenient opportunity for at least 20 percent of commuters to get to work by walking or bicycling.

CR3.7. Support compact, mixed-use development as outlined in the Land Use and Housing elements.

CR4.2. Ensure safety on residential neighborhood streets to promote walking and bicycling and preserve neighborhood livability.

CR4.5. Improve traffic safety and encourage walking and bicycling trips to St. Helena schools through a Safe Routes to School program.

Policies that Promote Traffic Calming

CR4.3. Continue efforts to calm traffic, and minimize traffic volumes and speeds in residential areas.

Also, see Policies LU3.2, LU 3.3, CR1.1, CR1.5, CR1.9, CR2.5, CR4.2, and CR4.5.

Other Policies and Implementing Actions Designed to Improve Air Quality

CR1.11. Establish a multimodal transportation impact fee program to finance and implement project mitigations that help achieve GHG reduction goals. As part of the impact fee program, require new development to manage citywide travel demand and finance and construct all off-site circulation improvements necessary to reduce the severity of cumulative transportation impacts to all modes of travel.

CD1.3. Require construction and development practices that reduce energy demand through conservation and efficiency, such as the use of green building materials, site design to maximize passive heating and cooling and energy generation. (Also see the Climate Change Element, Topic Area 2)

CD1.B. Adopt a Green Building and Landscaping Ordinance that establishes green building and landscaping site design standards customized to meet the unique climatic context of the community. Partner with third party agencies, such as PG&E, to encourage the inclusion of energy-efficient systems in remodels and retrofits of existing buildings and residences. Offer incentives for improving energy-efficiency in existing buildings. Landscaping standards should limit impervious paving and identify standards and incentives that encourage the use of locally-propagated native, low-water, drought-tolerant planting and integrated pest management practices.

CC1.1. Promote the City's commitment to urban-centered growth, adopting zoning and design standards to develop mixed-use, "walkable" and "bikeable" neighborhoods. [Draft Napa Countywide Community Climate Action Plan Framework, Action T1]

CC1.2. Promote land use decisions that support the County's goals to maintain and improve the County's overall balance of jobs and housing, by locating jobs and housing in proximity to each other and improving the match between wages and housing cost. [Draft Napa Countywide Community Climate Action Plan Framework, Action T2]

CC1.3. Support transportation planning efforts to optimize fuel efficiency. [Draft Napa Countywide Community Climate Action Plan Framework, Action T7]

CC2.1. Encourage measures to reduce energy demand through conservation and efficiency. [Draft Napa Countywide Community Climate Action Plan Framework]

CC2.2. Support local efforts to improve the energy supply by switching from fossil fuels to renewables. [Draft Napa Countywide Community Climate Action Plan Framework]

Impact Analysis

Less-than-Significant Impacts

Consistency with Clean Air Plan

Increase in Vehicle Miles Traveled or Vehicle Trips. The projected growth in vehicle traffic allowed by the General Plan Update would not exceed the projected growth in population; thus, the General Plan Update would not create an inconsistency with the regional Clean Air Plan projections.

The Bay Area as a whole does not meet ambient air quality standards for ozone, $PM_{10,}$ and $PM_{2.5}$. Planning efforts are necessary to reduce these air pollutant levels. These efforts address all the various sources of air pollutant emissions, including land use development. A key element in air quality planning is to make reasonably accurate projections of future human activities that are related to air pollutant emissions. When the Bay Area 2005 Ozone Strategy was developed for the Bay Area**,** it used the most recent projections developed by the Association of Bay Area Governments (ABAG) and vehicle activity projected by the Metropolitan Transportation Commission (MTC). These projections are based on the most recent projections using land use designators developed by cities and counties through local and regional planning processes.

Future development in St. Helena would affect emissions of ozone precursor pollutants and particulate matter ($PM_{2.5}$ and PM_{10}), both of which affect regional air quality. Future changes in development patterns that affect regional air quality are accounted for in the Bay Area 2005 Ozone Strategy. However, increased development could lead to greater vehicle use than assumed in the Clean Air Plan. Because of the complexities in comparing projections for a single city to those of a regional Clean Air Plan, BAAQMD has developed thresholds that are based on population and vehicle use projections for a plan area.

Development allowed by the General Plan Update would cause the population of St. Helena to grow. Under the Likely Buildout Scenario, a population increase of 921 persons and an additional 379 new housing units are anticipated. Approximately 43 percent of the increase would consist of “Pipeline Projects,” i.e., projects currently undergoing review by the City or tentatively proposed for the immediate future. Under this scenario, St. Helena’s population would increase by 15 percent to 7,021. Total commercial square footage would increase by about 277,104 square feet, adding 560 new jobs, a 9-percent increase over existing conditions.

Traffic forecasts take into account the changes to population and commercial (or non-residential) development. The traffic modeling indicates that St. Helena currently generates about 39,570 daily trips, of which about 18 percent are "internal." Internal trips are relatively short, since they begin and end in St. Helena. Projections for the General Plan Update indicate that the number of daily trips generated would increase by 11 percent to 44,458. The number of internal trips is expected to increase at a greater rate than external trips, which would indicate a slower rate of growth in vehicle miles traveled than vehicle trips.[4] The relatively small growth rate in vehicle trips compared to population is reflective of the existing setting and General Plan Update policies that are intended to reduce vehicle trips.

Traffic modeling conducted for the General Plan Update indicates a lower growth rate of vehicle trips and assumed vehicle miles traveled than population growth. The impact in relation to consistency with the Clean Air Plan would therefore be less than significant.

Consistency with Air Quality Plan Control Measures. The General Plan Update includes policies and implementing actions that are consistent with control measures contained in the Bay Area 2005 Ozone Strategy, Thus, there would not be an inconsistency with the regional Clean Air Plan projections.

The Bay Area 2005 Ozone Strategy includes transportation control measures (TCMs) that rely on local government or agency implementation. Implementation of these TCMs for new development is critical, since they are most effective when included in the design of new communities or development. Table 4.D-3 lists the applicable TCMs and the relevant General Plan Update provisions that are consistent with those measures.

The General Plan Update would be consistent with current air quality plan control measures since it includes policies and implementing actions that would implement the TCMs. The plan consistency impact would therefore be less than significant.

Increases in Local Air Pollutant Levels

Changes in traffic caused by the buildout under the General Plan Update could increase local air pollutant levels. Carbon monoxide emissions from traffic would be the pollutant of greatest concern at the local level. Since 1998, carbon monoxide concentrations in the Bay Area region have remained below state and federal standards. Congested intersections with a large volume of traffic have the greatest potential to cause high, localized concentrations of carbon monoxide.

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4 This increased rate of internal trips is due to the emphasis of the General Plan Update on mixed uses within the city limits.

TABLE 4.D-3
APPLICABLE TRANSPORTATION CONTROL MEASURES AND RELEVANT GENERAL PLAN UPDATE POLICIES AND IMPLEMENTING ACTIONS

Transportation Control Measures (TCMs)	Relevant General Plan Update Policies and Implementing Actions
TCM #1 - Support Voluntary Employer-Based Trip Reduction Programs	Policy CR3.1 would provide incentives and encourage existing major employers to develop and implement transportation demand management (TDM) programs to increase the number of people who take transit, bike, and/or walk to work. Policy CR3.3 aims to substantially reduce work trips made by St. Helena workers and residents. Policies LU3.10, CR1.6, CR1.7, and CR1.8 and Implementing Actions LU3.A and LU6.C would support development that would enable effective employer-based trip reductions.
TCM #9 - Improve Bicycle Access and Facilities	The General Plan Update includes numerous policies and implementing actions that would encourage bicycling and improve bicycle access and facilities: LU2.8, LU3.7, LU4.C, LU6.D, ES2.D, PF5.B, PF5.3, CR1.5, CR1.9, CR2.1, CR2.2, CR2.3, CR2.6, CR3.1, CR3.6,CR4.2, and CR4.5.
TCM #10 - Youth Transportation	General Plan Update policies and implementing actions supporting youth transportation include PF5.B, PF5.3,CR2.6, CR3.5, and CR4.5. These are in addition to the numerous policies supporting TCM #9 and TC#19 that support more walking and bicycling.
TCM #12 - Arterial Management Measures	St. Helena has a relatively small network of arterial roadways. Policies and implementing actions that directly and indirectly support management of arterial roadways include LU3.2, LU3.3, LU4.C, CR1.1, and CR3.4.
TCM #15 - Local Clean Air Policies and Programs	The Climate Change Element of the General Plan Update addresses the primary programs that support the City's clean air programs and policies. The City has developed plans to reduce City-controlled greenhouse gas emissions by 20 percent and is working with the other five jurisdictions in Napa County to develop a climate action plan. These actions would support TCM#15 in supporting clean air programs.
TCM #19 - Improve Pedestrian Access and Facilities	The General Plan Update includes numerous policies and implementing actions that would improve and expand pedestrian facilities: LU2.8, LU2.9, LU3.2, LU3.3, LU3.9, LU3.10, LU3.A, LU4.C, LU6.C, LU6.D, ES2.D, PF5.B, PF5.3, CR1.1, CR1.9, CR2.1, CR2.2, CR2.3, CR2.4, CR2.5, CR2.6, CR3.3, CR3.6, CR4.2, and CR4.5.
TCM #20 - Promote Traffic Calming	Policy CR4.3 would continue St. Helena's efforts to calm traffic, minimizing traffic volumes and reducing traffic speeds.

The BAAQMD CEQA Guidelines provide screening criteria to conservatively identify less-than-significant impacts of carbon monoxide from traffic. According to these guidelines, projects that would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour would have less-than-significant impacts. Since intersections in St. Helena all have traffic volumes well below this level, modeling is not necessary to identify this impact as less than significant.

Community Risk and Hazards

According to BAAQMD CEQA Guidelines, for a general plan to have a less-than-significant impact with respect to TACs, overlays or buffer zones should be established for existing and proposed land uses that would emit these air pollutants. Buffer zones to avoid exposure to substantial levels of air pollution (in the form of TACs) should be reflected in local plan policies, land use maps, and implementing ordinances. The plans should identify goals, policies, and objectives to minimize potential impacts from these sources (including adopted risk reduction plan areas).

A review of potential air pollution sources in St. Helena identifies State Route 29 as the largest contributor. BAAQMD's inventory of permitted sources found only small sources of TACs in St. Helena, such as auto body shops with spray paint booths, a coffee roaster, a dry cleaning operation, some emergency diesel generators and a few miscellaneous sources associated with winery operations on the outskirts of the city (BAAQMD, 2010c). These would not be expected to have significant impacts.

According to the BAAQMD CEQA Guidelines, State Route 29 would be considered a busy arterial since it has traffic volumes of over 20,000 vehicles per day. For this reason, impacts from traffic exhaust were evaluated in terms of health risk from TACs and $PM_{2.5}$ concentrations.

The BAAQMD CEQA Guidelines consider exposure of sensitive receptors to air pollutant levels that result in an unacceptable cancer risk or hazard to be significant. For cancer risk, which is a concern with diesel particulate matter, BAAQMD considers an increased risk of contracting cancer that is 10 in one million chances or greater to be significant. The BAAQMD CEQA Guidelines also consider exposure to annual $PM_{2.5}$ concentrations that exceed 0.3 micrograms per cubic meter ($\mu g/m^3$) to be significant. The guidelines also include cumulative thresholds; however, State Route 29 is the only substantial source of TACs and air pollutant emissions that would require evaluation. While there are several types of air pollutants or toxic air contaminants emitted from traffic on freeways, BAAQMD has identified $PM_{2.5}$, diesel particulate matter, and TACs associated with organic gases as the primary indicators of adverse health effects. Organic gases from vehicles are emitted through both the exhaust and evaporation. These gases contain small amounts of TACs that can contribute to the cancer risk from traffic. However, diesel particulate matter, or DPM, is the largest contributor to cancer risk from traffic air pollution.

Analysis of Air Emissions from State Route 29 Traffic. This analysis addresses the impacts of State Route 29 traffic emissions of TACs and $PM_{2.5}$ upon potential new sensitive receptors that could be placed near the highway

as a result of the General Plan Update. Future health risks and $PM_{2.5}$ concentrations from exposure to traffic emissions from State Route 29 traffic were predicted. This analysis involved estimation of current and future vehicle emission rates for TACs and $PM_{2.5}$, traffic levels, and dispersion modeling of emissions.

The analysis involved the development of future emissions for traffic on State Route 29 using the latest version of CARB's EMFAC2007 emission factor model. The model was used with default vehicle information for Napa County. EMFAC2007 is the most recent version of the CARB motor vehicle emission factor model. Emissions are predicted by the model to decrease in the future. However, the current version of EMFAC2007 does not incorporate the effects of the recent on-road diesel vehicle regulations that will substantially reduce emissions even further. CARB recently adopted new regulations that will require on-road diesel trucks to be retrofitted with particulate matter controls or replaced to meet new 2010 engine standards that have much lower DPM and $PM_{2.5}$ emissions. This regulation would substantially reduce these emissions between 2011 and 2023, with the greatest reductions occurring in 2013 through 2015. While new trucks and buses will meet strict federal standards, this measure is intended to accelerate the rate at which the fleet either turns over so there are more cleaner vehicles on the road, or is retrofitted to meet similar standards. With this regulation, older, more polluting trucks would be removed from the roads much quicker. CARB anticipates a 68-percent reduction in $PM_{2.5}$ (including DPM) emissions from trucks in 2014 with this regulation.

The requirements for diesel trucks are phased in for future years and depend on the model year of the trucks. Since this analysis assesses the risk of proposed residences to future exposures, the lower future emissions were taken into account. The diesel truck age distribution used in the EMFAC2007 model was adjusted to reflect the effects of the new regulations. The EMFAC2007 results were then adjusted to the traffic volume and vehicle mix on State Route 29 reported by Caltrans. Average daily traffic volumes were assumed to increase by 1 percent per year to account for future traffic conditions. Emission factors were developed for 2012, 2015, and 2020, using the calculated mix of cars and trucks on State Route 29. For emission year 2015, which would apply to General Plan Update implementation during years 2015 – 2019, model years (MY) 2005 – 2015 were used to calculate emissions with EMFAC2007. For emission year 2020, which would apply to General Plan Update years 2020 – 2024, MYs 2007 – 2019 were used to calculate emissions with EMFAC2007. For emission beyond 2020, the 2020 emissions were used, even though these would also decrease.

The USEPA's Cal3qhcr model was used to calculate annual average TAC and particulate matter concentrations (i.e., both D PM and PM2.5) in the project area due to emissions from the traffic along State Route 29 in St. Helena. The Cal3qhcr model allows for the use of screening meteorology, traffic volume data, and emission factors. The model is a "line source model" designed to simulate the dispersion of emissions from motor vehicles on roadways and at intersections.

Specifically, a series of coordinates ("links") consistent with the location of State Route 29 in three dimensions (i.e., X, Y, and Z coordinates) were inputted into Cal3qhcr. Roadway links were also described using a mixing width (basically defined as the width of the paved portion of the roadway), hourly traffic volume, and an emission factor produced from the EMFAC2007 model. Screening modeling was conducted, which included a straight roadway link that extended 1,000 feet in both directions, peak-hour traffic conditions, and meteorological conditions that would result in poor dispersion. Since this is a screening assessment, meteorological inputs included a slow wind speed of 1 meter per second, worst-case wind angle search, "E" stability, and as a result, the modeling predicts worst-hour concentrations. Since the BAAQMD thresholds are based on annual concentrations, a persistence factor of 0.1 was used to convert 1-hour concentrations to annual concentrations.

Results of this assessment are presented in Table 4.D-4. The significance of these exposures is based on predicted lifetime cancer risk and annual $PM_{2.5}$ concentrations. Exposures at 25 feet to 300 feet were modeled. A setback of 50 feet from the edge of the roadway is the closest realistic exposure, since this is based on almost continuous annual or lifetime periods and accounts

TABLE 4.D-4
PREDICTED CANCER RISK AND PM2.5 EXPOSURE ALONG STATE ROUTE 29 IN ST. HELENA

Distance from Edge of Road	Increased Cancer Risk (chances per million)[a]	$PM_{2.5}$ Concentration
25 feet	9.4	0.08 µg/m^3
50 feet	5.9	0.05 µg/m^3
100 feet	3.6	0.03 µg/m^3
BAAQMD Significance Threshold	**10.0**	**0.3 µg/m^3**

[a] For residential exposure of 70 years beginning in 2012.

BAAQMD = Bay Area Air Quality Management District
µg/m3 = micrograms per cubic meter

SOURCE: Illingworth & Rodkin, 2010

for a credible "worst-case" exposure. Results in Table 4.D-4 indicate that the exposures would be below BAAQMD recommended thresholds of significance.

Potential non-cancer health effects due to chronic exposure to DPM were not modeled quantitatively since the concentration threshold for non-cancer effects (Hazard Index) is considerably higher than concentrations that would result in significant cancer risks. Specifically, the chronic inhalation reference exposure level (REL) for diesel particulate matter is 5 µg/m3. The maximum annual average diesel particulate matter concentrations modeled at all locations near the edge of State Route 29 would be several orders of magnitude lower than the REL. Thus, the Hazard Index, which is the ratio of the annual DPM concentration to the REL, would be much lower than the significance criterion of a hazard index greater than 1.0.

Conclusions. The General Plan Update would not place existing or planned sensitive receptors near sources of TAC or $PM_{2.5}$ emissions that could result in significant exposure. State Route 29 is the only substantial source of these emissions in St. Helena. However, significant exposures from this roadway would be contained within 50 feet. Thus, the General Plan Update would not need to identify an overlay or buffer for this source. The impact in relation to community risk and hazards would be less than significant.

Potentially Significant Impacts

The following impact could be potentially significant and thus would warrant mitigation measures.

Impact AIR QUALITY-1: The General Plan Update does not provide adequate buffers between existing or new sources of odors and existing or new receptors. (Potentially Significant)

The BAAQMD CEQA Guidelines provide project screening trigger levels for potential odor sources. To avoid significant impacts, the BAAMQD CEQA Guidelines recommend that buffer zones to avoid adverse impacts from odors should be reflected in local plan policies and land use maps.

There are no identified sources of odors that result in frequent odor complaints in St. Helena. However, localized odor sources could create complaints if sensitive receptors are placed in close proximity. An example would be new residences built next to a restaurant or coffee shop that has on-site coffee roasting. This type of conflict can result in odor complaints that could be avoided during project planning.

The proposed General Plan Update does not include any policies to provide buffers. Since there are no identified sources of odors, the General Plan Update cannot identify buffers. However, the General Plan Update also does not include any policies that would require the consideration of odors in land use planning. Therefore, the impact is considered potentially significant.

Mitigation Measures

Mitigation Measure AIR QUALITY-1: The following policy shall be added to the Land Use and Growth Management Element of the General Plan Update:

- *The potential for sources of odors that could include restaurants, auto body shops or waste treatment facilities shall be considered when evaluating proposed residential developments and other projects with sensitive receptors*.

The inclusion of this policy would reduce the impact to a less-than-significant level. (Less than Significant)

References – Air Quality

Bay Area Air Quality Management District (BAAQMD). No date. Bay Area Air Pollution Summaries for 2006, 2007, and 2008 available at http://www.baaqmd.gov/Divisions/Communications-and-Outreach/Air-Quality-in-the-Bay-Area/Air-Quality-Summaries.aspx.

BAAQMD. 2010a. *BAAQMD CEQA Air Quality Guidelines*. May.

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4.E Noise

Introduction

This section summarizes information on the noise environment in the St. Helena planning area and provides an evaluation of the noise-related effects of the proposed General Plan Update. The analysis considers existing and projected noise along major roadways, in addition to other noise sources in the area. Mitigation measures are recommended that address General Plan Update policies and implementing actions.

The noise element of a city's general plan is a comprehensive approach for including noise control in the planning process. It is a tool for achieving and maintaining environmental noise levels that are compatible with specific land use types. The Public Health, Safety and Noise Element of the proposed General Plan Update identifies noise-sensitive land uses and noise sources, defines areas of noise impact, and establishes goals, policies, and implementing actions to protect people from excessive noise and vibration.

Setting

Background Information on Noise

Noise may be defined as unwanted sound.

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. Thus, an increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, and so on. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10-decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 4.E-1.

TABLE 4.E-1
DEFINITIONS OF ACOUSTICAL TERMS

Term	Definitions
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1 percent, 10 percent, 50 percent, and 90 percent of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 PM and 7:00 AM.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 PM to 10:00 PM and after addition of 10 decibels to sound levels measured in the night between 10:00 PM and 7:00 AM.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	Noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

SOURCE: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

There are several methods of characterizing sound. The most common in California is the A-weighted sound level or dBA. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 4.E-2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be used. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night – because excessive noise interferes with the ability to sleep – 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community, with a 5-dB penalty added to evening (7:00 PM - 10:00 PM) and a 10 dB-addition to nocturnal (10:00 PM - 7:00 AM) noise levels. The Day/Night Average Sound Level, DNL or L_{dn}, is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

Steady noise of sufficient intensity (above 30 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep.

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors, the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 30 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower.

The interior noise standard for multi-family dwellings is set by the State of California at 45 dBA L_{dn}. The standard is designed for sleep and speech

TABLE 4.E-2
TYPICAL NOISE LEVELS IN THE ENVIRONMENT

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime		
	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

SOURCE: Technical Noise Supplement (TeNS), Caltrans, November 2009.

protection, and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12 to 17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57 to 62 dBA L_{dn} with open windows and 65 to 70 dBA L_{dn} if the windows are closed. Levels of 55 to 60 dBA are common along collector streets and secondary arterials, while 65 to 70 dBA is a typical value for a primary/major arterial. Levels of 75 to 80 dBA are normal outdoor noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, while those facing major roadways and freeways typically need special glass windows.

Annoyance

Noise causes annoyance when it interferes with speech, radio, and television; causes house vibrations; or interferes with sleep and rest.

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio, and television; house vibrations; and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At an L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25 to 30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between an L_{dn} of 60 to 70 dBA. Between an L_{dn} of 70 to 80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed.

People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30 to 35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4-percent increase in the percentage of the population highly annoyed.

Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several methods, including Peak Particle Velocity (PPV) and Root Mean Square (RMS) velocity, are typically used to quantify the amplitude of vibration. PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. RMS velocity is defined as the average of the squared amplitude of the signal. PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Railroad trains within the St. Helena planning area are potential sources of ground vibration.

People's response to ground vibration has been correlated best with the vibration velocity level. The vibration velocity level is expressed on the decibel scale. The abbreviation "VdB" is used in this document for vibration decibels to reduce the potential for confusion with sound decibels.

Sources of Groundborne Vibration

Typical background vibration levels in residential areas are usually 50 VdB or lower, well below the threshold of perception for most humans.

Perceptible vibration levels inside residences are attributed to the operation of heating and air conditioning systems, door slams, and foot traffic.

Table 4.E-3 identifies some common sources of vibration and the association to human perception or the potential for structural damage. Construction activities, train operations, and street traffic are some of the most common external sources of vibration that can be perceptible inside residences. Railroad trains within the St. Helena planning area are potential sources of ground vibration.

TABLE 4.E-3
TYPICAL LEVELS OF GROUNDBORNE VIBRATION

Human/Structural Response	Velocity Level, in Vibration Decibels (VdB)	Typical Events (50-Foot Setback)
Threshold, minor cosmetic damage	100	Blasting, pile driving, vibratory compaction equipment
		Heavy tracked vehicles (Bulldozers, cranes, drill rigs)
Difficulty with tasks such as reading a video or computer screen	90	
		Commuter rail, upper range
Residential annoyance, infrequent events	80	Rapid transit, upper range
Residential annoyance, occasional events		Commuter rail, typical bus or truck over bump or on rough roads
Residential annoyance, frequent events	70	Rapid transit, typical
Approximate human threshold of perception to vibration		Buses, trucks and heavy street traffic
	60	
		Background vibration in residential settings in the absence of activity
Lower limit for equipment ultra-sensitive to vibration	50	

SOURCE: Transit Noise and Vibration Impact Assessment, U.S. Department of Transportation Federal Transit Administration, May 2006.

Construction activities can cause vibration that varies in intensity depending on several factors. Pile driving and vibratory compaction equipment typically generate the highest construction-related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the peak particle velocity descriptor (PPV) has been routinely used to measure and assess groundborne vibration and almost exclusively to assess both the

potential of vibration to induce structural damage and the degree of annoyance for humans.

Effects of Groundborne Vibration

Human reaction and effects to buildings from vibration are shown in Table 4.E-4. The annoyance levels shown in Table 4.E-4 should be interpreted with care since vibrations may be found to be annoying at much lower levels than those shown, depending on the level of activity or inactivity. Elderly, retired, or others staying mostly at home, people reading or studying in a quiet environment, and people involved in vibration-sensitive activities are examples of people potentially annoyed by vibration at very low levels. To these and other sensitive individuals, even vibrations at the threshold of perception can be annoying.

TABLE 4.E-4
REACTION OF PEOPLE AND POTENTIAL DAMAGE TO BUILDINGS FOR CONTINUOUS VIBRATION LEVELS

Velocity Level, Peak Particle Velocity (PPV) (inches/second)	Human Reaction	Effect on Buildings
0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibration unlikely to cause damage of any type
0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of “architectural” damage to normal buildings
0.20	Vibrations annoying to people in buildings	Threshold at which there is a risk of “architectural” damage to normal dwellings such as plastered walls or ceilings
0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations	Vibration at this level would cause “architectural” damage and possibly minor structural damage.

SOURCE: Transportation Related Earthborne Vibrations. Caltrans, Technical Advisory, TAV-02-01-R9601, February 2002.

Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise, causing induced vibration in exterior doors and windows.

Existing Noise Conditions

The noise environment in St. Helena is notable for being extremely quiet, especially in the evenings and at night.

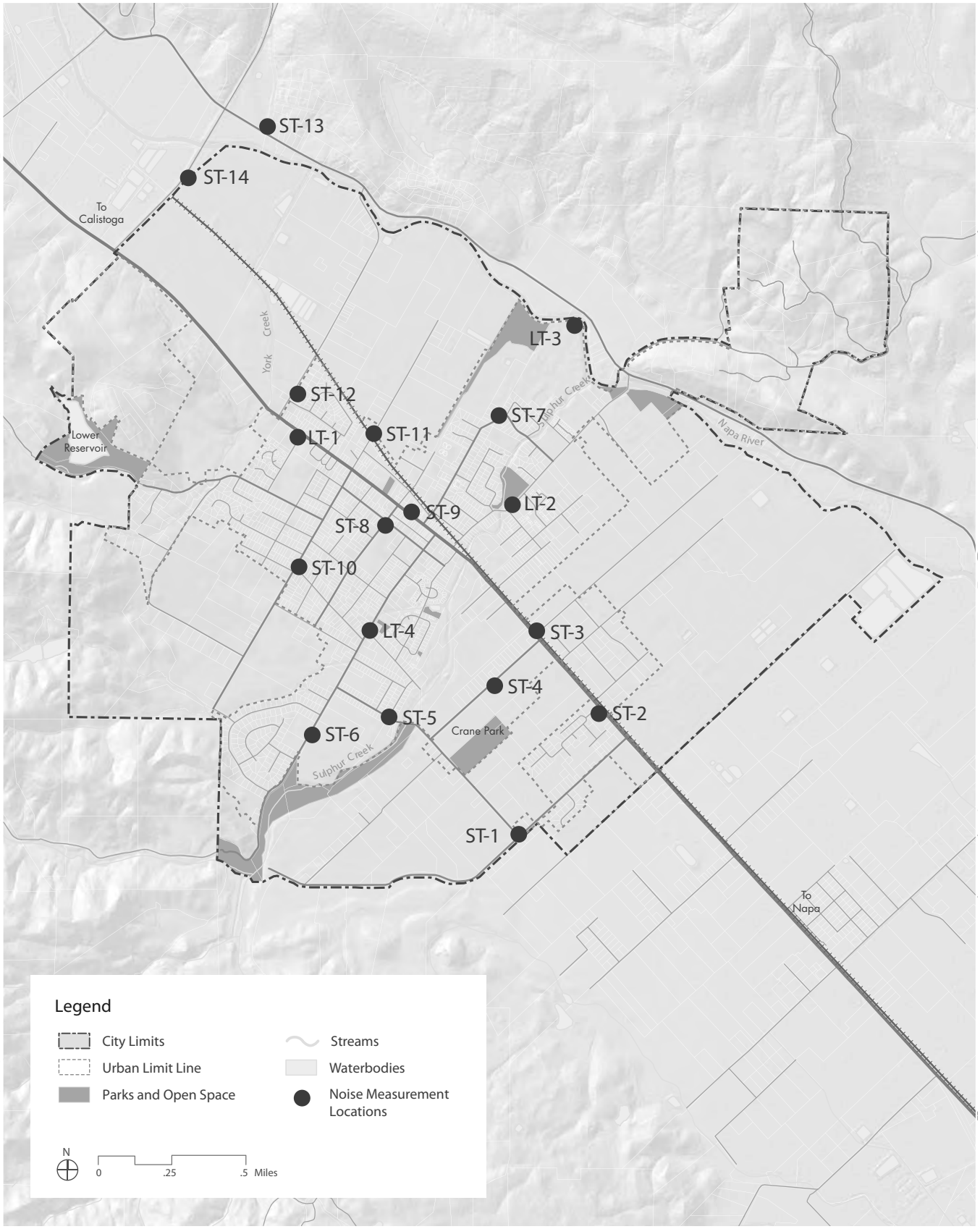
The ambient noise environment in the City of St. Helena is notable for being extremely quiet, especially in the evenings and at nighttime. Residential areas away from collector streets are shielded from highway and collector noise and register very low background noise levels typically in the range of 20 to 25 dBA or below during evening and nighttime hours. Except within close proximity to Main Street/State Route (SR) 29 and major collector roadways, the noise environment can be characterized as being that of a quiet rural setting.

The ambient noise environment in the City of St. Helena is predominantly the result of transportation-related noise sources. Main Street/SR 29 traffic noise is the highest in the community. Major collector roadways, including Silverado Trail, Deer Park Road, and Pope Street, are also significant sources of traffic noise at land uses adjoining these roadways. Noise sources that are intermittent and generally inconsequential to the noise environment are commercial aircraft at high altitudes, and small general aviation and helicopter overflights. The Wine Train has an average of two round trips through St. Helena per day and emits a loud horn at crossings along with the low frequency rumble of the diesel engines. Gravel processing operations at Harold Smith and Son, Inc. along Sulphur Creek also contribute to ambient noise levels at receivers in the vicinity.

Intermittent noises that are typical in St. Helena include those related to agricultural activities, street sweeping and garbage/recycling pickup in the early morning, and emergency sirens. High noise levels are generated by wind machines used for agriculture in the early spring, with noise levels of approximately 90 dBA at nearby residential receptors at the same time that background noise levels are in the low-20 dBA range. Tractors and sulphur blowers that are also employed in the vineyards in the early hours of the morning create other agricultural-related noise. Finally, the city has sirens at two locations associated with the Fire Department. The sirens sound on an average of two to three times per day, with approximately half of these soundings occurring during nighttime hours. Siren sound levels exceed 100 dBA at residences near the sirens and drop off to around 55 dBA at distant residential areas.

Noise from Major Roadways

A noise monitoring survey was conducted to quantify noise levels along Main Street/SR 29 and other collector roadways in and around St. Helena. Figure 4.E-1 shows the noise measurement locations.



SOURCE: City of St. Helena; Napa County, November 2008; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.E-1
Noise Measurement Locations

Traffic noise levels along Main Street, in the vicinity of Elmhurst Avenue, are approximately 71 dBA L_{dn} at a distance of 75 feet from the roadway center. Traffic noise levels are slightly lower in the downtown section of the road, where average travel speeds are lower. On portions of Main Street near the north and south boundaries of St. Helena, traffic noise levels are slightly higher, as traffic generally flows at or near 45 miles per hour (mph). During the peak hour, average traffic noise levels (L_{eq}) are approximately equal to the L_{dn} along Main Street. This is typical of major local roadways with some nighttime traffic.

The Silverado Trail generates a day-night average noise level of about 69 dBA L_{dn} at a distance of 75 feet from the roadway centerline. Noise levels along the Silverado Trail do not vary substantially where the roadway borders St. Helena because existing traffic volumes and travel speeds are fairly constant.

Pope Street is the primary east-west connector in St. Helena. Traffic along this roadway generates a day-night average noise level of about 65 dBA L_{dn} at a distance of 75 feet from the roadway center line. Average noise levels along Pope Street during the noisiest hours of the day are about 2 dBA L_{eq} above the L_{dn}. This is typical of roadways with little nighttime traffic.

Noise levels along roads in residential areas (e.g., Spring Street) peak between 7:00 AM and 9:00 AM (66 to 68 dBA L_{eq}), gradually decrease throughout the day, range from 52 to 57 dBA L_{eq} in the evening, and then fall below 50 dBA L_{eq} at night. Day-night average noise levels are typically less than 60 dBA L_{dn} at a distance of 75 feet from the roadway center line.

Noise from Napa Valley Wine Train

The Napa Valley Wine Train is a source of high levels of noise as the train passes through the City of St. Helena. The Wine Train typically makes two round trips per day, one during lunch and one during dinner (Napa Valley Wine Train, 2009), for a total of four one-way trips through the city. The railroad tracks roughly parallel Main Street in the south and central portions of the city and diverge near Pope Street, continuing northward to the terminus of the railroad line at about Pratt Avenue.

The Napa Valley Wine Train is a source of high levels of noise as the train passes through St. Helena.

The most significant source of noise associated with the Wine Train is the train warning whistle. Unless a “quiet zone” has been established, trains that travel at a speed less than 45 mph are required to sound their warning whistle at all public grade crossings at least 15 seconds but not more than 20 seconds before entering a crossing to warn pedestrians and motorists of the oncoming train. These warning whistles can produce maximum noise levels up to 110 dBA L_{max} at 50 feet. The sound produced by the Wine Train warning whistle is audible throughout the community.

Assuming one train passby per hour, Napa Valley Wine Train operations generate an hourly average noise level of 66 dBA L_{eq} at a distance of 50 feet from the tracks. Day-night average noise levels are calculated to be 64 dBA L_{dn} at a distance of 50 feet from the tracks assuming four trips per day between the hours of 7:00 a.m. and 10:00 p.m. Although the Wine Train travels at a relatively slow speed throughout St. Helena, the train is a source of perceptible groundborne vibration. Assuming a travel speed of about 20 mph, groundborne vibration levels would be expected to be perceptible within approximately 50 to 75 feet from the center of the tracks.

Aircraft Noise

The closest airport to St. Helena is Angwin-Parrett Field Airport, located approximately 4 miles northeast of the city limits. Aircraft operating out of this airport, as well as others in the Bay Area, intermittently contribute to ambient noise levels in the city. Aircraft based at Angwin-Parrett Field Airport include 35 single-engine airplanes and three multi-engine airplanes. The airport averages about 33 aircraft operations per day (AirNav.com, 2009). Approximately 75 percent of aircraft operations are local general aviation and 25 percent are transient general aviation. Noise generated by these overflights, although audible and noticeable at times, does not measurably affect daily average noise levels in the city.

Stationary Noise Sources

The predominant stationary noise source in St. Helena is the concrete batch plant on Crane Avenue.

The predominant stationary noise source in the City of St. Helena is the concrete batch plant owned and operated by Harold Smith & Son, Inc. located at 800 Crane Avenue. Noise generated by this facility includes the sounds generated by the plant itself as well as the operation of trucks and other heavy equipment located on the site.

Noise is also generated on individual parcels whether industrial, commercial, or residential. These smaller sources of noise do not negatively affect the overall noise environment throughout the community.

Other Noise Sources

Other existing sources of noise include commercial, recreational, and school uses. Noise sources associated with commercial uses include mechanical equipment, as well as activities associated with parking lots, loading docks, and drive-throughs. Mechanical equipment is used extensively in buildings to provide heating, cooling, air circulation, and water supply. Mechanical equipment that produces noise includes motors, pumps, and fans. Although noise levels from these sources are generally low at nearby properties, such sources may operate continuously and may include pure tones that make them audible and sources of annoyance at a substantial distance.

Intermittent or temporary noise sources include portable power equipment such as leaf blowers, lawn mowers, portable generators, electric saws and drills, and other similar equipment. Although these noise sources are typically short in duration, they are often loud and can be major sources of annoyance.

Regulatory Framework

This subsection describes the relevant guidelines, policies, and standards established by federal and state agencies and the City of St. Helena.

Federal Regulations

Department of Housing and Urban Development (HUD)

New residential construction qualifying for HUD financing and proposed in high noise areas must incorporate noise attenuation features to maintain acceptable exterior and interior noise levels.

The U.S. Department of Housing and Urban Development (HUD) environmental criteria and standards are presented in 24 CFR Part 51 (U.S. Department of Housing and Urban Development, 1979). New residential construction qualifying for HUD financing and proposed in high noise areas (exceeding 65 dBA L_{dn}) must incorporate noise attenuation features to maintain acceptable exterior and interior noise levels. A goal of 45 dBA L_{dn} is set forth for interior noise levels and attenuation requirements are geared toward achieving that goal. It is assumed that with standard construction, any building will provide sufficient attenuation to achieve an interior level of 45 dBA L_{dn} or less if the exterior level is 65 dBA L_{dn} or less. Approvals in a “normally unacceptable noise zone” (exceeding 65 decibels but not exceeding 75 decibels) require a minimum of 5 decibels additional noise attenuation for buildings if the day-night average is greater than 65 decibels but does not exceed 70 decibels, or minimum of 10 decibels of additional noise attenuation if the day-night average is greater than 70 decibels but does not exceed 75 decibels.

Federal Highway Administration

Proposed federal or federal-aid highway construction projects at a new location, or the physical alteration of an existing highway that significantly changes either the horizontal or vertical alignment or increases the number of through-traffic lanes, require an assessment of noise and consideration of noise abatement per Title 23 of the Code of Federal Regulations, Part 772 (23 CFR Part 772), “Procedures for Abatement of Highway Traffic Noise and Construction Noise”(U.S. Department of Transportation, Federal Highway Administration, 1992). The Federal Highway Administration (FHWA) considers noise abatement for sensitive receivers such as picnic areas, recreation areas, playgrounds, active sport areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals when “worst-hour” noise levels approach or exceed 67 dBA L_{eq}. The California Department of

Transportation (Caltrans) has further defined the definition of approaching the noise abatement criteria (NAC) to be 1 dBA below the NAC (e.g., 66 dBA L_{eq} is considered approaching the NAC for Category B activity areas).

Federal Transit Administration

The Federal Transit Administration (FTA) transit and train vibration impact criteria for residences and buildings where people normally sleep (e.g., nearby residences) are 72 VdB for frequent events (more than 70 events of the same source per day), 75 VdB for occasional events (30 to 70 vibration events of the same source per day), and 80 VdB for infrequent events (fewer than 30 vibration events of the same source per day) (U.S. Department of Transportation, Federal Transit Administration, 2006).

State Regulations

California Government Code Section 65302(f)

The California Government Code requires that all general plans include a noise element.

California Government Code Section 65302(f) requires that all general plans include a noise element to address noise problems in the community. The State Office of Planning and Research (OPR) has established guidelines for the content of the noise element. State law requires that current and future noise level contours be developed for the following sources:

- Highways and freeways;
- Primary arterials and major local streets;
- Passenger and freight on-line railroad operations and ground rapid transit systems;
- Commercial, general aviation, heliport, and military airport operations, aircraft flyovers, jet engine tests stands, and all other ground facilities and maintenance functions related to airport operation;
- Local industrial plants, including, but not limited to, railroad classification yards; and,
- Other stationary ground noise sources identified by local agencies as contributing to the community noise environment.

California Building Code – Noise Insulation Standards

The State of California Administrative Code (Title 24) establishes minimum noise insulation performance standards for hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family dwellings. The 2007 California Building Code (Chapter 12, Appendix Section 1207.11.2) incorporates the standards. The noise limit is a maximum

The State of California Administrative Code (Title 24) establishes minimum noise insulation performance standards for hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family houses.

interior noise level of 45 dBA L_{dn}. Where exterior noise levels exceed 60 dBA L_{dn}, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the noise limit. A city's general plan must facilitate implementation of the noise insulation standards.

Division of Aeronautics Noise Standards

Title 21 of the California Code of Regulations (State of California, 1990) sets forth the state's airport noise standards. In the findings described in Section 5006, the standard states the following:

> *A level of noise acceptable to a reasonable person residing in the vicinity of an airport is established as a community noise equivalent level (CNEL) value of 65 dB for purposes of these regulations. This criterion level has been chosen for reasonable persons residing in urban residential areas where houses are of typical California construction and may have windows partially open. It has been selected with reference to speech, sleep, and community reaction.*

Based on this finding, the airport noise standard as defined in Section 5012 is set at a CNEL of 65 dB. It should be noted that no airports are located within or immediately adjacent to the City of St. Helena. The nearest airport is located in Angwin to the east of St. Helena. (See "Existing Noise Conditions" above.)

California Department of Transportation – Construction Vibration

The California Department of Transportation (Caltrans) has adopted guidance for construction vibrations, and this guidance is used in this analysis to address construction vibrations. Caltrans uses a vibration limit of 12.7 millimeters per second (0.5 inch per second), PPV for buildings structurally sound and designed to modern engineering standards. A conservative vibration limit of 5 millimeters per second (0.2 inch per second), PPV has been used for buildings that are found to be structurally sound but structural damage is a major concern. For historic buildings or buildings that are documented to be structurally weakened, a conservative limit of 2 millimeters per second (0.08 inch per second), PPV is often used to provide the highest level of protection. All of these limits have been used successfully and compliance to these limits has not been known to result in appreciable structural damage. All vibration limits referred to herein apply on the ground level and take into account the response of structural elements (i.e., walls and floors) to groundborne excitation.

City of St. Helena Regulations

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the City's long-term vision as it pertains to housing, transportation, historic preservation, open space and other areas. Appendix D contains tables from the existing St. Helena General Plan that establish noise-related standards. The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

St. Helena Municipal Code

The St. Helena Municipal Code generally prohibits noise generated by commercial activities between the hours of 10:00 PM and 7:00 AM that can be heard at the property line of any parcel.

Unnecessary noise is defined in Chapter 8.24 of the St. Helena Municipal Code. The Municipal Code does not quantitatively regulate noise levels, but states that "… 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 persons…" would violate the ordinance unless permitted by the chief of police. Similarly, noise generated by commercial activities between the hours of 10:00 PM and 7:00 AM 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 AM and 5:00 PM 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 AM and 6:00 PM. Noise generated by contracted landscape maintenance activities is limited to the hours between 8:00 AM and 5:00 PM Monday through Saturday and prohibited on Sundays and holidays (federal and local).

Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the CEQA Guidelines, implementation of the proposed General Plan Update would have a significant noise impact if it would:

- Expose people to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive groundborne vibration or groundborne noise levels;
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels; or
- For a project within the vicinity of a private airstrip, expose people residing or working in the project area to excessive noise levels.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address noise as it affects the community:

PS2.1. 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.

PS2.2. Minimize 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 and noise contour maps to determine the compatibility of land uses.

PS2.3. Encourage a reduction in the use of machinery and other noise-making equipment and sources near residential areas where the noise impacts would be considered intrusive to adjacent residential property, unless consistent with the right-to-farm.

PS2.A. 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.

PS2.B. Enforce the Land Use Compatibility Standards presented in the State of California's General Plan guidelines when siting new uses. These standards identify the acceptability of a project based on levels of noise exposure.

PS2.C. Require an acoustical study, prepared by a qualified acoustical consultant for:

- All proposed projects that are likely to be exposed to noise levels greater than the standards;
- All proposed projects that would generate noise where impacts on other uses would be greater than the standards;
- Any project exposed to outdoor noise at or above a day-night average sound level (L_{dn}) of 60 or for any noise source that could create such outdoor noise levels for adjacent uses; and
- Any project exposed to or that creates noise which exceeds the adopted City standards.

PS2.D. Encourage new developments to implement noise mitigation measures when built in close proximity to noise sources, such as SR 29 and the railroad tracks. These developments should consider the exterior and interior noise environment.

PS2.E. Require construction operations to use noise suppression devices and techniques and limit noisy construction activities to the least noise-sensitive times, as per the noise ordinance.

PS2.F. Include appropriate noise attenuation techniques in the design of all new arterial streets. Such techniques would include the use of site planning, building orientation, buffer distances and the use of correctly-engineered acoustical barriers and berms where necessary.

PS2.G. Adopt a noise ordinance to regulate intrusive noise sources, such as the use of machinery and equipment, animals, vehicles and motorcycles, and idling buses or trucks in or near uses sensitive to noise.

PS2.H. Incorporate right-to-farm legal provisions relative to noise in all newly-created deeds where agricultural activities may pose noise impacts in the future. Require similar verbiage in deeds for properties similarly impacted by the Harold Smith & Son gravel plant operations.

Impact Analysis

Less-than-Significant Impacts

Noise-Generating Land Uses

Development allowed by the General Plan Update would introduce new noise-generating sources adjacent to existing and new noise-sensitive areas. Mixed-use development projects, for example, often include residential uses located above or close to commercial uses. The General Plan Update would allow mixed-use development along Main Street/SR 29. The operation of the commercial components of these uses could substantially increase noise levels at existing noise-sensitive land uses in the vicinity or could expose new receivers to unacceptable noise levels.

Future operations at existing and proposed noise-producing land uses are dependent on many variables, and information is not available to allow meaningful projections of noise. Noise conflicts may be caused by noise sources such as outdoor dining areas or bars, mechanical equipment, outdoor maintenance areas, truck loading docks and delivery activities, public address systems, and parking lots (e.g., opening and closing of vehicle doors, people talking, car alarms).

General Plan Update Policy PS2.3 would encourage a reduction in noise from machinery and other noise-making equipment near residential areas. Implementing Action PS2.C would require acoustical analyses of noise-generating uses to mitigate noise levels in sensitive areas, ensuring that existing residences and other noise-sensitive land uses would not be exposed to excessive noise. Implementing Action PS2.G would require the adoption of a noise ordinance to regulate intrusive noise sources, such as the use of machinery and equipment, animals, vehicles and motorcycles, and idling buses or trucks in or near uses sensitive to noise. The impact resulting from noise-generating land uses would be less than significant with the adoption of the proposed General Plan Update policies and implementing actions.

Groundborne Vibration

Mixed-use and residential developments are envisioned along the existing Napa Valley Wine Train railroad line. Existing groundborne vibration levels resulting from infrequent, low-speed, Napa Valley Wine Train passbys are generally low and just perceptible at distances of 50 to 75 feet from the tracks. The specific locations of proposed buildings and their sensitivities to vibration levels are not known at this time. However, the planned uses would be separated from the railroad by Main Street/SR 29 and would be a minimum distance of approximately 55 feet from the railroad. Groundborne vibration levels at this minimum distance would be at most perceptible and

would only occur a few times per day, primarily during daytime and early evening hours when people are not normally sleeping or at rest. The impact of locating sensitive land uses in the immediate vicinity of the Napa Valley Wine Train would be less than significant due to the low vibration levels associated with train passbys, the infrequent number of events per day, and the fact that these vibration events occur during the less sensitive hours of the day.

Construction Noise

The General Plan Update would facilitate the construction of new projects, and existing residences and businesses located adjacent to proposed development sites would be affected at times by construction noise. These projects would primarily be infill developments situated along Main Street/SR 29, the predominant source of environmental noise that affects the community. Other small projects would also be constructed in various areas of the city.

Measuring Construction Noise Impacts. Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise sensitive receptors. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise-sensitive land uses, or when construction lasts for extended periods of time.

For the purposes of this assessment, construction noise impacts would be considered significant if (1) the construction noise would exceed 60 dBA L_{eq} and would exceed ambient noise levels by 5 dBA L_{eq} or more at nearby noise-sensitive land uses (e.g., residential land uses) for a period of more than one construction season, or (2) the construction noise would exceed 70 dBA L_{eq} and would exceed ambient noise levels by 5 dBA L_{eq} or more at industrial, office, or commercial land uses for a period of more than one construction season.

Anticipated Sources of Construction Noise. Major noise-generating construction activities associated with new projects would include removal of existing pavement and structures, site grading and excavation, installation of utilities, construction of building cores and shells, paving, and landscaping. The highest construction noise levels would be generated during grading and excavation because of the use of heavy equipment, with lower noise levels occurring during building construction activities when activities move indoors and less heavy equipment is required. Construction equipment would

typically include, but would not be limited to, earth-moving equipment and trucks, pile driving rigs, mobile cranes, compressors, pumps, generators, paving equipment, and pneumatic, hydraulic, and electric tools.

Typical Construction Noise Levels. Table 4.E-5 presents the typical range of hourly average noise levels generated by different phases of construction measured at a distance of 50 feet. Hourly average noise levels generated by demolition and construction are about 77 dBA to 89 dBA L_{eq} measured at a distance of 50 feet from the center of a busy construction site. Large pieces of earth-moving equipment, such as graders, scrapers, and bulldozers, generate maximum noise levels of 85 to 90 dBA L_{max} at a distance of 50 feet. Typical hourly average construction-generated noise levels are about 81 to 89 dBA L_{eq} measured at a distance of 50 feet from the site during busy construction periods.

TABLE 4.E-5
TYPICAL RANGES OF NOISE LEVELS AT 50 FEET FROM CONSTRUCTION SITES (DBA L_{EQ})

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I[a]	II[b]	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

[a] I – All pertinent equipment present at site.
[b] II – Minimum required equipment present at site.

SOURCE: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

During each stage of development, there would be a different mix of equipment operating and noise levels would vary based on the amount of equipment in operation and the location of the activity. Noise levels would drop off at a rate of about 6 dBA per doubling of distance between the noise source and receptor. Intervening structures or terrain would result in lower noise levels.

Conclusions. Noise generated by infill projects facilitated by the General Plan Update would likely have relatively short overall construction durations, with the noisiest phases of construction (e.g., demolition, foundations,

project infrastructure, building core and shell) limited to a timeframe of one year or less. These phases of construction are not anticipated to generate noise levels in excess of 60 dBA L_{eq} and the ambient noise environment by 5 dBA L_{eq} or more at sensitive land uses in the area over extended periods of time (beyond one construction season). Interior construction, landscaping, and finishing activities would not be expected to result in noise levels in excess of 60 dBA L_{eq}.

The potential short-term noise impacts associated with construction facilitated by the General Plan Update would be mitigated by the adoption of Implementing Action PS2.E, which would require "…construction operations to use noise suppression devices and techniques and limit noisy construction activities to the least noise-sensitive times, as per the noise ordinance." The St. Helena Municipal Code limits construction activities to the hours between 8:00 AM and 5:00 PM, 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.

In accordance with Implementing Action PS2.E, noise suppression devices and techniques developed as part of a typical construction noise control plan would include, but not be limited to, the following measures:

- Use "quiet" models of air compressors and other stationary noise sources where technology exists;
- Equip all internal combustion engine-driven equipment with mufflers that are in good condition and appropriate for the equipment;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Locate staging areas and construction material areas as far away as possible from adjacent land uses;
- Prohibit all unnecessary idling of internal combustion engines;
- Notify all adjacent land uses of the construction schedule in writing;
- Designate a "disturbance coordinator" who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

The use of reasonable noise reduction measures during all phases of construction activity, in combination with the limitations on hours set forth in the St. Helena Municipal Code, would reduce the impact of construction noise to a less-than-significant level.

Aircraft Noise

Noise levels resulting from aircraft overflights, although audible and noticeable at times, do not measurably contribute to daily average noise levels in the city. The city is not located within an airport land use plan, or within two miles of a public airport or private airstrip, and development in accordance with the General Plan Update would not expose persons to excessive aircraft noise.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact NOISE-1: New noise-sensitive land uses allowed by the General Plan Update may be exposed to unacceptable noise levels. (Potentially Significant)

The General Plan Update would allow development of new noise-sensitive uses adjacent to existing noise sources. In particular, development of the Change Areas, Key Housing Opportunity Sites, and Pipeline Projects identified in the General Plan Update could locate noise-sensitive land uses in areas where noise levels would exceed “normally acceptable” levels for the proposed use.

Change Areas sensitive to noise would include the mixed-use developments planned along Main Street/SR 29, the Napa Valley Wine Train railroad line, and Oak Street. Noise-sensitive mixed-use and public/quasi-public uses are also planned along Adams Street. Residential developments planned along Oak Avenue, Spring Street, and Grayson Avenue would also be considered sensitive to noise. Key Housing Opportunity Sites identified in the 2009 Housing Element would also be sensitive to community noise; these sites are scattered throughout St. Helena. Most of the Pipeline Projects (i.e., projects currently under review by the City or tentatively proposed for the immediate future) are located along Main Street/SR 29.

Residential development is sensitive to community noise both outdoors and indoors. The development of residential uses adjacent to arterial and collector roadways, or in areas where high noise levels exist from agricultural or industrial operations, may result in exposure to noise levels exceeding “normally acceptable” levels for these uses. Therefore, acoustical analyses

are typically conducted to design mitigation that would reduce noise levels as much as practical in exterior use areas and maintain interior noise levels at acceptable levels. High-density/mixed-use residential, commercial, and industrial development is less noise-sensitive because uses are primarily indoors and noise levels are generally mitigated with building design and construction.

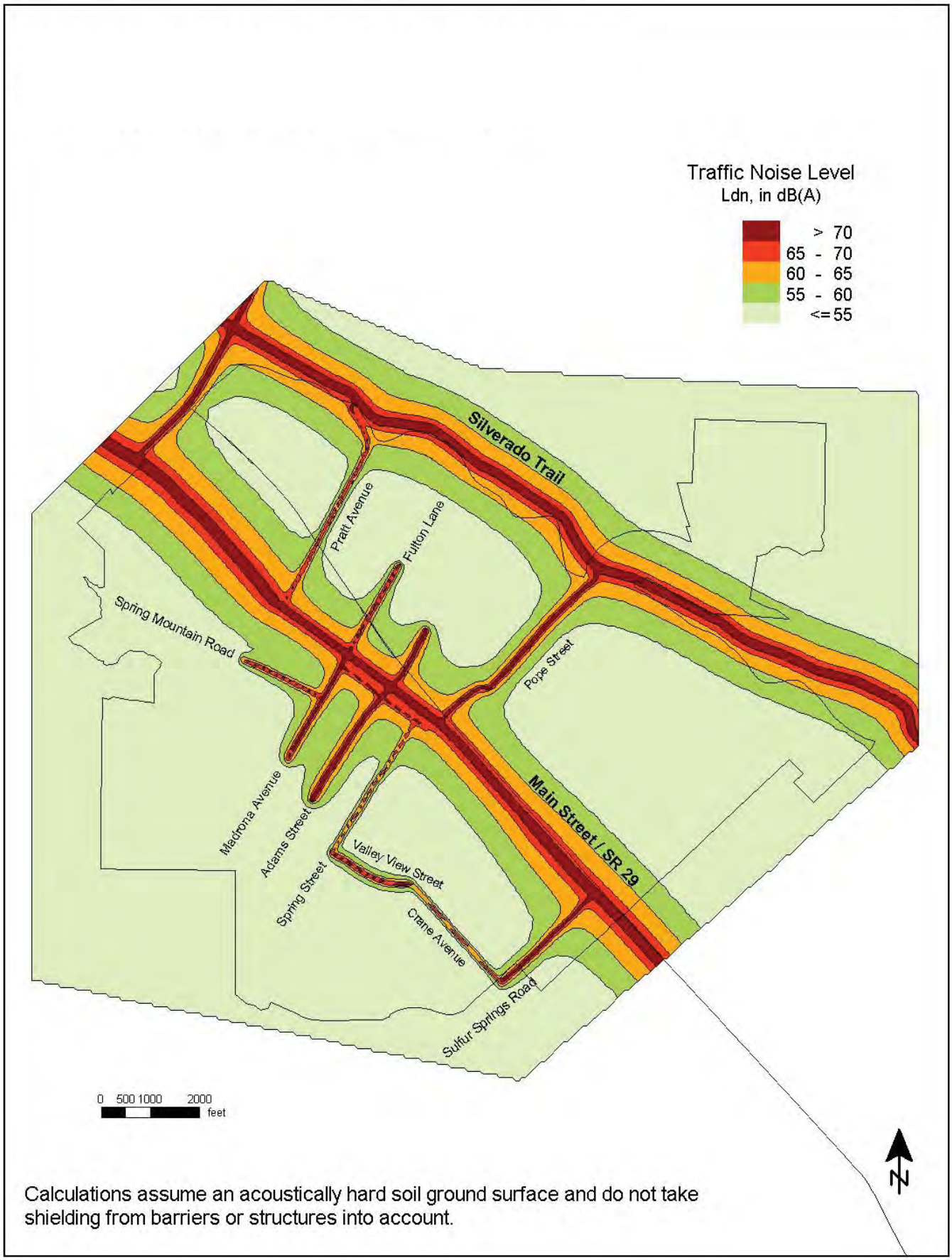
Potential Noise Exposure

A computer model was used to calculate traffic noise levels throughout St. Helena. The model, SoundPLAN V7.0, is a three-dimensional ray-tracing program that takes into account the source of noise, the frequency spectra, and numerous environmental variables. Existing and future traffic noise levels throughout St. Helena were modeled to determine the noise level contours along major roadways. Figure 4.E-2 displays the projected noise contours in St. Helena for major roadways. As indicated on this figure, development proposed along Main Street/SR 29, Spring Street, Oak Avenue, and Adams Street would be subject to transportation noise levels exceeding 60 dBA L_{dn}.

Where exterior noise levels exceed 60 dBA L_{dn} in new residential development areas, interior levels might exceed the 45 dBA L_{dn} noise limit established by federal and state regulations. Interior noise levels are about 15 dBA lower than exterior levels within residential units with the windows partially open and approximately 20 to 25 decibels lower than exterior noise levels with the windows closed, assuming typical California construction methods. Where exterior day-night average noise levels are 60 to 70 dBA L_{dn}, interior noise levels can typically be maintained below 45 dBA L_{dn} with the incorporation of an adequate forced air mechanical ventilation system in the residential units to allow residents the option of controlling noise by keeping the windows closed. In areas exceeding 70 dBA L_{dn}, the inclusion of windows and doors with high Sound Transmission Class (STC) ratings, and the incorporation of forced-air mechanical ventilation systems, may be necessary to meet the 45 dBA L_{dn} noise limit.

Conclusions

General Plan Update Policies PS2.1 and PS2.2 and Implementing Actions PS2.A, PS2.B, PS2.C, and PS2.D would require that the State of California's General Plan guidelines be used when siting new uses and would require noise attenuation measures to achieve the 60 dBA L_{dn} "tentatively compatible" noise level standard for residential uses. The noise-related policies and implementing actions of the General Plan Update would therefore reduce the potential impact associated with noise and land use compatibility in exterior areas to a less-than-significant level.



SOURCE: Illingworth & Rodkin, Inc.

St. Helena General Plan Update EIR . 210147

Figure 4.E-2
Likely Buildout Scenario Noise Contours for Major Roadways in St. Helena

In accordance with Implementing Action PS2.C, acoustical studies would be required for new development proposals when appropriate in order to maintain consistency with the exterior noise standard established by the General Plan Update. The policies and implementing actions, however, do not establish an acceptable interior noise level threshold. At minimum, the interior noise limits set forth in the State Building Code (45 dBA L_{dn}) should be extended to all residential land uses in St. Helena.

Mitigation Measure

Mitigation Measure NOISE-1: The following policy shall be included in the Public Health, Safety and Noise Element of the General Plan Update:

- *Adopt the State of California Administrative Code's (Title 24) minimum noise insulation performance standard of 45 dBA L_{dn} for all new residential construction including hotels, motels, dormitories, apartment houses, and single-family dwellings.*

The proposed General Plan Update policies and implementing actions, in combination with the mitigation measure described above, would reduce the potential impact associated with noise and land use compatibility to a less-than-significant level. (Less than Significant)

Impact NOISE-2: Development in accordance with the General Plan Update would increase vehicle traffic, resulting in increases in traffic noise that would be substantial in some areas. (Potentially Significant)

Increases in traffic noise gradually degrade the environment in areas sensitive to noise. According to CEQA, "a substantial increase" is necessary to cause a significant environmental impact. Typically, a change in noise level of less than 3 dBA is not discernable to the general population. Increases in average noise levels from to 3 to 5 dBA are clearly discernable to most people. An increase of 3 dBA L_{dn} or more is considered substantial in noise-sensitive areas along roadways analyzed in St. Helena.

Vehicular traffic on roadways in the city would increase as development occurs and the city's population increases. These projected increases in traffic would occur over time and would increase noise levels throughout the community. Traffic noise levels throughout St. Helena were projected for General Plan Update buildout in the year 2030 for the Likely Buildout scenario to determine how changes in vehicular traffic volumes would affect traffic noise levels. The relative increases in traffic noise along affected roadway segments are shown in Table 4.E-6.

TABLE 4.E-6
EXISTING AND FUTURE L_{dn} NOISE LEVELS ALONG MAJOR ROADWAYS

Roadway	Segment		Speed (mph)	Ldn at 100 Feet (dBA)		Change in Ldn (dBA)
	From	To		Existing	2030 General Plan Update	
Main St/SR 29	Deer Park Rd	Pratt Ave	45	69	71	2
	Fulton Ln	Adams St	35	67	68	1
	Pope St	Mills Ln	25	69	69	0
Silverado Trail	Pope St	Taplin Rd	55	69	69	0
	Pratt Ave	Pope St	55	69	69	0
Sulfur Springs Ave	Arrowhead Dr	Crane Ave	25	60	62	2
Pope St	Church St	Edwards St	25	63	63	0
	Paseo Grand Dr	Silverado Trail	25	64	63	-1
Spring St	Stockton St	Crane Ave	25	56	57	1
Adams St	SR 29	Railroad Ave	25	61	63	2
	Stockton St	Kearny St	25	61	63	2
Fulton Ln	SR 29	Railroad Ave	25	60	61	1
Madrona Ave	Spring Mountain Rd	Stockton St	25	62	62	0
Pratt Ave	Park St	Silverado Trail	25	58	59	1
Spring Mountain Rd	Elmhurst Ave	Madrona Ave	20	59	59	0
Oak Ave	Pine St	Adams St	25	61	63	2
Valley View St.	Spring St	Olive Ave	25	55	59	**4**
Crane Ave	Grayson Ave	Sulfur Springs Ave	25	55	55	0

* Substantial noise level increases in proximity to existing noise-sensitive uses (i.e., 3 dBA L_{dn} or greater) are indicated in **bold** font.

SOURCE: Illingworth & Rodkin, Inc., 2010.

Areas Subject to Traffic Noise Increases

Noise impacts resulting from buildout of the General Plan Update are assessed by comparing projected noise levels to existing conditions. Throughout most of St. Helena, noise levels are anticipated to increase by 0 to 1 dBA L_{dn} by the year 2030. Exceptions are along segments of Main Street/SR 29, Sulfur Springs Avenue, Adams Street, and Oak Street, where noise levels are expected to increase about 2 dBA L_{dn}. A review of the data presented in Table 4.E-6 shows that noise levels would increase by less than 3 dBA L_{dn} between 2010 and 2030 with buildout of the General Plan Update, except along a segment of Valley View Street between Spring Street and Olive Avenue.

Existing land uses located adjacent to the segment of Valley View Street between Spring Street and Olive Avenue are residential and are sensitive to

increased traffic noise. The noise environment in this area results predominantly from traffic noise along Valley View Street. The traffic noise level increase would be substantial, as noise levels are expected to increase by 4 dBA L_{dn}.

Potential Noise-Reducing Treatments

Existing residential receivers located along Valley View Street between Spring Street and Olive Avenue front the roadway with private outdoor use areas located behind the homes. Noise barriers would not be feasible at single-family residences that front the roadway due to access requirements.

Case studies have shown that the replacement of dense grade asphalt (standard type) with open-grade or rubberized asphalt can reduce traffic noise levels along local roadways by 2 to 3 dBA L_{dn}. A possible noise reduction of 2 dBA would be expected using conservative engineering assumptions, and the impact of future traffic noise increases could be mitigated to a less-than-significant level by repaving Valley View Street with "quieter pavements." To be a permanent mitigation, subsequent repaving would also have to use "quieter" pavements.

Traffic calming could also be implemented to reduce noise levels expected with the buildout of the General Plan Update. Each five-mile-per-hour reduction in average speed provides approximately one dBA of noise reduction on an average basis (L_{eq}/L_{dn}). Traffic calming measures that regulate speed improve the noise environment by smoothing out noise levels.

Residences could be provided with sound insulation treatments if further study finds that interior noise levels within the affected residential units would exceed 45 dBA L_{dn} as a result of the projected increase in traffic noise. Treatments to the homes may include the replacement of existing windows and doors with sound-rated windows and doors and the provision of a suitable form of forced-air mechanical ventilation to allow the occupants the option of controlling noise to by closing the windows. The specific treatments for each affected residential unit would need to be identified on a case-by-case basis.

Each of the measures described above involves other non-acoustical considerations. Other engineering issues may dictate continued use of dense grade asphalt. Sound insulation treatments must be installed on private property, necessitating agreements with each property owner.

Traffic Noise from Road Extensions

The General Plan Update also proposes the extension of several roadways. Roadway extensions are planned for Library Lane, Starr Avenue, Oak Avenue, and Adams Street. A roadway extension to Mills Lane, either from

College Avenue, Starr Avenue or Allison Avenue, as well as an extension to the Silverado Trail, either from Adams Street or Mills Lane, are planned options.

Implementing Action PS2.C would require an acoustical study to identify specific mitigation measures in order to mitigate noise from these planned roadway extensions. Implementing Action PS2.F would also require that noise attenuation techniques be included in the design of all new arterial streets. These actions would mitigate the noise impact resulting from planned roadway extensions to a less-than-significant level.

Need for Additional Measures

Implementing Actions PS2.C and PS2.F are specifically limited to new projects and do not address the substantial traffic noise increase expected to occur along Valley View Street between Spring Street and Olive Avenue. Therefore, an additional implementing action is recommended to ensure that permanent noise increases resulting from traffic noise are reduced to a less-than-significant level.

Mitigation Measures

Mitigation Measure NOISE-2: The following new implementing action shall be included in the Public Health, Safety and Noise Element of the General Plan Update:

- *Where significant traffic noise impacts on sensitive receptors are expected, reduce traffic noise levels through the installation of noise control measures including quiet pavement surfaces, noise barriers, traffic calming measures, and interior sound insulation treatments.*

The implementation of noise-reducing treatments specified by this implementing action could feasibly reduce the potentially significant traffic noise impact on housing located along Valley View Street between Spring Street and Olive Avenue to a less-than-significant level. (Less than Significant)

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4.F Aesthetics

Introduction

This section of the EIR focuses on significant visual features within the City of St. Helena. The impacts discussion describes how new development may affect such resources and also addressees the potential for new light and glare. Existing conditions are documented by the inclusion of photographs taken in areas where new land use change may occur.

Setting

St. Helena's small-town character is embodied in its distinctive architecture, tree-lined streets, and visually prominent vineyards.

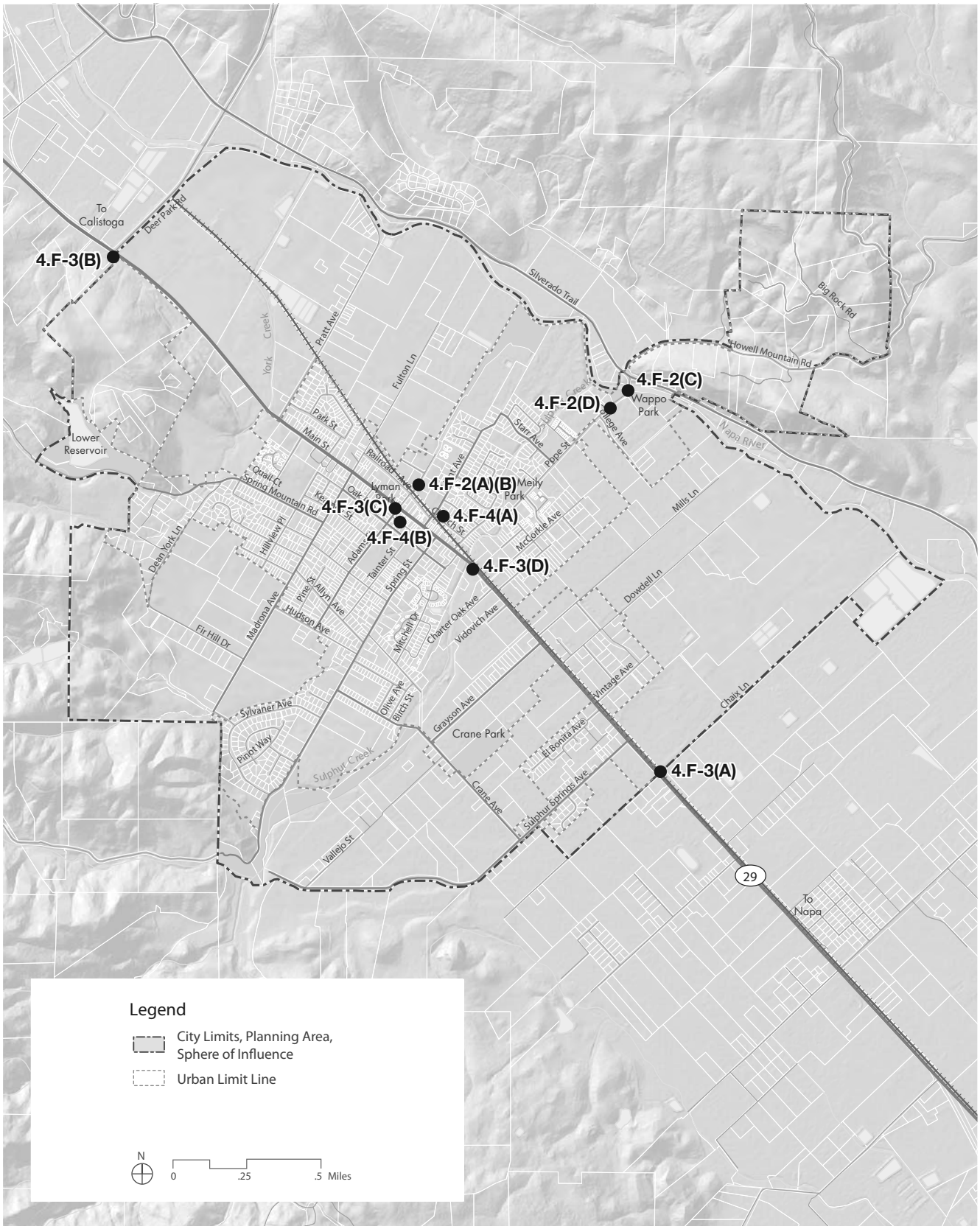
St. Helena's small-town character is embodied in its distinctive architecture, tree-lined streets, and the visually prominent vineyards visible at the city's entryways and interspersed within the city limits. The general ambience is also characterized by the many natural features that surround and adjoin residential and commercial areas such as Sulphur Creek, York Creek, the Napa River, and the oak and bay wooded hillsides found at the north end of St. Helena and the far eastern edge along Howell Mountain Road (east of the Napa River). Vineyards form one of the main visual amenities within the city, with their changing seasonal qualities, ranging from bare branches of winter to vibrant summer and fall color. The vineyards also provide view corridors to the hillsides west and east of the city center. Other open space amenities include the city's parks such as Jacob Melly Park, Crane Park, Lyman Park, and Wappo Park (undeveloped). Architectural elements of significant merit include the many historic buildings found along Main Street and throughout St. Helena.

Scenic Views

St. Helena is framed by the undeveloped, wooded foothills of the Mayacama and Vaca mountains on the west and east, respectively. These foothills are prominently visible from many locations in the flatland areas of the city, especially from east/west streets in the center of the city. Locations of key viewpoints within St. Helena are shown in Figure 4.F-1, and photos from these representative viewpoints are shown in Figures 4.F-2(A) through (D). As shown in Figure 4.F-2(B), Mount St. Helena, located north of the city, is visible from the center of town.

Entries and Corridors

The major highway entry into St. Helena from both the north and south is State Route (SR) 29 (see Figures 4.F-3[A] through [D]). Motorists and bicyclists using this corridor view large expanses of vineyards and various



Note: See Figure 4.F-2 through 4.F-4 for photographs.

SOURCE: ESA, 2010

St. Helena General Plan Update EIR . 210147

Figure 4.F-1
Location of Viewpoints

A - View of hills to west of town from Adams Street

B - View to north from Adams Street towards Mt. St. Helena

C - View of hills to east of town from Pope Street Bridge

D - View from Pope Street Bridge entrance to St. Helena

SOURCE: ESA

St. Helena General Plan Update EIR . 210147

Figure 4.F-2

Representative Views of St. Helena

A - View from SR 29 from south entrance to St. Helena

B - View from SR 29 from north entrance to St. Helena

C - View of central St. Helena from SR 29

D - View of south end of St. Helena from SR 29

SOURCE: ESA

St. Helena General Plan Update EIR . 210147

Figure 4.F-3

Views of St. Helena from State Route 29

wineries along the highway when entering from the south. From the north, wooded hillsides frame the view on the western side of the highway, and vineyards and level areas of open space frame the view on the eastern side. St. Helena is separated from Calistoga to the north and Yountville to the south by vineyards and undeveloped lands, allowing uninterrupted views along long stretches of SR 29 from both the north and south of the city.

State Route 29 is the major highway entry into St. Helena from both the north and south.

The City of St. Helena sits in a relatively narrow valley, framed by foothills to the east and west. Transportation corridors in this area are limited to SR 29, the Silverado Trail to the east of the center of town, and two-lane, east/west streets. The main road connection to the west is Spring Mountain Road. Where this two-lane, rural road enters the city at the northwest corner of St. Helena, one views low-density urban development.

From the east, visitors and residents enter St. Helena along Deer Park Road and Pope Street. Deer Park Road is at the far northern edge of the city and passes through large undeveloped areas and wide expanses of vineyards. Pope Street is lined by low-density residential development, Wappo Park and some large areas of open space and vineyards (see Figure 4.F-3[D]).

One highly visible element along many of the roadway corridors within St. Helena is the overhead electrical lines, which can create a sense of “visual clutter” within important viewsheds. As shown in Figure 4.F-3(B), the north entrance to the city includes such overhead lines. Electrical lines are also visible along the Wine Train railroad tracks, within alleys, and along many roadways where undergrounding of electrical lines has not occurred (see Figure 4.F-4).

Scenic Roads

Several roads in St. Helena have unique scenic qualities because of their natural setting as well as historical and cultural features.

Several roads in St. Helena have unique scenic qualities because of their natural setting as well as historical and cultural features. A scenic road is defined as a highway, road, drive, or street that, in addition to its transportation function, provides opportunities for the enjoyment of natural and human-made scenic resources. Scenic roads direct views to areas of exceptional beauty, natural resources or landmarks, or historic or cultural interest.

Downtown

Downtown St. Helena is a mixture of historic and newer buildings largely concentrated along Main Street. Street trees, wide sidewalks, and pedestrian features such as benches define this core area of the city. From Main Street, views to nearby natural features are generally screened by intervening buildings. Smaller side streets, such as along Adams Street and Hunt Avenue, also include commercial enterprises.

A - View of overhead electrical lines along railroad tracks east of Main Street

B - View of overhead electrical lines in alley west of Main Street

SOURCE: ESA

St. Helena General Plan Update EIR . 210147

Figure 4.F-4
Views of Electrical Lines

Open Space and Agriculture

The many vineyards within St. Helena provide an important visual amenity.

Open space areas and agricultural lands provide a variety of benefits, including visual enjoyment. The existing General Plan designates approximately 75 percent of the city as open space, agricultural land, woodlands/watershed, and parkland. Of this, about 48 percent is agricultural acreage. Much of the open space and agricultural acreage is located outside of the city's Urban Limit Line but within the city boundaries. The many vineyards within the City of St. Helena provide an important visual amenity, allowing uninterrupted views to nearby foothills and providing a dynamic visual feature which changes with each season. These vineyards are an important distinguishing feature of the city.

Regulatory Framework

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision as it pertains to housing, transportation, historic preservation, open space and other areas.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Design Review

Chapter 17.164 of the St. Helena Zoning Ordinance addresses requirements for design review. The stated purpose of this process is the following (City of St. Helena, 2010):

- To promote those qualities in the environment which bring value to the community;
- To foster the attractiveness and functional utility of the community as a place to live and work;
- To preserve the character and quality of our heritage by maintaining the integrity of those areas which have a discernible character or are of special historic significance;
- To protect certain public investments in the area;

- To encourage where appropriate, a mix of uses within permissible use zones; and
- To raise the level of community expectations for the quality of its environment.

Design review applies to any new development as well as the modification of the exterior of any structure. For example, after a Tentative Subdivision Map is approved, building plans for individual residential lots may be submitted. Each residential unit would undergo design review.

California Energy Commission Lighting Standards

In November 2003, the California Energy Commission adopted changes to Title 24 (Building Energy Efficiency Standards) regarding outdoor lighting. These new standards addressed both reduced energy consumption and reduced glare from outdoor lighting. The standards vary by "lighting zone." Zone 1 refers to parks, recreation areas, and wildlife preserves. Zone 2 refers to rural areas, and Zone 3 refers to urban areas. Lighting Zone 4 is a special use district that may be adopted by a local government where high ambient lighting is permissable. Local jurisdictions can designate special neighborhoods as a different lighting zone when appropriate. For example, a special commercial district may be designated Lighting Zone 3 in a rural area. St. Helena would be considered a rural area because it is not identified by the U.S. Census as an urban area.

California Scenic Highway Program

The State of California has a formal program related to scenic highways. The California Scenic Highway Program, established in 1963, identifies and designates certain highways along which adjoining land uses and features require special conservation treatment. The responsibility for the management of a program is left to local cities and counties. Highways shown as "eligible" for listing are believed to have outstanding scenic values. Once a highway is shown in "Streets and Highways Code Section 263" (which is the case for SR 29), it may be nominated for official designation by the local governing body with jurisdiction over the lands adjacent to the proposed scenic highway. A visual assessment is required and a number of other steps must be followed.

SR 29 through all of Napa County is shown as "eligible for designation as a scenic highway"; however, it has not been formally designated (California Department of Transportation, 2010). The existing St. Helena General Plan does not designate any St. Helena roadways as scenic roads.

Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the CEQA Guidelines, implementation of the proposed General Plan Update would have a significant effect on visual resources if it would:

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

Relevant Policies

The following relevant policies and implementing actions of the proposed General Plan Update address aesthetics and visual resources:

LU2.2. Encourage new residential development that is consistent in design, size, color and footprint with the older residences in the neighborhood.

LU2.3. Protect residential neighborhood views of surrounding vineyards and mountains.

LU2.7. Allow higher density housing in single family neighborhoods as long as the development character of the single family area is maintained, including lot widths, orientation to street and building heights, among others.

LU2.B. Develop and implement residential design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new residential development is consistent with the design, size and footprint of older residences in the neighborhood. Consider the impact of new development on surrounding residences, such as solar access. Explore opportunities to establish a neighborhood categorization system that allows for strict design standards in historic neighborhoods and more relaxed or creative standards in others. (Also see the following elements: Community Design, Topic Area 3; and Economic Sustainability, Topic Area 3)

LU2.C. Continue to implement viewshed review for residential development as part of a revised design review process.

LU2.E. Update zoning standards to encourage the following criteria:

- A variety of lot widths and sizes, such as that found in the older areas of town;
- Garages at the rear of lots rather than on the street;
- Lot coverage that is consistent with the scale of historic and older areas;
- Planting of street trees; and
- Setbacks, building massing and configuration consistent with older parts of town.

LU3.6. Continue to work with the County of Napa to review land use and design changes for projects in the unincorporated areas at the City's gateways.

LU3.11. Ensure that new commercial development maintains view corridors to the mountains.

LU4.3. Ensure that industrial projects are designed and sited to provide a positive image of the community. Landscaping and setbacks should be used to enhance industrial buildings.

LU4.B. Develop and implement industrial design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new industrial development is consistent with the City's character.

CD1.8. Require, to the extent feasible, that all new development include underground utilities to minimize their negative visual impact.

CD1.A. Explore the possibility of establishing a design review process for new development and remodels throughout the City. Create adequate tools, including design guidelines and/or form-based codes, to inform decision-making and ensure high-quality, sustainable design that is compatible with and enhances community character.

CD2.4. Ensure active and complete streets within commercial districts by providing sidewalk amenities, such as landscape buffers, berms, street trees, street furniture, outdoor dining, public art, signage and wayfinding.

CD2.5. Encourage property owners to improve façades and landscaping surrounding existing buildings through the implementation of beautification programs.

CD2.A. Develop and implement design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. (Also see the following elements: Land Use and Growth Management, Topic Area 3; and Economic Sustainability, Topic Area 3)

CD2.B. Require street tree plantings along the commercial streets east of Main Street to reflect Main Street's existing planting pattern, in order to provide visual continuity and to create a pleasant pedestrian environment.

CD2.C. Install attractive and well-designed community amenities such as public restrooms, drinking fountains, benches, bicycle racks and trash and recycling containers in commercial districts. Ensure that community amenities are designed and installed to complement surrounding businesses and support the pedestrian-orientation of the street.

CD2.D. Require businesses and structures to be of a small scale commensurate with existing older buildings in the CB and SC land use areas.

CD2.E. Adopt and implement façade and landscape beautification programs to provide assistance to owners of existing properties. Explore potential programs, such as commercial façade improvement programs and incentive programs.

CD3.3. Encourage the use of landscaping and tree plantings as buffers between sidewalks and residential uses. Discourage the removal of existing trees. Support the adoption of a more comprehensive tree ordinance.

CD3.4. Ensure safe bicycle and pedestrian-friendly character on all residential streets. Consider retrofitting existing wide residential streets, such as Starr Avenue, with landscaped medians, wide sidewalks and adjacent Class I pedestrian and bicycle trails.

CD3.A. Develop and implement residential design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. (Also see the Land Use and Growth Management Element, Topic Area 2)

CD3.B. Revise the ordinance language to limit lot coverage according to parcel size in residential areas in order to preserve neighborhood character, reduce adverse view and shade impacts on existing homes, improve groundwater infiltration, and avoid overbuilt conditions.

CD3.D. Encourage the design and location of parking to minimize its appearance on front façades, locating it to the side or rear of the building, where feasible.

CD3.C. Encourage property owners to install landscaping and tree plantings in front setbacks as a buffer between the sidewalk and residential uses.

CD3.D. Require new development to include landscaping and street trees.

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.

CD5.2. Use public streets or pathways to form the edge of developed areas, allowing views of open space from streets.

CD5.3. Ensure that key gateways into the City receive special, character-defining treatments and landscaping. Consider establishing landmark trees along the roads that serve as gateways to the City. New commercial development on Main Street south of the Sulphur Creek bridge should be carefully designed to provide an appropriate gateway in to the Downtown area.

CD5.A. Design and install a landscaping treatment for the northbound (State Route 29 from Chaix Lane north to Sulphur Creek) and westbound (from Silverado Trail west along Pope, and any future roadway segment from the Trail to downtown) gateways into the City. Consider a tunnel of trees similar to those located at the northern gateway.

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.

Impact Analysis

Less-than-Significant Impacts

The adoption of the proposed General Plan Update would not have substantial adverse effects on scenic vistas. Due to potential visual impacts of new development, General Plan Update policies seek to preserve remaining public views. Scenic vistas would be protected by the proposed policies, especially Policy LU3.11. New development that could occur in Key Housing Opportunity Sites, Change Areas, or Pipeline Projects would not be out-of-scale with surrounding development in terms of mass and height.

New development associated with the proposed General Plan Update would not substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway. As mentioned in the Regulatory Framework subsection above, no designated scenic highways currently pass through St. Helena. However, SR 29 has been identified by the California Scenic Highway Program as eligible for such designation. Policies LU3.6, CD5.3, and CD5.A would help to protect

SR 29 as it passes through St. Helena. (See further discussion in Impact AESTHETICS-3 below.)

New development would not substantially degrade the existing visual character and quality of the site or its surroundings because of the proposed General Plan Update policies and the fact that the City has a design review process in place. In addition, the City has an adopted sign ordinance (Municipal Code Chapter 17.148) that limits the size, type, and lighting of signs to minimize visual intrusion and clutter within the city. (The specific visual impact of electrical lines is addressed in Impact AESTHETICS-2 below.)

Areas of new growth are depicted in Figure 3-4 in Chapter 3, Project Description. These areas could undergo changes, especially where no development currently exists and open space/vineyard lands are located. However, the combination of the city's design review process and the fact that new development would occur within the city's Urban Limit Line and within close proximity to existing development would reduce any potential visual impacts to less-than-significant levels.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact AESTHETICS-1: New development that could occur with implementation of the proposed General Plan Update could create a new source of substantial light or glare that would adversely affect day or nighttime views in the area. (Potentially Significant)

The proposed General Plan Update does not include policies that specifically address light and glare. New development could result in increased light and glare within existing developed portions of the city. Such light and glare could affect residential areas as well as areas frequented by wildlife.

Mitigation Measure

Mitigation Measure AESTHETICS-1: The following new policy shall be added to the Community Design Element of the General Plan Update:

- *New development shall not result in significant light and glare that could affect residents, visitors, and wildlife. Lighting shall be shielded to reduce glare and shall be cast downwards. Outdoor new 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.*

With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level. (Less than Significant)

Impact AESTHETICS-2: New development could result in the extension of overhead electrical lines within the city and add to the existing "visual clutter" created by overhead electrical lines, thus degrading the visual quality of scenic areas within the city. (Potentially Significant)

As shown in **Figure 4.F-4**, existing overhead electrical lines detract from the visual quality of the city's visual environment, especially in the vicinity of open space areas and historic buildings and along important roadways. New development could require extensions of such overhead lines unless new lines were put underground, which is commonly done for larger subdivisions.

Mitigation Measure

Mitigation Measure AESTHETICS-2: The following new policy shall be added to the Community Design Element of the General Plan Update:

- *The City shall encourage the undergrounding of any new electrical lines required to serve new development. In addition, funding sources to underground existing electrical lines shall be sought so that undergrounding of existing overhead electrical lines can occur over time.*

With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level. (Less than Significant)

Impact AESTHETICS-3: While State Route 29 has not been formally designated as a Scenic Highway, the State of California has indicated that this route is eligible for such designation. Without a formal designation, new development along this important corridor of the city could affect visual conditions. (Potentially Significant)

State Route (SR) 29 is a crucial roadway corridor for the City of St. Helena, forming the main entrance from both the north and south. If SR 29 were formally designated as a Scenic Highway by the State of California, the City would have more authority to control the visual features of land uses visible from SR 29. For example, in California Environmental Quality Act (CEQA) documents prepared for projects in the vicinity of SR 29, a specific significance criterion would address visual impacts from scenic highways. This criterion relates to impacts on trees, rock outcroppings, and historic

buildings visible from a scenic highway. For this reason, the following new policy is recommended.

Mitigation Measure

Mitigation Measure AESTHETICS-3: The following new policy shall be added to the Community Design Element of the General Plan Update:

- *The City shall investigate the possibility of designating all or a portion of SR 29 that passes through the City of St. Helena as a Scenic Highway under the California Scenic Highway Program.*

With the inclusion of this new policy, this visual impact would be reduced to a less-than-significant level. (Less than Significant)

References – Aesthetics

California Department of Transportation. 2010. *Scenic Highway Guidelines*. Viewed May 20, 2010 at: http://www.dot.ca.gov/hq/LandArch/scenic/guidelines/scenic_hwy_guidelines.pdf

City of St. Helena. 2010. Municipal Code. Viewed May 20, 2010 at: http://www.codepublishing.com/CA/sthelena/

4.G Biological Resources

Introduction

This section of the EIR provides a summary of the biological resources in St. Helena and an assessment of the potential impacts of implementing the proposed General Plan Update. Biological resources were identified through the review of available information and reconnaissance surveys of the planning area. Considerable background information is available documenting biological and wetland resources in St. Helena, including the detailed inventory prepared as part of the *Natural Environment General Plan Update Working Paper* (2007). Other information sources reviewed included recent records of the California Natural Diversity Data Base (CNDDB) of the California Department of Fish and Game (CDFG), and recent environmental documents for specific development projects in the vicinity. Field reconnaissance surveys were conducted by the EIR biologist on November 11, 2009 and February 1, 2010 to confirm mapping of biotic communities, review wildlife habitat conditions and any important resources, and verify conclusions regarding presence or absence of any special-status species. No detailed surveys were conducted by the EIR biologist, and none are considered necessary given the broad planning-level analysis of this document. Further detailed surveys may be appropriate to confirm presence or absence of sensitive resources on future development sites, as recommended by implementation actions in the proposed General Plan Update.

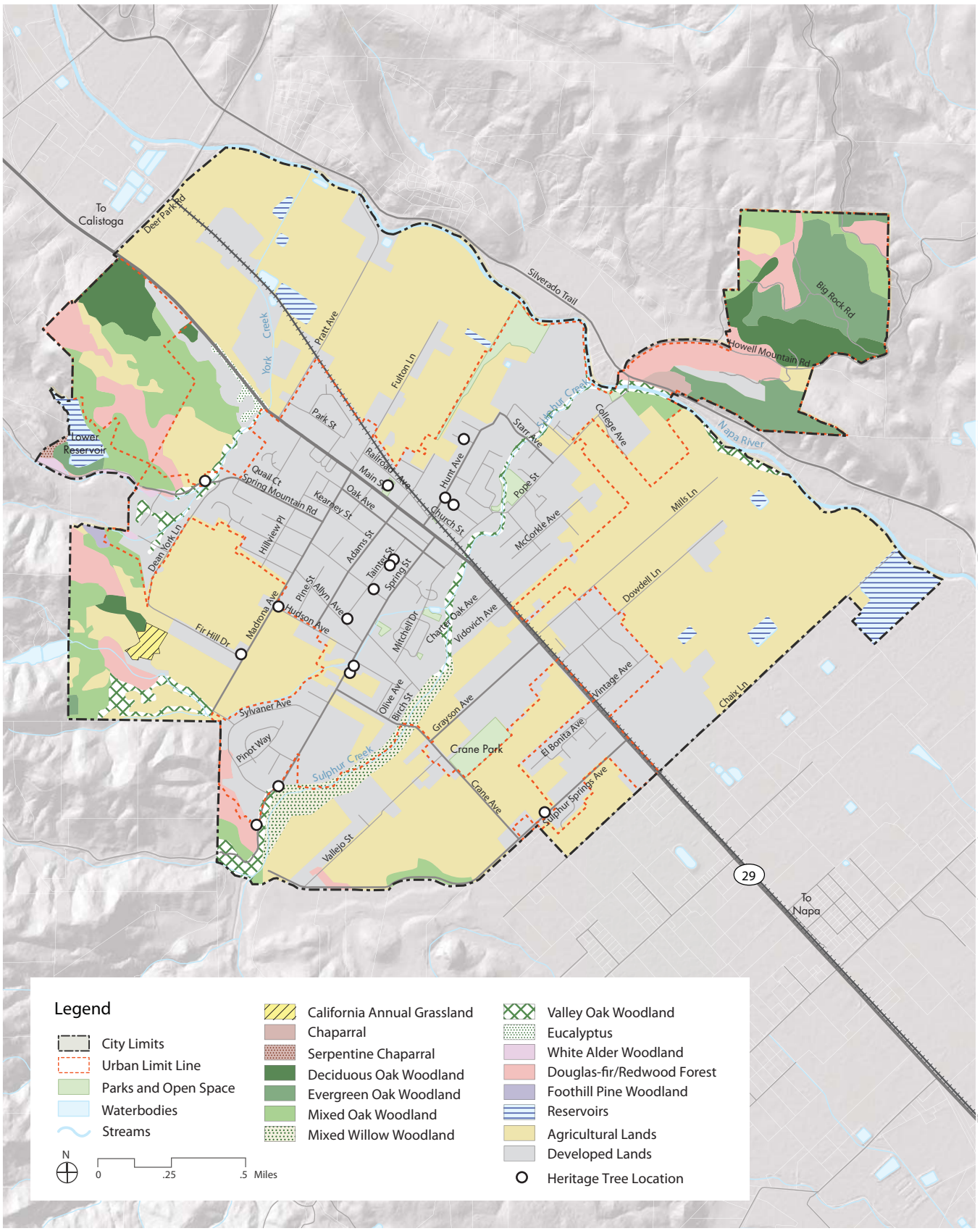
Setting

Biotic Communities

Urbanization and agricultural use limit the extent of native vegetation communities and wildlife habitats in St. Helena.

St. Helena is characterized by a mix of urban development and agricultural uses with some undeveloped wooded hillsides to the east and west of the city center and wooded hillsides interspersed with residential development to the west of the city center. The Napa River and a narrow band of associated riparian vegetation form a large portion of the eastern and northern boundary of the city limit. York Creek and Sulphur Creek flow from the hills west of the city, through the city and surrounding agricultural lands, and join the Napa River within the city limits (see Figure 4.G-1).

Urbanization and extensive agricultural use limit the extent of native vegetation communities and associated high-quality wildlife habitats within St. Helena. The remaining vegetation communities dominated by native plants occur within the undeveloped lands in the hillsides to the east and west of the city, and within the stream and river corridors traversing the valley floor. The value of an area to wildlife depends on a number of physical and



SOURCE: City of St. Helena; Napa County; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.G-1
Biotic Communities

biological factors, including the quality of the remaining habitat and extent of protective cover, location relative to other land uses, and the uniqueness of the habitat within a regional context.

Fifteen biotic communities have been mapped within St. Helena (see Figure 4.G-1). These consist of California annual grassland, chaparral, serpentine chaparral, deciduous oak woodlands, evergreen oak woodlands, mixed oak woodland, mixed willow woodland, valley oak woodland, eucalyptus woodland, white alder woodland, Douglas-fir/redwood forest, foothill pine woodland, agricultural lands, developed lands, and aquatic habitat. The distribution of these biotic communities was derived from the land cover mapping prepared for all of Napa County (County of Napa, 2005) based on the vegetation classification system outlined in *The Manual of California Vegetation* (CNPS, 1995).

Table 4.G-1 shows the acreages of the biotic communities within St. Helena and their relationship to the various component vegetation communities mapped by Napa County. The 15 biotic communities occurring within St. Helena are discussed in more detail below under the six general land cover-type headings: Grassland, Chaparral, Oak Woodland, Riparian Woodland, Coniferous Forest, and Aquatic Habitat. The discussion includes information on general vegetation and characteristic wildlife associated with each cover type.

Grassland

Grassland occupies approximately 51.1 acres in St. Helena.

Grassland occupies approximately 51.1 acres within St. Helena. The grassland is dominated by nonnative annual grasses such as wild oat (*Avena* spp.) species, brome (*Bromus* spp.) grasses, wild barley (*Hordeum* spp.) species, Italian ryegrass (*Lolium multiflorum*), medusa head (*Taeniantherum caput-medusae*), and annual fescue (*Vulpia*) species. Species composition of the annual grassland is highly diverse and in some locations includes native and nonnative forbs. Common forb species include many clover species (*Trifolium sp.*), filaree species (*Erodium* spp.), miniature lupine (*Lupinus bicolor*), Douglas's lupine (*Lupinus nanus*), slender cottonweed (*Micropus californicus* var. *californicus*), birdsfoot trefoil (*Lotus corniculatus*), evening snow (*Linanthus dichotomus*), California poppy (*Eschscholtzia californica*), purple owl's clover (*Castilleja densiflora*), valley tassels (*Castilleja attenuata*), blow wives (*Achyrachaena mollis*), buttercup (*Ranunculus spp.*), and smooth cat's ear (*Hypochaeris glabra*). Remnant native grasslands, although not mapped within St. Helena, are considered a sensitive natural community type by the CNDDB.

TABLE 4.G-1
BIOTIC COMMUNITIES AND ASSOCIATED LAND COVER TYPES MAPPED WITHIN ST. HELENA

Land Cover Type	Biotic Communities	Vegetation Community Names (Used in ICE Land Cover Map)[a]	Acres
Grassland	California annual grassland	California Annual Grasslands Alliance	51.1
		Upland Annual Grasslands & Forbs Formation	
Chaparral	Chaparral	Chamise Alliance	4.8
	Serpentine chaparral	Leather Oak – California Bay – Rhamnus spp. Mesic Serpentine NFD Alliance[b]	2.4
		Leather Oak – White Leaf Manzanita – Chamise Xeric Serpentine NFD Super Alliance	
Oak woodland	Deciduous oak woodland	Blue Oak Alliance	75.5
		Valley Oak Alliance	
	Evergreen oak woodland	Coast Live Oak Alliance	102.3
		Coast Live Oak – Blue Oak – (Foothill Pine) NFD Association	
		California Bay – Madrone – Coast Live Oak – (Black Oak Big – Leaf Maple) NFD Super Alliance	
	Mixed oak woodland	Mixed Oak Alliance	151.5
Riparian Woodland	Mixed willow woodland	Mixed Willow Super Alliance	37.0
	Valley oak woodland	Valley Oak – (California Bay – Coast Live Oak – Walnut – Ash) Riparian Forest NFD Association	89.7
	White alder woodland	White Alder (Mixed Willow – California Bay – Big Leaf Maple) Riparian Forest NFD Association	6.4
Coniferous Forest	Douglas-fir/redwood forest	Douglas-fir Alliance	125.9
	Foothill pine woodland	Foothill Pine Alliance	3.1
Aquatic	Streams and reservoirs	Water	53.8
Agricultural Cropland	Agricultural lands	Agriculture	1,311.9
Developed Lands	Developed lands	Urban or Built-Up	1,128.6
		Vacant	
Other	Nonnative woodland	Eucalyptus Alliance	5.9
Total			**3,150.0**

[a] "ICE Land Cover Map" was created by the University of California at Davis Information Center for the Environment (ICE). This map was prepared as a prototype to implement revisions to the vegetation classification system outlined in *Manuel of California Vegetation* (CNPS, 1995). Its production involved the first large-scale, detailed mapping effort for this new methodology that is being applied throughout California as the new standard for land cover mapping at a regional and local scale (Thorne et al., 2004).

[b] NFD" stands for "no formal description" of the identified community type as no formal description currently exists. NFD vegetation types were designed in the Napa County ICE Land Cover Map to be consistent with the *Manuel of California Vegetation*.

SOURCE: County of Napa, 2005; data compiled by EDAW in 2007.

Grasslands vary in productivity for wildlife depending on soil type, adjacent land use, and management regime. Different species of wildlife and plants benefit from different grazing intensities or mowing regimes, and frequencies of burning. Annual grasslands can be extremely productive wildlife habitats, providing abundant seed and insects as a food source for small mammals and birds, which in turn provide prey for numerous raptors and other predators. A variety of reptiles and mammals are characteristic of grassland habitats.

These include western fence lizard, common garter, gopher snake black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, western harvest mouse, California vole, and coyote. Common birds that breed in or near grassland habitats include western kingbird, loggerhead shrike, California horned lark, Savannah sparrow, western bluebird, Say's phoebe, and western meadowlark. Grasslands also provide important foraging habitat for a number of raptors, including golden, northern harrier American kestrel, white-tailed kite, red-tailed hawk, and wintering ferruginous.

Chaparral

Chaparral occupies approximately 7.2 acres in St. Helena.

Chaparral occupies approximately 7.2 acres within St. Helena, with alliances of both chamise chaparral and serpentine chaparral. Chamise chaparral is the most common chaparral type in Napa County, occurring on steep, dry, south- to southwest-trending slopes with thin soil. This chaparral type is usually dense and tall (up to 9 feet) with a closed canopy cover dominated by chamise (*Adenostoma fasciculatum*). Serpentine chaparral grows on infertile soils derived from serpentinite rock that have a unique mineral composition with high concentrations of iron and magnesium and low concentration of nutrients such as nitrogen and calcium. These harsh soils support a distinctive flora, including many endemic species (species that occur only on those soils). Dominant shrubs of serpentine chaparral typically include leather oak (*Quercus durata*), chamise, or white leaf manzanita (*Arctostaphylos viscida*). Species composition is related to aspect, mineral content, and soil moisture levels and the transition between chaparral types can be subtle. Mixed serpentine chaparral is considered a sensitive natural community by the CNDDB (CDFG, 2003; CDFG, 2009).

Many common wildlife species are primarily associated with chaparral, including reptiles such as western rattlesnake and California mountain kingsnake, mammals such as desert cottontail and Sonoma chipmunk, and birds such as wrentit, California thrasher, rufous-crowned sparrow, California quail, and sage. Most of these species are resident and are rarely found outside of this habitat type. Other species that occur in chaparral are also found in adjacent woodlands and other habitat types, including mammals such as ringtail, striped skunk, gray fox, black-tailed deer, bobcat, and mountain lion, as well as birds such as orange-crowned warbler, lazuli bunting, spotted towhee, and California towhee.

Oak Woodland

Three types of oak woodlands – deciduous oak woodland, evergreen oak woodland, and mixed oak woodland – occur within St. Helena, collectively occupying approximately 300 acres. Oak woodlands are dominated by a single or multiple species of oak tree, with an understory that varies widely. In the

Three types of oak woodlands – deciduous oak woodland, evergreen oak woodland, and mixed oak woodland – collectively occupy about 300 acres in St. Helena.

St. Helena vicinity, blue oak (*Quercus douglasii*), valley oak (*Quercus lobata*), and coast live oak (*Quercus agrifolia*) are the dominant tree species. Cover in the oak woodlands ranges from an open canopy with a dense understory of grasses and forbs to closed canopies with multiple species of trees as codominant. Although oak woodlands are considered to provide important habitat, particularly deciduous oak woodlands, only the valley oak woodlands in St. Helena are recognized as a sensitive natural community by the CNDDB (CDFG, 2003; CDFG, 2009).

Many wildlife species are associated with oak woodlands, including reptiles and amphibians such as western skink, ensatina, and California slender salamander; and birds such as Nuttall's woodpecker, warbling vireo, chestnut-backed chickadee, black-throated gray warbler, and black-headed grosbeak. Typical mammal species found in this habitat include those described for chaparral communities, with many grassland associated species found in the understory when grassland cover is present.

Riparian Woodland

Riparian woodland occupies approximately 133 acres in St. Helena.

Riparian woodland occupies approximately 133 acres within St. Helena. This habitat type occurs in corridors along the Napa River, Sulphur Creek, and York Creek. Three types of riparian woodland are present based on the dominant overstory tree species. White alder woodland is dominated by white alder (*Alnus rhombifolia*) and may include California bay (*Umbellularia californica*), Oregon ash (*Fraxinus latifolia*), and willows (*Salix* spp). The understory may include mulefat (*Baccharis salicifolia*), torrent sedge (*Carex nudata*), California polypody (*Polypodium californicum*), ninebark (*Physocarpus capitatus*), spicebush (*Calycanthus occidentalis*), California grape (*Vitis californica*), and brown dogwood (*Cornus glabrata*), among other species. Valley oak woodland is dominated by valley oak in the tree layer, with other large riparian trees, such as Fremont's cottonwood (*Populus fremontii*), sometimes present. The understory is similar to white alder woodland. Mixed willow woodland is characterized by mixed or pure stands of Pacific willow (*Salix lucida ssp. lasiandra*), red willow (*Salix laevigata*), black willow *(Salix gooddingi*), sandbar willow (*Salix exigua*), and/or arroyo willow (*Salix lasiolepis*). Mixed willow stands are typically smaller and grow in narrow bands along streams or on the edges of small lakes and reservoirs.

View of riparian vegetation along Napa River

Several wildlife species are primarily associated with this habitat, including amphibians such as Pacific tree frog and western toad; birds such as downy woodpecker, yellow warbler, and yellow-breasted chat; and wide-ranging mammals such as those described for chaparral and oak woodlands. Many bird species associated with oak woodland habitats are also found in riparian woodlands.

View of Sulphur Creek

Riparian woodland typically provides high-quality wildlife habitat because it provides shade and protective cover, a source of surface water and food, and nutrients for aquatic invertebrates. Coarse woody debris from riparian trees and shrubs is also an important feature of in-stream habitat, forming scour pools and logjams used by amphibians, insects, and fish. Riparian forests and woodland may be the most important habitat for California landbird species, providing breeding and over-wintering grounds, migration stopover areas, and movement corridors (Riparian Habitat Joint Venture, 2004). The quality of riparian wildlife habitat is enhanced by multilayered, structurally complex vegetation, including canopy trees and a shrub layer, and food sources such as berries and insects. Riparian woodlands are considered sensitive natural communities by the CNDDB (CDFG, 2003; CDFG, 2009).

Coniferous Forest

Two types of coniferous forest occupy approximately 129 acres in St. Helena.

Two coniferous forest types occupy approximately 129 acres within St. Helena. Douglas-fir/redwood forest occurs on the wooded slopes to the east and west of the city and is characterized by a dense cover of tall Douglas-fir (*Pseudotsuga menziesii*) and redwood (*Sequoia sempervirens*). Shrub associates include California hazel (*Corylus cornuta* var. *californica*), oceanspray (*Spirea douglasii*), creeping snowberry (Symphoricarpos mollis), poison oak (*Toxicodendron diversilobum*), ceanothus (*Ceanothus spp.*), California nutmeg (*Torreya californica*), woodland rose (*Rosa gymnocarpa*), thimbleberry (*Rubus parviflorus*), and manzanita (*Arctostaphylos spp.*). Foothill pine forest occurs on the serpentine derived soils around the Lower York Creek Reservoir and is characterized by an open tree cover of foothill pine (*Pinus sabiniana*) with a sparse shrub and herb understory.

Common wildlife species associated with Douglas-fir-redwood and foothill pine forests include reptiles such as ringnecked snake and rubber boa; birds such as hairy woodpecker, pileated woodpecker, Steller's jay, redbreasted nuthatch, pygmy nuthatch, brown creeper, yellow-rumped warbler, western tanager, and pine siskin; and mammals such as Trowbridge's shrew and western gray squirrel, which is also found in oak woodland. Wildlife productivity in Douglas-fir redwood forest, and in coniferous forest generally, depends in part on structural diversity of forest stands on the landscape scale. Habitat features such as snags, forest gaps, unfragmented forest interior habitat, and recently burned areas are important to maintaining a diversity of wildlife species in coniferous forests.

Aquatic Habitat

Primary aquatic habitats within St. Helena include the Napa River, Sulphur Creek, York Creek, Spring Creek, and the Lower York Creek Reservoir, and collectively they occupy about 54 acres of St. Helena. According to the Napa

Aquatic habitats – including the Napa River, Sulphur Creek, York Creek, Spring Creek, and the Lower York Creek Reservoir – occupy approximately 54 acres in St. Helena.

County baseline biological database report (County of Napa, 2005), the Napa River provides habitat for 22 native fish species, including species such as prickly sculpin, riffle sculpin, Sacramento sucker, and threespine stickleback. As discussed in more detail below, special-status fish species that occur in streams that traverse the St. Helena vicinity include steelhead and fall-run chinook salmon. Common nonnative fish species that would be found include striped bass, large and smallmouth bass, catfish, threadfin shad, yellowfin goby, and tule and shiner perch.

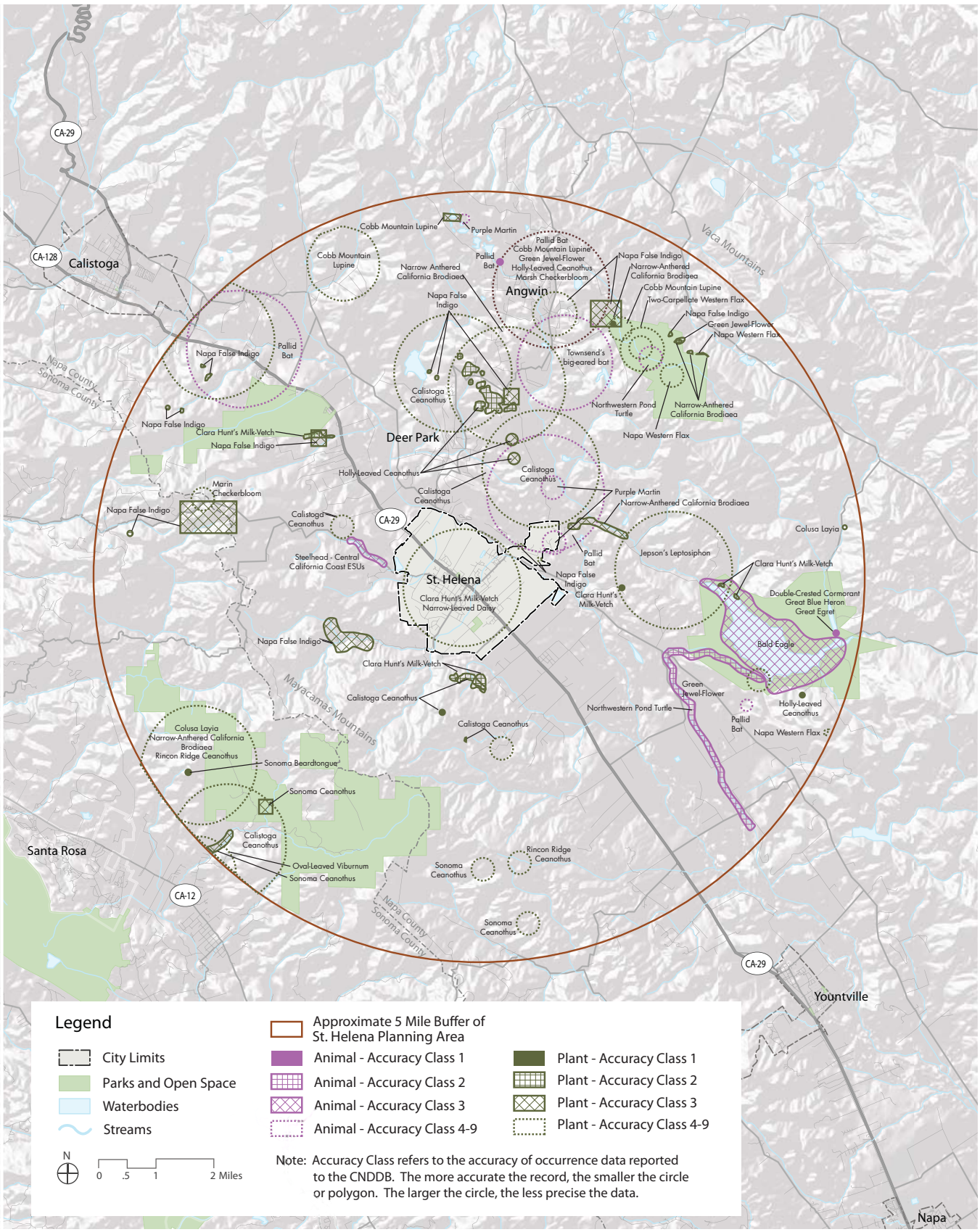
Sensitive Biological Resources

Sensitive biological resources are those identified as such by CDFG, the California Native Plant Society (CNPS), and the United States Fish and Wildlife Service (USFWS) and those given recognition in local or regional plans, policies, and regulations. The CNDDB (2010) was used as the primary source to identify previously reported occurrences of special-status species and sensitive habitats within a 5-mile radius of the city limits (see Figure 4.G-2). The CNDDB is a statewide inventory managed by CDFG that is continually updated with the locations and condition of the state's rare and declining species and habitats. Although the CNDDB is the most current and reliable tool for tracking occurrences of previously documented special-status species, it contains only those records that have been submitted to CDFG and is not always completely up-to-date. Thus, additional special-status species could be present that have not been discovered or reported, and additional occurrences that have already been reported may not yet have been entered into the database.

Special Status Species

Special-status species include plants and animals in the following categories:

- Species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA);
- Species considered as candidates for listing as threatened or endangered under the ESA or CESA;
- Wildlife species identified by CDFG as Species of Special Concern;
- Plants listed as endangered or rare under the California Native Plant Protection Act;
- Animals fully protected under the California Fish and Game Code; and
- Plants on CNPS List 1B (plants rare, threatened, or endangered in California and elsewhere) or List 2 (plants rare, threatened, or endangered in California but more common elsewhere). The CNPS lists are used by both CDFG and USFWS in their consideration of formal species protection under the ESA or CESA.



SOURCE: City of St. Helena; Napa County; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.G-2
Special-Status Species Occurrences

Special-Status Plants

Eighteen special-status plant species have been documented within a 5-mile radius of St. Helena.

Eighteen special-status plant species have been documented within a 5-mile radius of St. Helena (see Table 4.G-2). Locations of documented special-status plant occurrences within and near the city are shown in Figure 4.G-2. One species – Clara Hunt's milk-vetch (*Astragalus claranus*) – is federally listed as endangered and state-listed as threatened. The remaining 17 special-status plant species are tracked in the CNPS's *Electronic Inventory of Rare and Endangered Plants* (CNPS, 2001). The CNPS Inventory includes five lists for categorizing plant species of concern, which are summarized below.

CNPS-Listed Plants

The plants listed on CNPS lists 1A, 1B, and 2 meet the definitions of Section 1901, Chapter 10 of the Native Plant Protection Act (NPPA) or Sections 2062 and 2067 (CESA) of the California Fish and Game Code and may qualify for state listing. Therefore, they are considered rare plants pursuant to Section 15380 of the CEQA Guidelines. CDFG recommends that they be fully considered during preparation of environmental documents pursuant to CEQA. Some of the plants constituting CNPS Lists 3 and 4 meet the definitions of Section 1901, Chapter 10 or Sections 2062 and 2067 of the California Fish and Game Code and are eligible for state listing. CDFG recommends, and some local governments require, that CNPS List 3 and List 4 plants be evaluated for consideration during preparation of environmental documents relating to CEQA. The CNPS lists are categorized as follows:

- List 1A – Plants presumed extinct in California
- List 1B – Plants rare, threatened, or endangered in California and elsewhere
- List 2 – Plants rare, threatened, or endangered in California but more common elsewhere
- List 3 – Plants about which we need more information - a review list
- List 4 – Plants of limited distribution - a watch list

Clara Hunt's Milk-Vetch

Clara Hunt's milk-vetch (*Astragalus claranus*) is federally listed as endangered, state-listed as threatened, and on CNPS List 1B. Clara Hunt's milk-vetch is an annual herb in the Pea family (*Fabaceae*). It occurs in chaparral, cismontane woodland, valley and foothill grassland, often in open grassy hillsides with serpentinite or volcanic substrates, between 245 and 900 feet elevation. The species blooms March through May (CNPS, 2001, electronic edition). Documented occurrences in the vicinity of St. Helena are present on private property just outside the city limits to the south and on public property to the east (CNDDB, 2010). Potential suitable habitat is present within St. Helena with serpentine soils around the Lower York Creek Reservoir.

TABLE 4.G-2
SPECIAL-STATUS PLANT SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN ST. HELENA

Species	Status*			Habitat	Flowering Period
	Fed	State	CNPS		
Clara Hunt's milk-vetch *Astragalus claranus*	E	T	1B	Found in serpentine grassland and open grassy areas in oak woodland, on thin volcanic or serpentinite soils from 330 to 500 feet elevation.	March to May
Napa false indigo *Amorpha californica* var. *napensis*	–	–	1B	Found in broadleaf upland forest (openings), chaparral, and cismontane woodland from 450 to 6,250 feet elevation.	April to July
Narrow-anthered California brodiaea *Brodiaea californica* var. *leptandra*	–	–	1B	Found in broadleaf upland forest, chaparral, and lower montane coniferous forest; often on serpentine soils from 300 to 3,000 feet elevation.	May to July
Rincon Ridge ceanothus *Ceanothus confusus*	–	–	1B	Found in chaparral, on volcanic or serpentine substrates from 420 to 3,550 feet elevation.	February to June
Calistoga ceanothus *Ceanothus divergens*	–	–	1B	Found in chaparral, on rocky volcanic or serpentine substrates from 550 to 3,150 feet elevation	February to March
Holly-leaf ceanothus *Ceanothus purpureus*	–	–	1B	Found in chaparral, on rocky volcanic substrates from 400 to 2,150 feet elevation.	February to June
Sonoma ceanothus *Ceanothus sonomensis*	–	–	1B	Found in chaparral on sandy, serpentine or volcanic soils from 700 to 2650 feet elevation.	February to April
Narrow-leaved daisy *Erigeron angustatus*	–	–	1B	Found in chaparral, on volcanic or serpentine substrates from 260 to 1,000 feet elevation.	May to September
Two-carpellate western flax *Hesperolinon bicarpellatum*	–	–	1B	Found in chaparral, on volcanic or serpentine substrates from 260 to 1,000 feet elevation.	May to July
Napa western flax *Hesperolinon* sp. nov. "*serpentinum*"	–	–	1B	Found in chaparral, on volcanic or serpentine substrates from 260 to 1,000 feet elevation.	May to July
Colusa layia *Layia septentrionalis*	–	–	1B	Found in sandy or serpentine soils in grasslands and openings in chaparral and foothills woodlands from 300 to 3,600 feet elevation.	April to May
Jepson's leptosiphon *Leptosiphon jepsonii*	–	–	1B	Found on grassy slopes, on volcanics or periphery of serpentine soils from 300 to 1,650 feet elevation.	March to May
Cobb Mountain lupine *Lupinus sericatus*	–	–	1B	Found on open wooded slopes in gravelly soils in knobcone pine-oak woodland and chaparral from 900 to 5,000 feet elevation.	March to June
Marin checkerbloom *Sidalcea hickmanii* ssp. *viridis*	–	–	1B	Found in chaparral, on volcanic or serpentine substrates from 260 to 1,400 feet elevation.	May to June
Marsh checkerbloom *Sidalcea oregana* ssp. *hydrophila*	–	–	1B	Found in meadows and moist areas in perennial grassland and riparian forest from 3,000 to 6,000 feet elevation.	July to August
Sonoma beardtongue *Penstemon newberryi* var. *sonomensis*	–	–	1B	Found in rocky areas in chaparral from 2,300 to 4,500 feet elevation.	April to August

TABLE 4.G-2 (Continued)
SPECIAL-STATUS PLANT SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN ST. HELENA

Species	Status*			Habitat	Flowering Period
	Fed	State	CNPS		
Green jewel-flower *Streptanthus breweri* var. *hesperidis*	–	–	1B	Found in openings in chaparral and woodland on rocky, serpentine substrates from 400 to 2,500 feet elevation.	May to June
Oval-leaved viburnum *Viburnum ellipticum*	–	–	2	Found in chaparral and cismontane woodland from 650 to 4,500 feet elevation.	May to June

Status Definitions:

Federal Listing Categories (USFWS)

E = Endangered
T = Threatened

State Listing Categories (CDFG)

E = Endangered
T = Threatened
R = Rare

CNPS Categories from Inventory

1A Plant species presumed extinct in California.
1B Plant species considered rare or endangered in California and elsewhere (but not legally protected under the ESA or CESA)
2 Plant species considered rare or endangered in California but more common elsewhere (but not legally protected under the ESA or CESA)
3 Need more information about this plant (review list)
4 Limited distribution (watch list)

USFWS: United States Fish and Wildlife Service; CDFG: California Department of Fish and Game; CNPS: California Native Plant Society

SOURCE: County of Napa, 2005; data compiled by EDAW in 2007, updated in 2010.

Special-Status Animals

Seventeen special-status animal species are known to occur within a 5-mile radius of St. Helena.

Seventeen special-status animal species are known to occur within a 5-mile radius of St. Helena (see Table 4.G-3). Of these, six are federally or state-listed as threatened or endangered:

- Valley elderberry longhorn beetle,
- California freshwater shrimp,
- Central California Coast steelhead, evolutionarily significant unit (ESU),
- Central Valley fall/late fall-run chinook salmon ESU,
- California red-legged frog, and
- Northern spotted owl.

The remaining 11 species are considered federal candidate species for listing by the USFWS and/or California Species of Special Concern by CDFG. Locations of documented occurrences of special-status animal species within 5 miles of St. Helena are shown in Figure 4.G-2. Table 4.G-3 lists status and habitat requirements for each of these species.

California Freshwater Shrimp

California freshwater shrimp is federally and state-listed as endangered.

California freshwater shrimp (*Syncaris pacifica*) is federally and state-listed as endangered. It is a small, 10-legged crustacean occurring in low-elevation and gradient (less than 1 percent) perennial streams in Marin, Sonoma, and Napa counties. The species occurs in shallow pools away from the main current where they feed primarily on detritus and, to a lesser extent, on decomposing vegetation, dead fish, and invertebrates. Most shrimp appear opaque to nearly transparent with colored flecks across their bodies. Females can appear dark brown to purple under certain conditions. Breeding occurs in the autumn, but young do not hatch until the following May or early June. After breeding, female shrimp carry the fertilized eggs attached to their abdominal swimming legs throughout the winter. The freshwater shrimp has been extirpated from many streams and continues to be threatened by introduced predators, pollution, and habitat loss.

Historically, California freshwater shrimp were known to occur along the mainstem Napa River in the upper watershed (USFWS, 1998). Recent sightings are restricted to Garnett Creek, an upstream tributary to the Napa River (USFWS, 1998). Suitable habitat in the form of undercut banks, refuge habitat, and rootwads extending into the channel exists in portions of the Napa River, York Creek, and Sulphur Creek.

TABLE 4.G-3
SPECIAL-STATUS ANIMAL SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN ST. HELENA

Species	Status*		Habitat
	Fed	CDFG	
Invertebrates			
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	T		Closely associated with blue elderberry (*Sambucus mexicana* or *S. velutina*), which is an obligate host for beetle larvae. Adult valley elderberry longhorn beetles are usually found flying between elderberry plants.
California freshwater shrimp *Syncaris pacifica*	E	E	Inhabits pool areas of low elevation, low gradient, permanent streams; among live tree roots of undercut banks, under overhanging woody debris or vegetation.
Fish			
Central California Coast steelhead Distinct Population Segment *Oncorhynchus mykiss*	T, NOAA		Inhabits riparian, emergent, palustrine habitat. Spawning and rearing habitat is usually characterized by perennial streams with clear, cool to cold, fast-flowing water with a high dissolved-oxygen content and abundant gravels and riffles.
Chinook salmon, Central Valley fall/late fall-run evolutionarily significant unit *Oncorhynchus tshawytscha*	C, NOAA	CSC	Inhabits riparian, emergent, palustrine habitat. Spawning and rearing habitat is usually characterized by perennial streams with clear, cool to cold, fast-flowing water with a high dissolved-oxygen content and abundant gravels and riffles.
Amphibians			
California red-legged frog *Rana aurora draytonii*	T	CSC	Found in a variety of aquatic, riparian, and upland habitats, including ephemeral ponds, intermittent streams, seasonal wetlands, springs, seeps, permanent ponds, perennial creeks, manmade aquatic features, marshes, dune ponds, lagoons, riparian corridors, blackberry thickets, nonnative annual grasslands, and oak savannas.
Foothill yellow-legged frog *Rana boylii*		CSC	Found in middle to low elevations in perennial creeks and streams, usually with cobble bottoms.
Reptiles			
Northwestern pond turtle *Emys (=Clemmys) marmorata marmorata*		CSC	Uses permanent or nearly permanent water bodies in a variety of habitat types. Can be found in ponds, marshes, rivers, streams, and irrigation ditches within grasslands, woodlands, and open forests.
Birds			
Cooper's hawk *Accipiter cooperii*		CSC	Nests in a wide variety of habitat types, from riparian woodlands and digger pine-oak woodlands through mixed conifer forests.
Sharp-shinned hawk *Accipiter striatus*		CSC	Forages across a wide range of habitats and breeds in mixed forest and woodland habitats.
Northern harrier *Circus cyaneus*		CSC	Habitat types include brackish and freshwater marshes, alpine meadows, grasslands, prairies, and agricultural lands. Wintering habitat includes freshwater and saltwater wetlands, coastal dunes, grasslands, deserts, meadows, and croplands. Breeding habitat includes freshwater wetlands, coastal brackish wetlands, open wet meadows and grasslands, shrub-steppe, desert sinks, areas along rivers and lakes, and crop fields.

TABLE 4.G-3 (Continued)
SPECIAL-STATUS ANIMAL SPECIES KNOWN TO OCCUR OR POTENTIALLY OCCURRING IN ST. HELENA

Species	Status*		Habitat
	Fed	CDFG	
Birds (cont.)			
Yellow warbler *Dendroica petechia brewsteri*		CSC	Nests in riparian areas dominated by willows, cottonwoods, sycamores, or alders or in mature chaparral; may also use oaks, conifers, and urban areas near stream courses.
White-tailed kite *Elanus leucurus*		CSC	Forages and nests in trees and shrubs in grasslands and savannas.
Bald eagle *Haliaeetus leucocephalus*	D	FPS	Coastal and inland waterways including large-bodied rivers, lakes, and seashores.
Purple martin *Progne subis*		CSC	Nests in dense cattails and tules, riparian scrub, and other low dense vegetation; forages in grasslands and agricultural fields.
Northern spotted owl *Strix occidentalis caurina*	T	CSC	Dense old-growth or mature forests dominated by conifers with topped trees or oaks available for nesting crevices.
Mammals			
Pallid bat *Antrozous pallidus*		CSC	Occurs in a variety of habitats from desert to coniferous forest. Most closely associated with oak, yellow pine, redwood, and giant sequoia habitats in northern California and oak woodland, grassland, and desert scrub in southern California. Relies heavily on trees for roosts.
Pacific Townsend's big-eared bat *Corynorhinus townsendii townsendii*		CSC	Roosts in caves, tunnels, mines, and dark attics of abandoned buildings. Very sensitive to disturbances and may abandon a roost after one on-site visit.

Status Definitions:

Federal Listing Categories (USFWS/NOAA Fisheries)

E Endangered
T Threatened
C Candidate
D Delisted
X Critical Habitat is designated for this species by USFWS
NOAA Species under jurisdiction of the NOAA Fisheries

State Listing Categories (CDFG)

E Endangered
T Threatened
CSC Species of special concern
FPS Fully protected species

USFWS: United States Fish and Wildlife Service; NOAA: National Oceanic and Atmospheric Administration; CDFG: California Department of Fish and Game

SOURCE: CNDDB, 2010

Valley Elderberry Longhorn Beetle

Valley elderberry longhorn beetle is federally listed as threatened.

Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*) is federally listed as threatened. It is patchily distributed throughout the remaining riparian forests of the Central Valley from Redding to Bakersfield. The beetle appears to be only locally common (i.e., found in population clusters that are not evenly distributed across the Central Valley). Extensive loss of California's Central Valley riparian forests has occurred since 1900, declining by 80 to 96 percent depending on the region (USFWS, 2006). Although wide-ranging, the valley elderberry longhorn beetle is thought to have suffered a long-term decline because of human activities that have resulted in widespread alteration and fragmentation of riparian habitats and, to a lesser extent, upland habitats that support the beetle. Low density and limited dispersal capability may cause the beetle to be particularly vulnerable to population isolation as a result of habitat fragmentation. Insecticide and herbicide use in agricultural areas and along road rights-of-way may be factors limiting the beetle's distribution. The age and quality of individual elderberry shrubs/trees and stands as a food plant for beetle may be a factor in its limited distribution.

The USFWS released a 5-year status review for valley elderberry longhorn beetle on October 2, 2006 (USFWS, 2006). This review reported an increase in known beetle locations from 10 at the time of listing in 1980 to 190 in 2006. Because of this observed population increase and the concurrent protection and restoration of several thousand acres of riparian habitat suitable for valley elderberry longhorn beetles, the USFWS status review determined that this species is no longer in danger of extinction and recommended that the species no longer be listed under the ESA. This recommendation is not a guarantee that the species will be delisted, however, because formal changes in the classification of listed species require a separate USFWS rulemaking process distinct from the 5-year review.

California Red-Legged Frog

California red-legged frog is federally listed as threatened and is a California Species of Special Concern.

California red-legged frog (*Rana aurora draytonii*) was listed as threatened on May 23, 1996, by the USFWS and is listed as a California Species of Special Concern by CDFG. Critical habitat was designated for this species on April 13, 2006. Current critical habitat designations do not include the York Creek watershed. California red-legged frog is most common in marshes, streams, lakes, reservoirs, ponds, and other water sources with plant cover. Breeding occurs in deep, slow moving waters with dense, shrubby, or emergent vegetation. Breeding generally occurs from late November through April. Egg masses are attached to emergent vegetation (i.e., *Typha sp.* or *Scirpus sp.*) near the water's surface. Tadpoles require 3.5 to 7 months to

attain metamorphosis. Adults take invertebrates and small vertebrates. Larvae are thought to be algal grazers.

Foothill Yellow-Legged Frog

Foothill yellow-legged frog is a California Species of Special Concern.

Foothill yellow-legged frog (*Rana boylii*) is a CDFG-designated Species of Special Concern. Currently, this species occurs from southern Oregon south to the Salinas River in Monterey County, California, and in isolated patches in the Cascade and Sierra Nevada foothills. The foothill yellow-legged frog is found in or near partly shaded rocky streams from near sea level to 6,300 feet in a variety of habitats. Breeding generally occurs from mid-March to early June after high winter flows have subsided. Egg masses are attached to the downstream side of rocks and gravel in shallow, slow, or moderate-sized streams. Tadpoles require 3 to 4 months to attain metamorphosis. Adults take aquatic and terrestrial invertebrates, and tadpoles graze along rocky stream bottoms on algae and diatoms. During all seasons, this species is generally found in or within close proximity to streams.

Northwestern Pond Turtle

Northwestern pond turtle is a California Species of Special Concern.

Northwestern pond turtle (*Actinemys marmorata marmorata*) is a CDFG-designated Species of Special Concern. It is one of two subspecies of the western pond turtle, along with the southwestern pond turtle (*A. m. palida*), which is also a Species of Special Concern. The western pond turtle is found in suitable aquatic habitats west of the crest of the Sierra Nevada in California and in parts of Oregon, Washington, and Mexico. The northwestern subspecies is generally found from San Francisco Bay north to the Columbia River drainage in Oregon and Washington. Northwestern pond turtle still occupies most of its historic range but many local populations are declining or have been extirpated. These declines are primarily a result of loss of wetland habitats to agricultural and urban uses and flood control and water diversion projects. Northwestern pond turtle is generally associated with permanent or nearly permanent wetlands in a wide variety of environments below an elevation of 6,000 feet (CDFG, 1988). The species lives in quiet waters of lowland ponds, marshes, lakes, and reservoirs and in streams with deep pools, rocks, logs, and streamside vegetation that provide escape cover and basking sites (Stebbins, 1972). Northwestern pond turtles are highly aquatic but leave the water to bask and lay eggs. They may lay their eggs along sandy wetland margins or at upland locations as far as 1,300 feet from water (Holland and Bury, 1992).

Bald Eagle

Bald eagle (*Haliaeetus leucocephalus*), formerly federally listed as threatened, was removed from the federal list of threatened and endangered species on June 28, 2007. Bald eagle is still state-listed as endangered and is

Bald eagle is state-listed as endangered and is protected by the federal Bald and Golden Eagle Protection Act.

protected by the federal Bald and Golden Eagle Protection Act (16 USC 668). Historically, it nested throughout California; however, the current bald eagle nesting population is restricted primarily to mountainous habitats in the northern Sierra Nevada, Cascade Range, and northern portion of the Coast Ranges (CDFG, 2005a). Recently, bald eagles have nested in southern California, in the central portion of the Coast Ranges, and on Santa Catalina Island. They winter at lakes and reservoirs and along river systems throughout most of central and northern California and in a few southern California localities (CDFG, 2005a). The nesting population of bald eagles in California is increasing in numbers and range, and the wintering population appears stable. Past declines in bald eagle populations have been attributed to the agricultural pesticide dichlorodiphenyltrichloroethane (DDT), harassment by humans, and destruction of riparian, wetland, and coniferous forest habitats.

Bald eagle nesting territories in California are found primarily in ponderosa pine and mixed conifer forests. Bald eagle nest sites are always associated with a lake, river, or other large water body that supports abundant fish or waterfowl as prey. Bald eagles winter along rivers, lakes, and reservoirs that support abundant fish or waterfowl and have large trees or snags for perch sites. They often roost communally during winter in areas isolated from human disturbance.

Northern Spotted Owl

Northern spotted owl is federally listed as threatened.

Northern spotted owl (*Strix occidentalis caurina*) was listed as threatened on June 26, 1990, by the USFWS. Critical habitat was designated for this species on January 15, 1992, but this designated habitat currently does not include Napa County.

Northern spotted owl is an uncommon permanent resident of dense forest habitats in northern California and oak and oak-conifer habitats in southern California. This nocturnal species requires dense, multilayered canopy cover for roosting sites. Spotted owls feed upon a variety of small mammals, birds, and large arthropods. Nest sites include tree or snag cavities or broken tops of large trees. The typical breeding period lasts from early March through June, with owls rearing two young per season. A pair of owls may use the same breeding site for 5 to 10 years; however, they may not breed every year. The spotted owl has experienced a population decline because of the loss and degradation of existing mature and old growth forests. They are a year-round resident of Napa County and are known to occur within the upper York Creek watershed (Berner et. al., 2003).

Additional Special-Status Raptors

Other special-status raptors that could occur in St. Helena include white-tailed kite, Cooper's hawk, sharp-shinned hawk, and northern harrier.

Other special-status raptors that could occur within St. Helena include white-tailed kite (*Elanus leucuru*), Cooper's hawk (*Accipiter cooperi*), sharp-shinned hawk (*Accipiter striatus*), and northern harrier (*Circus cyaneus*). Cooper's hawk, sharp-shinned hawk, and northern harrier are a CDFG Species of Special Concern and white-tailed kite is a species designated by CDFG as fully protected. All of these raptors are also protected under Section 3503.5 of the California Fish and Game Code, along with more common raptor species such as red-tailed hawk (*Buteo jamaicensis*) and great-horned owl (*Bubo virginianus*). Cooper's hawk and sharp-shinned hawk tend to be associated with riparian woodlands. Annual grassland and the open understory of oak woodland and conifer forests provide suitable foraging habitat for most of the raptors found within the planning area. Suitable nesting habitat varies depending on species, with most raptors preferring to nest in woodlands and mature trees.

Purple Martin

Purple martin is a California Species of Special Concern.

Purple martin (*Progne subis*) is a CDFG-designated Species of Special Concern. The purple martin is a member of the swallow family (*Apodidae*) that frequents riparian and oak woodlands and coniferous and montane forests at upper elevations. They forage over open land and water. Purple martins are cavity nesters and will use primarily natural holes or crevices. Average clutch size is four to five eggs. Breeding occurs from April into August with peak activity in June. Purple martins are an uncommon migrant and a breeding resident in Napa County.

Yellow Warbler

Yellow warbler is a California Species of Special Concern.

Yellow warbler (*Dendroica petechia brewsteri*) is a CDFG-designated Species of Special Concern. Yellow warbler is a neotropical migrant songbird that breeds throughout North America. It typically occupies riparian woodlands, montane chaparral, and pine forests. Yellow warbler forage primarily for insects and spiders but will also feed on fruit. Breeding occurs from mid-April into early August. Nesting sites include shrubs and saplings from 2 to 12 feet in height, and the average clutch size is three to six eggs. Yellow warbler is a common summer resident in Napa County; however, they have disappeared in recent years from a number of locations within the Napa Valley.

Pallid Bat

Pallid bat is a California Species of Special Concern.

Pallid bat (*Antrozous pallidus*) is a CDFG-designated Species of Special Concern. It occupies grassland, shrubland, woodland, and forest habitats at low elevations in California. Pallid bats can most commonly be found in open, dry habitats with suitable rocky areas for roosting. This species can

also be found roosting in caves, crevices, mines, hollow trees, and abandoned buildings during the day. Night roosts generally consist of more open areas such as porches and open buildings. This species feeds chiefly on a variety of arachnids and insects. Pallid bat is a year-round resident throughout most of its range. During the nonbreeding season, both sexes may be found roosting in groups of 20 or more individuals. Young are born from April to July. As with many bat species, pallid bat is extremely sensitive to roosting site disturbance.

Townsend's Western Big-Eared Bat

The Townsend's western big-eared bat is a California Species of Special Concern.

The Townsend's western big-eared bat (*Corynorhinus townsendii townsendii*) is a CDFG-designated Species of Special Concern. They are found throughout much of California, with the exception of subalpine and alpine communities, most commonly in mesic habitats. This species is most active in late evening when they can be found foraging for small moths, beetles, and other soft-bodied insects. Roosting, maternity, and hibernacula sites include limestone caves, lava tubes, mines, tunnels, or abandoned buildings. Hibernation generally occurs from October to April, and young are born from May to June, peaking in late May. This species is extremely sensitive to disturbance at roosting sites. Populations of big-eared bats have declined precipitously in California.

Central California Coast Steelhead

Central California Coast steelhead is federally listed as threatened.

Six distinct population segments (DPS) of steelhead (*Oncorhynchus mykiss*) exist within California, including the Central California Coast (CCC) DPS. The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries) listed CCC steelhead as a threatened species on August 18, 1997, and its threatened status was reaffirmed on January 5, 2006. This population occurs downstream of natural and human-made impassable barriers in California streams from the Russian River to Aptos Creek, and the drainages of San Francisco, San Pablo, and Suisun Bays, excluding the Sacramento–San Joaquin River Basin, and also includes two propagated stocks.

Critical habitat for CCC steelhead was designated on September 2, 2005 and includes the Napa River and its tributaries (including York Creek). Historically, York Creek had a steelhead run and rainbow/steelhead persist in the drainage today, although levee construction, road building, and channel modifications in the portions that run through the city have created problems for fish passage. Based on habitat data collected as part of the Central Napa River Watershed Plan by Napa County Resource Conservation District (RCD), York Creek has been identified as one of the most significant spawning and rearing streams for steelhead within the Napa Basin (CDFG, 2005b).

Steelhead are anadromous salmonids, meaning they spawn in freshwater and mature in the ocean. Adults spend 1 to 4 years at sea before returning to their natal streams to spawn. Unlike other salmonids, steelhead may spawn as many as four times. Adult steelhead spawn from December through April in cool, clear, well-oxygenated streams with pea to apple-sized gravel (1.3 to 11.7 centimeters). Eggs are deposited in a depression called a redd, usually at the head of riffle. Eggs hatch between 19 and 80 days, depending on stream temperatures. Alevins, newly hatched fish, remain in the gravel for 2 to 3 weeks until their yolk sac is absorbed. They then emerge from the gravel as fry. The young fish remain in edgewater habitats often in small schools. As they grow larger, they move out into the stream channel into pool and riffle habitats. Juveniles require cool stream flows to transport drifting insects for feeding and cover in the form of undercut banks, woody debris, boulders, and deep pools to escape predation and high flows. After spending up to 2 years in freshwater, steelhead migrate downstream to the ocean as smolts. Steelhead that remain in freshwater streams are called rainbow trout. Unlike steelhead, rainbow trout are not protected under the federal Endangered Species Act. Environmental requirements for steelhead vary by season and life stage. Optimal water temperatures for steelhead range from 10 to 15°C, with an upper lethal limit of 20°C. Rearing salmonids require a high level of dissolved oxygen, at least 80 percent, with a minimum temporary reduction no lower than 5.0 milligrams per liter (mg/l). Deposited and suspended sediment plays a significant role in steelhead's ability to successfully spawn and rear. Optimal upstream migration water velocities range from 40 to 90 centimeters per second and a minimum stream depth of 13 centimeters.

Chinook Salmon

Central Valley fall/late fall-run Chinook salmon is a federal Species of Concern.

Chinook salmon is an anadromous fish species that requires cold, freshwater streams with suitable gravel for reproduction. After spending 2 to 4 years maturing in the ocean, Chinook salmon return to their natal streams to spawn by depositing their eggs in gravel nests called redds (Moyle, 2002). Eggs generally hatch in 6 to 12 weeks, and newly emerged larvae remain in the gravel for another 2 to 4 weeks until the yolk is absorbed. Juveniles typically rear in freshwater for up to 5 months before migrating to sea. Unlike steelhead, adult chinook salmon die after spawning (Moyle, 2002).

Central Valley fall/late fall-run Chinook salmon ESU is a federal Species of Concern. Fall-run Chinook salmon is the most widely distributed and most numerous run occurring in the Sacramento and San Joaquin rivers and their tributaries (Moyle, 2002). Fall-run Chinook salmon have been observed in the Napa River upstream of St. Helena to the base of the Kimball Canyon Dam north of Calistoga. Fall chinook salmon returns to the Napa River are thought to be small and sporadic, with only occasional observations of spawning primarily between Zinfandel Lane, slightly downstream of

St. Helena, and the City of Calistoga. NOAA Fisheries believes that these populations are not self-sustaining, likely consist of strays from other basins, and are more likely present only on an intermittent basis during favorable periods.

Sensitive Natural Communities

Sensitive natural communities in St. Helena include the serpentine chaparral around York Creek Reservoir, the riparian woodland vegetation along rivers and creeks, and valley oak woodlands mapped along Sulphur Creek, York Creek, and the lower hillsides west of the valley floor.

Sensitive natural communities are those protected by or of special concern to federal, state, or local resource conservation agencies and organizations. CDFG and CNPS both have programs that identify and track rare and/or diminishing native plant communities within California. Although some of these communities represent important biological resources and may be unique to California, they may have no legal or protected status under the California and/or federal Endangered Species Acts. Regardless, substantial losses of some of these plant communities may be considered significant under CEQA.

Sensitive natural communities present within St. Helena include the serpentine chaparral around York Creek Reservoir, the riparian woodland vegetation along the rivers and creeks traversing the valley floor, and valley oak woodlands mapped along Sulphur Creek, York Creek, and the lower hillsides west of the valley floor. Native grasslands may also be present in the remaining grasslands in the planning area, particularly where serpentine substrate is present, and would also be considered a sensitive natural community type, although none have been mapped within St. Helena according to the CNDDB records.

Wildlife Corridors

A wildlife corridor can be defined as a linear landscape feature (such as a ridge or valley), allowing animal movement between two patches of habitat. Wildlife corridors can be regional or local in nature, and may be identified as functional for some species but insufficient for others.

Wildlife corridors play an important role in preserving species diversity. In the absence of corridors, habitats become isolated islands surrounded by development. Fragmented habitats support significantly lower numbers of species and increase the likelihood of extinction for species restricted to small areas. Connections between areas of open space are an integral part of maintaining biological diversity and population viability. Preserving connectivity is one of the most practical and effective measures to protect native biodiversity.

In St. Helena, the Napa River, York Creek, and Sulphur Creek are important wildlife corridors.

Corridors are frequently constrained by development through the loss of cover, increased noise, and the increased presence of domestic animals. However, even constrained corridors may increase in importance when alternative, preferred corridors are disturbed or eliminated. With the continued loss of native habitats throughout Napa County, existing and even constrained corridors have taken on a heightened significance. Within St. Helena, the Napa River, York Creek, and Sulphur Creek riparian corridors function as important wildlife corridors.

Wetlands and Other Waters

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. As discussed further below under Regulatory Framework, technical standards for delineating wetlands have been developed by the U.S. Army Corps of Engineers (Corps) and the USFWS.

Jurisdictional waters within St. Helena include the Napa River, Sulphur Creek, and York Creek. Many of the “waterbodies” identified in Figure 4.G-1 are human-made reservoirs used for agricultural purposes and are most likely not regulated by jurisdictional agencies. There remains a possibility that regulated waters may also include smaller tributary ephemeral and intermittent drainages that occur within the largely undeveloped hillsides in the western and eastern edges of the planning area; channelized drainages on the valley floor; or seasonal wetland features, seeps, and springs. Further site assessment would be required to confirm the extent of jurisdictional waters on undeveloped land proposed for development or conversion to agricultural uses.

Regulatory Framework

Local, state, and federal regulations have been enacted to provide for the protection and management of sensitive biological and wetland resources. On the federal level, the U.S. Fish and Wildlife Service (USFWS) is responsible for protection of terrestrial and freshwater organisms through implementation of the federal Endangered Species Act [1] and the Migratory Bird Treaty Act. The National Marine Fisheries Service (NOAA Fisheries) is responsible for protection of anadromous fish and marine wildlife. The Corps has primary

[1] The federal Endangered Species Act (ESA) of 1973 declares that all federal departments and agencies shall use their authority to protect endangered and threatened plant and animal species. The California Endangered Species Act (CESA) of 1984 parallels the policies of the ESA and pertains to California species.

responsibility for protecting wetlands under Section 404 of the Clean Water Act. At the state level, the California Department of Fish and Game (CDFG) is responsible for administration of the California Endangered Species Act and for protection of streams and waterbodies through the Streambed Alteration Agreement process under Section 1600 of the California Fish and Game Code. Certification from the California Regional Water Quality Control Board (RWQCB) is also required when a proposed activity may result in discharge into navigable waters, pursuant to Section 401 of the Clean Water Act and EPA Section 404(b)(1) Guidelines. The RWQCB has also taken an increasingly important role in regulating waters no longer considered jurisdictional by the Corps due to recent federal Supreme Court rulings.

Special-Status Species Regulations

Special-status species are plants and animals that are legally protected under the California and/or federal Endangered Species Acts or other regulations, or other species considered rare enough to warrant special consideration.

Special-status species [2] are plants and animals that are legally protected under the California and/or federal Endangered Species Acts or other regulations, as well as other species that are considered rare enough by the scientific community and trustee agencies to warrant special consideration, particularly with regard to protection of isolated populations, nesting or denning locations, communal roosts, and other essential habitat. Species with legal protection under the federal and California Endangered Species Acts often represent major constraints to development, particularly when they are wide-ranging or highly sensitive to habitat disturbance and where proposed development would result in a “take” of these species. “Take” as defined by the federal Endangered Species Act (ESA) means to “harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect” a threatened or endangered species. “Harm” is further defined by the USFWS to include the killing or harming of wildlife due to significant obstruction of essential behavior patterns (i.e., breeding, feeding, or sheltering) through significant habitat modifications or degradation. CDFG also considers the loss of listed species habitat as “take,” although this policy lacks statutory authority and case law support under the California Endangered Species Act (CESA).

[2] Special-status species include designated (rare, threatened, or endangered) and candidate species for listing by CDFG; designated (threatened or endangered) and candidate species for listing by the USFWS; species considered to be rare or endangered under the conditions of Section 15380 of the California Environmental Quality Act Guidelines, such as those identified on lists 1A, 1B, and 2 in the 2001 *Inventory of Rare and Endangered Plants of California* by the California Native Plant Society (CNPS); and possibly other species which are considered sensitive due to limited distribution or lack of adequate information to permit listing or rejection for state or federal status, such as those included on list 3 in the CNPS Inventory or identified as animal Species of Special Concern by CDFG. Species designated as a Species of Special Concern have no legal protective status under the California Endangered Species Act but are of concern to CDFG because of severe decline in breeding populations and other factors.

The primary information source on the distribution of special-status species in California is the California Natural Diversity Database (CNDDB) inventory, which is maintained by the Biogeographic Data Branch of the CDFG. The CNDDB inventory provides the most comprehensive statewide information on the location and distribution of special-status species and sensitive natural communities. Occurrence data are obtained from a variety of scientific, academic, and professional organizations, private consulting firms, and knowledgeable individuals, and entered into the inventory as expeditiously as possible. The occurrence of a species of concern in a particular region is an indication that an additional population may occur at another location if habitat conditions are suitable. However, the absence of an occurrence in a particular location does not necessarily mean that special-status species are absent from the area in question; only that no data have been entered into the CNDDB inventory. A site assessment and possibly detailed field surveys may be necessary to provide a conclusive determination on presence or absence of sensitive resources from a particular location where there is evidence of potential occurrence.

Federal Authority

The United States Fish and Wildlife Service and NOAA Fisheries have jurisdiction over species that are formally listed as threatened or endangered under the federal Endangered Species Act.

The USFWS and NOAA Fisheries have jurisdiction over species that are formally listed as threatened or endangered under the federal ESA. The federal ESA is a complex law enacted in 1973 to protect and recover plant and animal species in danger of becoming extinct and to conserve their ecosystems, with an ultimate goal being the recovery of a species to the point where it is no longer in need of protection. An “endangered” plant or animal species is one that is considered in danger of becoming extinct throughout all or a significant portion of its range. A “threatened” species is one that is likely to become endangered within the foreseeable future. The USFWS also maintains a list of species proposed for listing as endangered or threatened, and a list of candidate species for which sufficient information is available to support issuance of a proposed listing rule.

It is illegal to take any listed species without specific authorization. Any activity that could result in take of a federally listed species requires a Section 10 take permit authorization from the USFWS or NOAA Fisheries. Should another federal agency be involved with permitting the project, such as the Corps under jurisdiction of the Clean Water Act, Section 7 of the ESA requires the federal lead agency to consult with the USFWS and/or NOAA Fisheries before permitting any activity that may result in take of a listed species. Section 9 of the ESA and its applicable regulations restrict certain activities with respect to endangered and threatened plants. However, these restrictions are less stringent than those applicable to fish and wildlife

species. The provisions prohibit the removal of, malicious damage to, or destruction of any listed plant species from areas under federal jurisdiction.

In addition to the protection offered under the ESA, the federal Migratory Bird Treaty Act (MBTA) provides for protection of migratory bird species, birds in danger of extinction, and their active nests. It is illegal to possess or take any bird protected under the MBTA without a depredation permit from the USFWS, which includes protection of eggs, young, and nests in active use. Although the MBTA technically provides for protection of most bird species, it is typically applied as a mechanism to protect active nests of raptors and colonial nesting species through the breeding and nesting season.

State Authority

The California Department of Fish and Game has jurisdiction over threatened or endangered species that are formally listed under the California Endangered Species Act.

CDFG has jurisdiction over threatened or endangered species that are formally listed under the CESA. The CESA is similar to the federal ESA both in process and substance, providing additional protection to listed species in California. The CESA does not supersede the federal ESA, but operates in conjunction, with some species having different listing status. The CESA is intended to conserve, protect, restore, and enhance listed species and their habitat. Compliance with the CESA is required when a take is considered likely by CDFG.

CDFG also maintains informal lists of “Species of Special Concern.” These species are broadly defined as animals that are of concern to CDFG because of population declines and restricted distribution, and/or because they are associated with habitats that are declining in California. These species are inventoried in the CNDDB, focusing on nesting, roosting, and congregation sites for non-listed species. In addition, wildlife species designated as “Fully Protected” or “Protected” may not be taken or possessed without a permit from the Fish and Game Commission and/or CDFG. The CESA prohibits the take of any plant listed as endangered, threatened, or rare. A “rare” plant species is one not presently threatened with extinction but may become endangered if its present environment worsens. State listing of plants began in 1977 with passage of the Native Plant Protection Act (NPPA). The CESA expanded upon the NPPA and enhanced legal protection for plants. To align with federal regulations, the CESA created the categories of threatened and endangered species. It grandfathered all rare animals into the CESA as threatened species, but did not do so for rare plants.

The California Native Plant Society (CNPS) is a non-profit conservation organization dedicated to the preservation of native flora in California. The CNPS has been involved in assembling, evaluating, and distributing information on special-status plant species in the state, as listed in the *Inventory of Rare and Endangered Plants of California* (2001 and electronic

inventory update). A List 1A plant is a species, subspecies, or variety that is considered to be extinct. A List 1B plant is considered rare, threatened, or endangered in California and elsewhere. A List 2 plant is considered rare, threatened, or endangered in California but is more common elsewhere. A List 3 plant is a species for which the CNPS lacks necessary information to determine whether or not it should be assigned to a list. A List 4 plant has a limited distribution in California and is considered a "watch list" by the CNPS.

All of the plant species on List 1 and List 2 meet the requirements of the NPPA (Section 1901, Chapter 10) or Section 2062 and 2067 of the CESA, and are eligible for state listing. Species maintained by CNPS on Lists 1 and 2 should be considered special-status species under the California Environmental Quality Act (CEQA). Some List 3 plant species also meet the requirements for state listing. Very few List 4 plants are eligible for listing but may be locally important and their listing status could be elevated if conditions change.

CEQA requires government agencies to consider environmental impacts of discretionary projects and to avoid or mitigate them where possible. CEQA Guidelines Section 15380 provides protection for both state-listed species and for any other species that can be shown to meet the criteria for state listing. CDFG recognizes that Lists 1A, 1B, and 2 of the CNPS *Inventory* consist of plants that, in a majority of cases, would qualify for listing and these species should be addressed under CEQA review. In addition, CDFG recommends, and local governments may require, protection of species that are regionally significant, such as locally rare species, disjunct populations, essential nesting and roosting habitat for more common wildlife species, or plants on the CNPS Lists 3 and 4.

Sensitive Natural Communities Regulations

In addition to species-oriented management, protecting habitat on an ecosystem level is increasingly recognized as vital to the protection of natural diversity in the state. This is considered the most effective means of providing long-term protection of ecologically viable habitat, and can include whole watersheds, ecosystems, and sensitive natural communities. Providing functional habitat connectivity between natural areas is essential to sustaining healthy wildlife populations and allowing for the continued dispersal of native plant and animal species.

The California Natural Diversity Database is responsible for maintaining up-to-date records of sensitive natural communities.

The CNDDB is responsible for maintaining up-to-date records of sensitive natural communities, those considered rare or threatened in the state. The classification system for "natural communities" now used by the CNDDB is based on the system described in the Manual of California Vegetation (Sawyer and Keeler-Wolf, 1995). It is a floristically based system that uses two units of

classification, called the alliance and the association in the National Vegetation Classification (Grossman et al., 1998). Although it is just now being used in a broad scale, this quantitative vegetation classification and systematic mapping method will allow conservationists and resource managers a greater understanding of natural ecosystems, their abundance, and their relative security. Previously, the classification of natural communities used by the CNDDB was generally a habitat-based approach defined by dominant or characteristic plant species as described in the preliminary descriptions of the terrestrial natural communities of California (Holland, 1986).

The purpose of the CNDDB natural community inventory was originally to identify and determine the significance and rarity of the various vegetation types in the state. While identifying and mapping sensitive natural communities continues to be a primary focus of the inventory, a more thorough understanding of all natural communities is essential to accurately define rarity, identify monitoring trends and threats, and broaden the approach to ecosystem-level conservation of biological diversity. This will presumably lead to mapping of vegetation throughout the state. Considerable work is necessary in updating and refining existing mapping records, identifying new occurrences of sensitive natural communities, and expanding the database to include the identification of high-quality stands of all natural communities. In the interim, sensitive natural community types recorded in the CNDDB are still generally mapped according to the older Holland classification system.

Federal Authority

No federal regulations have been enacted that relate specifically to protection of sensitive natural communities.

No regulations have been enacted specifically related to the protection of sensitive natural communities on a federal level. Regulations related to the protection of wetlands and essential habitat for listed species protected under the ESA provide indirect protection of some sensitive natural community types where they overlap with these other resources. An example is development of a Habitat Conservation Plan (HCP) for protection of listed species as called for under Section 10 of the ESA where essential habitat may be adversely affected by proposed private development where no federal agencies are involved.

State Authority

Although sensitive natural communities have no legal protective status under the California or federal Endangered Species Acts, they are provided some level of protection under CEQA.

Although sensitive natural communities have no legal protective status under the California or federal Endangered Species Acts, they are provided some level of protection under CEQA. The CEQA Guidelines identify potential impacts on a sensitive natural community as one of six significance criteria. As an example, a discretionary project that has a substantial adverse effect on any riparian habitat, native grassland, valley oak woodland, or other sensitive natural community would normally be considered to have a significant effect

on the environment. Further loss of a sensitive natural community could be interpreted as substantially diminishing habitat, depending on its relative abundance, quality and degree of past disturbance, and the anticipated impacts to the specific community type. Where determined to be a significant under CEQA, the potential impact would require mitigation through avoidance, minimization of disturbance or loss, or some type of compensatory mitigation when unavoidable. The Natural Community Conservation Act of 1991 was adopted as a method of providing a comprehensive approach to planning for the protection of natural diversity. The Natural Community Conservation Planning (NCCP) program of CDFG is intended to provide a more broad-based approach to ecosystem protection and is typically used in conjunction with the federal HCP program.

Wetlands Regulations

Although definitions vary to some degree, wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water and support vegetation adapted to life in saturated soil. As already noted, wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and flood waters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps and the USFWS, which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation.

In recognition of the importance of wetlands, in 1977 the USFWS began a systematic effort to classify and map remaining wetlands in the country, now known as the National Wetlands Inventory Program (NWI). Using the USGS topographic maps as a base, the wetlands mapping effort provides a generalized inventory of wetlands according to the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) used by the USFWS. Mapping has been prepared through interpretation of aerial photographs, with only limited ground confirmation, which means that a more thorough ground and historical analysis may result in a revision to wetland boundaries in a specific location. The inventory is not an attempt to define the limits of proprietary jurisdiction of any governmental agency. This mapping effort also identified features according to the broader definition of wetlands used by the USFWS, in which only one criterion (wetland hydrology, hydric soils, or hydrophytic vegetation) is typically necessary for the location to meet the wetland definition, rather than all three criteria as required by the Corps.

Federal Authority

Under Section 404 of the Clean Water Act, the United States Army Corps of Engineers is responsible for regulating the discharge of fill material into "waters of the United States," including wetlands.

The Clean Water Act was enacted to address water pollution, establishing regulations and permit requirements regarding construction activities that affect storm water, dredge and fill material operations, and water quality standards. This regulatory program requires that discharges to surface waters be controlled under the National Pollutant Discharge Elimination System permit program, which applies to sources of water runoff, private developments, and public facilities. Under Section 404 of the Clean Water Act, the Corps is responsible for regulating the discharge of fill material into waters of the United States. The term "waters" includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. All three of the identified technical criteria must be met for an area to be identified as a wetland under Corps jurisdiction, unless the area has been modified by human activity. In general, a permit must be obtained before fill can be placed in wetlands or other waters of the United States. The type of permit depends on the amount of acreage and the purpose of the proposed fill, subject to discretion of the Corps.

Certain activities in wetlands or "other waters" are automatically authorized, or granted a nationwide permit that allows filling where impacts are considered minor. Eligibility for a nationwide permit simplifies the permit review process. Nationwide permits cover construction and fill of waters of the United States for a variety of routine activities such as minor road crossings, utility line crossings, streambank protection, recreational facilities and outfall structures. To qualify for a nationwide permit, a project must demonstrate that it has no more than a minimal adverse effect on the aquatic ecosystem, including species listed under the ESA. This typically means that there will be no net loss of either habitat acreage or habitat value, resulting in appropriate mitigation where fill activities are proposed.

The Corps assumes discretionary approval over proposed projects where impacts are considered significant, requiring adequate mitigation and permit approval. To provide compliance with the Environmental Protection Agency's Section 404(b)(1) Guidelines, an applicant must demonstrate that the proposed discharge is unavoidable and is the least environmentally damaging practicable alternative that will achieve the overall project purpose. The 1990 Memorandum of Agreement between the EPA and Corps concerning the Determination of Mitigation under the Guidelines sets priorities for mitigation, with the first priority to avoid impacts, the second to minimize impacts, and the third to provide compensatory mitigation for unavoidable impacts.

State Authority

Under the California Fish and Game Code, it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake without notifying the California Department of Fish and Game, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement.

Jurisdictional authority of CDFG over wetland areas is established under Section 1600 of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake without notifying CDFG, incorporating necessary mitigation, and obtaining a Streambed Alteration Agreement. CDFG's Wetlands Resources Policy states that the Fish and Game Commission will strongly discourage development in or conversion of wetlands unless, at a minimum, project mitigation assures there will be no net loss of either wetland habitat values or acreage. CDFG is also responsible for commenting on projects requiring Corps permits under the Fish and Wildlife Coordination Act of 1958.

In addition, the Regional Water Quality Control Board (RWQCB) is responsible for upholding state water quality standards. Pursuant to Section 401 of the Clean Water Act, projects that apply for a Corps permit for discharge of dredge or fill material, and projects that qualify for a nationwide permit, must obtain water quality certification. The RWQCB is also responsible for regulating wetlands under the Porter-Cologne Act, which may include hydrologically isolated wetlands no longer regulated by the Corps under Section 404 of the Clean Water Act. Recent federal Supreme Court rulings have limited the extent of Corps jurisdiction, but the RWQCB in some cases continues to exercise jurisdiction over these features.

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision as it pertains to housing, transportation, historic preservation, open space and other areas. Several policies in the Open Space and Conservation Element of the existing St. Helena General Plan relate to protecting natural habitat and vegetation in hillside areas, as well as integrating existing significant trees into future development and requiring replacement where loss is unavoidable.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once adopted, future developments within the city will be subject to policies outlined in the updated document.

St. Helena Municipal Code

Chapter 12.24 of the St. Helena Municipal Code pertains to trees and other vegetation. This chapter provides for protection of "heritage trees" and other protected trees. As defined by the ordinance, a "heritage tree" means any tree or grove of trees within the city boundaries designated by a resolution of the City Council, and "protected tree" includes a heritage tree or a protected replacement tree planted as a condition of mitigation for the removal of any existing native or heritage trees, street tree, and city tree. A Tree Committee is charged with the responsibility of reviewing all matters pertaining to tree resources and reporting back in an advisory capacity to the City Council, Planning Director, Parks and Recreation Commission, Planning Commission, and the public. Figure 4.G-1 shows the location of designated "heritage trees" within St. Helena.

Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the CEQA Guidelines, implementation of the proposed General Plan Update would have a significant biological resources impact if it would:

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

In addition, in accordance with CEQA Guidelines Section 15065, the City of St. Helena (the lead agency) must find that implementation of the proposed General Plan Update may have a significant effect on the environment if it would:

- Have the potential to degrade the quality of the environment substantially reduce the habitat of fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address biological resources:

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

OS1.2. Prohibit development, alteration and/or removal of native vegetation from riparian areas.

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

OS1.4. Protect natural habitats that have the potential to support rare, endangered or special-status wildlife and plant species.

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

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

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

OS2.5. Limit public access to habitat areas when public access will significantly impact the value of the habitat area.

OS4.1. Protect and enhance tree resources in developed and undeveloped areas. Efforts may 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.

OS1.A. Develop and adopt an ordinance for the protection, restoration and enhancement of creek corridors. The ordinance should consider the following:

- Establish development setbacks to allow for limited recreational uses, access for maintenance and flood control;
- Encourage the proper use of herbicides and insecticides in areas near and adjacent to creeks, and ensure best management practices for all developments and industries;
- Provide access for creek maintenance and public use through easements and cooperative agreements with landowners;
- Establish sufficient buffer width adjacent to waterways to allow for wildlife habitats, trails and greenbelts;
- Adhere to Living River Principles that allow the river to meander, reconnect to its historic floodplain and retain natural channel features to support continuous fish migration and the health of riparian corridors; and
- Encourage the use of bioswales, off-stream detention ponds and other green best practices for stormwater management.

OS1.B. Restrict development on open space-designated parcels along Sulphur Springs Creek west of the Crane Avenue Bridge. All development must be outside the stream corridor and structures must be set back from the creek's edge, consistent with California Department of Fish and Game standards.

OS1.C. Coordinate with the California Department of Fish and Game, the Living Rivers Council and other regional agencies to develop standards and implement a program to restore and maintain creek corridors.

OS1.D. Coordinate with the County, the California Department of Fish and Game and other regional agencies to augment water flow in the Napa River and its tributaries in order to enhance year-round fish habitat and minimize stagnation and pollution.

OS1.E. Create a work plan for restoring sensitive habitat that has been degraded by agriculture or other past practices. Where applicable, encourage agricultural enterprises to participate in restoration efforts and in efforts to prevent further degradation.

OS1.F. Create a set of guidelines for the protection of special-status species. Guidelines can include appropriate survey methods consistent with the California Department of Fish and Game, the U.S. Fish and Wildlife Service and CEQA requirements.

OS1.G. Require a biological assessment of any proposed project site where species or the habitat 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.

OS1.H. Require all proposed projects adjacent to a creek corridor or located in the City's hillside areas to submit a management plan for protecting natural habitats, 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; and
- Provide replacement habitat of like quantity and quality.

OS1.I. Require new development to be sited to maximize the protection of native tree species, riparian vegetation, important concentrations of natural plants and sensitive wildlife habitat.

OS1.J. Minimize the installation of deer fencing to maintain wildlife corridors and support regional wildlife movement.

OS1.K. Require environmental review of new agricultural uses including, but not limited to, farming, horticulture, floriculture and viticulture, animal husbandry and livestock farming. Viticulture review must include the replanting of existing vineyards in accordance with County regulations.

OS1.L. Discourage removal of trees for agricultural or other development in hillside areas.

OS1.N. Conduct a study to determine the most appropriate method for managing and mitigating the build-up of gravel in Sulphur Springs Creek to avoid the risk of flooding. Ensure that implementation measures contribute positively to the preservation of the creek and its corridor.

OS2.B. Adopt a land dedication ordinance that requires developers to provide land and improvements, such as trails and revegetation, along both sides of creek corridors as a condition of subdivision approval. The width of dedicated corridors should be established in consultation with the California Department of Fish and Game.

OS4.A. Establish an urban forestry program to ensure a coordinated and comprehensive approach to maintaining and increasing the City's trees. Monitor and enforce compliance with program guidelines. Key program aspects will include the following:

- A master tree list to guide the choice of tree varieties;
- A tree planting program to ensure that new trees are planted regularly;
- A tree maintenance program to ensure that existing trees are healthy and pruned;
- A tree inventory to create a comprehensive listing of the City's trees and tree-related needs;
- A Tree Committee to oversee the implementation of the urban forestry program and approval of tree removals; and

- A landmark tree list that identifies trees that require additional protection from damage and/or removal.

OS4.B. Until implementation of the City-sponsored urban forestry program occurs, continue to use the Master Street Tree List as a guideline for all street tree plantings.

OS4.C. Develop and adopt a Tree Ordinance for the purpose of protecting trees and identifying replacement trees. In coordination with an urban forestry program, existing, significant trees should be integrated into future development. In cases where existing trees cannot be saved, require the planting of replacement trees consistent with guidelines included in the Master Tree List.

Impact Analysis

Less-than-Significant Impacts

For the most part, adoption of the proposed General Plan Update would not have substantial adverse effects on biological resources because of the comprehensive policies and implementing actions included in the General Plan Update, as listed above. Numerous policies and implementing actions call for protection of native vegetation, tree resources, and important wildlife habitat areas. Policies OS1.5, OS1.7 and OS2.5 and Implementing Action OS1.E address the protection of natural habitat and restoration of sensitive habitats. Policy OS1.6 discourages the use of invasive species that can spread and degrade natural habitat. Additional policies and implementing actions relevant to the significance criteria are discussed below.

New development could occur on Key Housing Opportunity Sites, in Change Areas, as part of Pipeline Projects, or in other areas, but would generally be located in areas that have already been extensively developed with past agricultural and urban uses. For example, a comparison of Figure 4.G-1 to the Figure 3-4 (Potential Growth Areas) in Chapter 3, Project Description, indicates that most Change Areas have already been developed or support agricultural cover (Potential Land Use Change Areas 1 through 8). Only a portion of Change Area 9 at the south end of Spring Street continues to support a natural cover native Douglas-fir/redwood forest. Further review of any development application at this location, and conformance with the relevant policies in the General Plan Update, should serve to address any potential impacts on sensitive biological resources on Change Area 9.

Natural Habitat and Wildlife Movement

Numerous policies and implementing actions of the General Plan Update call for protecting natural habitat and important wildlife habitat areas. Policies OS1.1, OS1.2, and OS1.3, and Implementing Actions OS1.A, OS1.B, OS1.C, OS.1.D, OS1.H, OS1.N, and OS1.2.B all pertain to preserving and enhancing

riparian habitat along creeks in St. Helena. Implementing Action OS1.J calls for minimizing installation of deer fencing to maintain wildlife corridors and support regional wildlife movement. These measures would serve to minimize loss of important wildlife habitat and protect wildlife movement opportunities. The potential impact on wildlife corridors is considered less than significant.

Conflict with Tree Preservation Policies or Ordinances

General Plan Update Policy OS4.1 and Implementing Actions OS1.I, OS1.L, OS4.A, and OS4.B call for protection and enhancement of tree resources and establishment of an urban forestry program to ensure a coordinated and comprehensive approach to maintaining and increasing trees within the planning area. Development projects would also be required to comply with Chapter 12.24 of the St. Helena Municipal Code pertaining to trees and other vegetation, including permit requirements for removal of any protected trees. These requirements include consideration of trees meeting the definition of "protected trees" and "heritage trees," as mapped in Figure 4.G-1. The potential for conflict with tree preservation policies or ordinances is therefore considered less than significant.

Conflict with Habitat Conservation Plans

No habitat conservation plans have been adopted encompassing the St. Helena vicinity. The General Plan Update therefore would not conflict with any such plans. No impacts associated with conformance with adopted habitat conservation plans are anticipated.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact BIOLOGY-1: New development in accordance with the General Plan Update could inadvertently result in the loss of nests in active use protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, unless appropriate construction avoidance measures are implemented. (Potentially Significant)

The proposed General Plan Update does not contain policies that specifically address the potential for inadvertent loss of bird nests in active use that are protected from destruction under the federal Migratory Bird Treaty Act and various sections of the California Fish and Game Code. Tree removal, vegetation clearing, or disturbance in the immediate vicinity of a nest in active use could result in abandonment of the nest or loss of eggs and young. Where possible nesting habitat is present, preconstruction surveys would be

necessary in advance of construction during the nesting season (March through August) to confirm presence or absence of any active nests.

Mitigation Measure

Mitigation Measure BIOLOGY-1: The following new policy shall be added to the Open Space and Conservation Element of the General Plan Update:

- *As part of new development, avoid disturbance to and loss of bird nests in active use by scheduling vegetation removal and new construction during the non-nesting season (September through February) or by conducting a preconstruction survey by a qualified biologist.*

With the inclusion of this new policy, the impact would be reduced to a less-than-significant level. (Less than Significant)

Impact BIOLOGY-2: New development in accordance with the General Plan Update could result in loss of or modifications to wetlands and other waters, requiring agency authorizations and appropriate mitigation. (Potentially Significant)

The proposed General Plan Update does not contain policies that specifically address the potential for loss of or modifications to jurisdictional wetlands and drainages. Future development could require new or expanded stream crossings and other modifications to jurisdictional drainages and wetlands that would create potentially significant impacts. In addition to direct disturbance, potential impacts on jurisdictional waters could include indirect changes associated with the increased potential for erosion and water quality degradation. As indicated in Figure 5.2 of the General Plan Update, bridge crossings are proposed for the Adams Street extension to Silverato Trail and across Sulphur Creek, which could directly affect jurisdictional waters. Potential erosion and degradation of creeks and drainages can occur as a result of increased urban runoff volumes and degraded water quality associated with development. New development typically magnifies the volume of runoff and potential for urban pollutants, with perhaps the greatest potential damage resulting from sedimentation during the construction phase of construction and from new non-point discharge of automobile by-products, fertilizers and herbicides. However, implementation of adequate erosion control measures and use of Best Management Practices, as discussed in the Section 4.M, Hydrology and Water Quality, of this EIR, would serve to address potential indirect impacts on wetlands and water quality.

Mitigation Measure

Mitigation Measure BIOLOGY-2: The following new policy shall be added to the Open Space and Conservation Element of the General Plan Update:

- *Avoid potential impacts on jurisdictional wetlands and other waters as part of new development to the maximum extent feasible. Where complete avoidance is not possible, the project applicant must secure any required authorizations from jurisdictional agencies and provide adequate replacement mitigation to ensure there is no net loss in habitat acreage or values.*

With the inclusion of this new policy, the impact would be reduced to a less-than-significant level. (Less than Significant)

Impact BIOLOGY-3: New development in accordance with the General Plan Update could result in the loss of sensitive biological resources, including occurrences of sensitive natural communities and special-status species, requiring agency authorizations and appropriate mitigation. (Potentially Significant)

New development would generally occur in areas that have already been extensively developed with past agricultural and urban uses, limiting the potential for adverse impacts on special-status species and sensitive natural communities. However, there remains a possibility that new crossings of streams or development in remaining natural areas could adversely affect sensitive biological resources. Encouraging and facilitating wind turbines for alternative energy could result in loss of individual birds, including raptors, depending on the turbine design, speed, and other factors, which would require further detailed review.

Most potential impacts on special-status species would be mitigated through policies and implementing actions included in the General Plan Update. The General Plan Update calls for site-specific review where sensitive resources such as special-status species could be affected by proposed development. Policy OS1.4 calls for protecting natural habitat that has the potential to support special-status species. Implementing Action OS1.F would create a set of guidelines to protect special-status species, and would include conduct of appropriate surveys to verify presence or absence. Implementing Action OS1.G would require a biological assessment of any proposed project site where sensitive habitat and special-status species may be present. Implementing Action OS1.K would require environmental review of new agricultural uses, presumably in part to confirm that no sensitive resources would be adversely affected by habitat conversion.

Although a number of General Plan Update policies and implementing actions address sensitive resources, they are not clear in their intent to avoid and adequately mitigate potential impacts. Implementing Action OS1.G requires a biological assessment where sensitive habitat and special-status species may be present but does not call for avoidance or adequate mitigation where complete avoidance is infeasible. Implementing Action OS1.K requires environmental review of new agricultural uses but does not specifically call for protection of sensitive resources. In addition, the provisions are not specific about the importance of protecting sensitive natural communities and the possible need to secure agency authorizations where listed special-status species could be affected as a result of future development, and the provisions do not identify mitigation standards. Implementing Actions OS1.F and OS1.G also do not acknowledge the possible need for authorization from NOAA Fisheries for projects that could affect anadromous fish known from the planning area. Further environmental review of proposed development applications would presumably address these issues, but the intent of the General Plan Update should be clarified to ensure the intent to protect special-status species and sensitive natural communities.

Mitigation Measure

Mitigation Measure BIOLOGY-3: General Plan Update Implementing Actions OS1.K, OS1.F, and OS1.G shall be revised as follows (new text underlined):

OS1.K Require environmental review of new agricultural uses, including, but not limited to, farming, horticulture, floriculture and viticulture, animal husbandry and livestock farming. The environmental review shall ensure that no sensitive biological resources would be adversely affected. Viticulture review must include the replanting of existing vineyards in accordance with County regulations.

OS1.F Create a set of guidelines for the protection of special-status species and sensitive natural communities. Guidelines can include appropriate survey methods consistent with the California Department of Fish and Game, the U.S. Fish and Wildlife Service, NOAA Fisheries, and CEQA requirements.

OS1.G Require a biological assessment of any proposed project site where species or the habitat defined as sensitive or special-status by the California Department of Fish and Game, NOAA Fisheries, or the U.S. Fish and Wildlife Service might be present, including installation of new wind turbines for alternative energy. Avoid potential impacts on sensitive resources as part of new development to the maximum extent feasible. Where

complete avoidance is not possible, the project applicant must secure any required authorizations from jurisdictional agencies and provide adequate replacement mitigation to ensure there is no net loss in habitat acreage or values.

With the inclusion of the above revisions, the impact would be reduced to a less-than-significant level. (Less than Significant)

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4.H Cultural Resources

Introduction

The findings and information in this section summarize the results of cultural resources studies done for the proposed General Plan Update. This section describes the baseline conditions for cultural resources in St. Helena, identifies impacts on such resources that may result from implementation of the General Plan Update, and recommends program-level mitigations to reduce the severity of potentially significant impacts.

Cultural resources include archaeological sites, historic roadways and railroad tracks, and buildings of architectural significance.

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for their historical significance. Cultural resources include a broad range of resources, examples of which include archaeological sites, historic roadways and railroad tracks, and buildings of architectural significance. Generally, for a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources), it must be 50 years or older (California Office of Historic Preservation, 2006:3), or be formally recognized by a lead agency as constituting an historical resource.

Under the California Environmental Quality Act (CEQA), paleontological resources are a subset of cultural resources and include fossil plants and animals, and evidence of past life such as trace fossils and tracks. Ancient marine sediments may contain invertebrate fossils representing snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Terrestrial sediments may contain fossils that represent such vertebrate land mammals as mammoth, camel, saber tooth cat, horse, and bison.

Setting

This subsection describes the cultural resources of the St. Helena area. It provides a brief overview of the area's paleontological and cultural settings, a summary of recorded cultural resources in St. Helena, and an assessment of the City's archaeological and paleontological sensitivity.

Study Methods

The methods used to develop the baseline conditions for cultural resources within St. Helena include archival records searches and a literature review. The purpose of the records searches and literature review was to identify recorded cultural resources within the city. Records searches were conducted on December 4, 2008, and January 5, 2009, at the Northwest Information

Center (NWIC) of the California Historical Resources Information System, Sonoma State University, Rohnert Park, California.[1]

In addition to the NWIC records searches, other cultural resource inventories and literature reviewed include:

- *California Inventory of Historic Resources* (California Department of Parks and Recreation, 1976).
- *Five Views: An Ethnic Historic Sites Survey for California* (California Office of Historic Preservation, 1988).
- *Directory of Properties in the Historic Property Data File for Napa County* (California Office of Historic Preservation, 2008). The directory includes the listings of the National Register of Historic Places, National Historic Landmarks, the California Register of Historical Resources, California Historical Landmarks, and California Points of Historical Interest.
- *Napa County Historic Resources Inventory, City of St. Helena* (Napa Landmarks, Inc., 1978).
- *Historic Resources Inventory, City of St. Helena, St. Helena, California* (Page & Turnbull, Inc., 2006).

Background research was also done to determine whether St. Helena contains paleontological resources (fossils) or geologic units known to contain fossils. This research, based on a fossil locality search and a literature review, was done to identify the geologic units, fossil localities (i.e., a location at which paleontological resources have been documented), and the types of fossils that may be within St. Helena. The fossil locality search was conducted by the staff of the University of California Museum of Paleontology (UCMP), Berkeley. Paleontological and geological maps and literature pertaining to St. Helena were also reviewed.

Prehistory and Ethnography

The Paleo-Archaic-Emergent cultural sequence developed by Fredrickson (1974, 1994) is commonly used to interpret the prehistoric occupation of Central California. The sequence consists of three broad periods: the Paleoindian Period (10,000-6000 B.C.); the three-staged Archaic Period, consisting of the Lower Archaic (6000-3000 B.C.), Middle Archaic (3000-500 B.C.), and Upper Archaic (500 B.C.-A.D. 1000); and the Emergent Period (A.D. 1000-1800).

[1] The NWIC is an affiliate of the California Office of Historic Preservation and is the official state repository of cultural resources reports and records for Napa County.

The Paleo Period began with the first entry of people into California. These people probably subsisted mainly on big game and minimally processed plant foods, and had few or no trade networks. Current research, however, is indicating more sedentism, plant processing, and trading than previously believed. During the Lower Archaic, milling stones for plant processing were abundant and hunting was less important than obtaining plant foods. Artifacts were predominantly of local materials, suggesting that few if any extensive trade networks were established at this time. During the Middle Archaic, the subsistence base began to expand and diversify with a developing acorn economy, as evidenced by the mortar and pestle, and the growing importance of hunting. Status and wealth distinctions were evidenced in the Upper Archaic archaeological record, and regional trade networks were well established at this time for the exchange of goods and ideas, such as obsidian and Kuksu ceremonial practices involving spirit impersonations. Increasing social complexity continued during the Lower Emergent, with well established territorial boundaries and regularized inter-group exchanges involving more and varied goods, people, and ideas. Bow and arrow technology was also introduced. By the Upper Emergent, a monetary system based on the clamshell disk bead had been established. Native population reached its zenith during this time, as evidenced by high site densities and large village sites in the archaeological record.

At the time of Euro-American contact, St. Helena was within the territory of the Wappo.

Native American occupation of the Upper Napa Valley dates from at least the Middle Archaic and continued until the Upper Emergent. Middle Archaic occupation is evidenced at prehistoric archaeological site CA-NAP-131 near St. Helena, which is characterized by an assemblage that includes thick-leaf and concave-base projectile points, and millingslabs and handstones. Evidence of Emergent Period occupation, including “Rattlesnake Series” and “Stockton Series” projectile points, is commonly found at sites in St. Helena and the vicinity.

At the time of Euro-American contact, the St. Helena was within the territory of the Wappo, one of two Yukian language groups (Shipley, 1978). Wappo territory included approximately the area between the City of Napa, Cobb Mountain, and Alexander Valley (Sawyer, 1978:257).

Little is known about the Napa Valley Wappo during the historical contact-period, and knowledge of the Wappo derives mostly from Driver’s (1936) ethnography of an Alexander Valley Wappo tribe.

According to Barrett (1908), the Wappo villages in or closest to the General Plan area are *Annakotanoma* “on the town site of St. Helena” and *Tsemanoma* in the foothills on the eastern side of Napa Valley, about 2 miles northeast of St. Helena. Wappo habitation sites were of two kinds (Driver,

1936:183): permanent or winter villages and temporary or summer villages. This settlement pattern is similar to the "tribelet" or "village community" typical of most California groups at the time of Euro-American contact (Kroeber, 1925:228-229, 1932:258). These village communities consisted of a principal winter village, where the chief resided, with outlying, secondary settlements used during the spring and summer to exploit seasonal resource patches. A village community, ranging in population from about 100 to 2,000 persons, claimed communal lands in which members could hunt, fish, or gather plant food without limitations of private ownership (Kroeber 1925:228).

Archaeological data indicate numerous permanent and temporary villages in the Upper Napa Valley. These sites are frequently identified by the presence of midden soils—anthropogenic soils that develop from the accumulation of organic debris—and can include shell, faunal bone, and culturally flaked stone, such as obsidian and chert.

History[2]

History of St. Helena

In 1842, Rancho Carne Humana, in Napa County, was granted to a young English surgeon, Dr. Edward Bale. Comprised of the entire Napa Valley north of George C. Yount's Rancho Caymus, Rancho Carne Humana included the future site of St. Helena.

The first structure built in what would become St. Helena was a house by Still and Walters in 1851.

By 1851, Henry Still and his partner Walters had purchased 100 acres that would become St. Helena, from the estate of Dr. Bale. Their 100-acre parcel was bounded by what are now Main Street, Sulphur Creek, Madrona Avenue, and the foothills to the southwest.

The first structure built in what would become St. Helena was a house by Still and Walters in 1851. According to Smith and Elliot (1878:14), the store building constructed by Still and Walters was located on a site subsequently occupied by G.F. Brown. In 1854, the Sons of Temperance formed a post in the town, naming themselves the St. Helena Division, giving the town its name.

By 1855, in an effort to attract businessmen to the new town, Still gave away parcels adjacent to the County Road (Main Street). John Howell erected his blacksmith shop, near what is now Main Street, in 1856 and A. Tainter built a hotel in 1856 at Pope and Main streets. Other early businessmen included John S. Keister, who ran a shoe store, and Robert Calderwood, who ran a

2 This subsection adapted from *Historic Resources Inventory, City of St. Helena, St. Helena, California* by Page & Turnbull, Inc. (August 2006).

wagon store. In total, St. Helena had seven thriving businesses c. 1855 serving the surrounding farmlands.

The first record of a vineyard in Napa County is one of Mission grapes started by J.N. Pachett in 1850.

The first record of a vineyard in Napa County is one of Mission grapes started by J.N. Pachett in 1850, and the first shipment of wine from the county occurred in 1857. George Belden Crane, viticulture pioneer of the 1850s, had his first experimental vineyards on the land now occupied by the St. Helena High School at 437 Main Street. Charles Krug began making wine on the site of the present Charles Krug winery in St. Helena in 1861. In 1874, John Thomman, a Swiss winemaker, established his winery south of town. Along Sulphur Springs Avenue were the vineyard and orchard estates of the Lewelling family, Mrs. W.B. Bourn, Charles Langley, General Keyes, and the Heath family. By the 1870s, grazing and grain lands surrounding the town were profitably converted to viticulture and horticulture.

View along Church Street

St. Helena's burgeoning role as an agricultural crossroads in the Napa Valley was improved when railway transportation came to the area in the 1860s. In March 1864, a bill to aid the construction of a railroad in Napa County was introduced in the Legislature by Chancellor Hartson. After passage of the bill on April 24, 1864, the Napa Valley Railroad Company was organized with Hartson as president. The Napa Valley Railroad originally was built from Suscol to Napa, and eventually to St. Helena, reaching the town on February 27, 1868. The Napa Valley Railroad underwent foreclosure in 1896 and was acquired by the California Pacific Railroad. In April 1899, the California Pacific Railroad was taken over by the Southern Pacific Railroad, which used the railroad as a freight line.

St. Helena received its city charter on March 24, 1876. By the 1880s, the land from Napa to 18 miles north of St. Helena was basically one continuous vineyard (Napa Landmarks, Inc., 1978:2). An 1886 Sanborn Fire Insurance Map shows the W.A.C. Smith Special Bonded Warehouse for wines located on the south side of Church Street, between Pope Street and Hunt Avenue. The warehouse had a storage capacity of 120,000 gallons and is evidence of St. Helena's early history of wine production. The City of St. Helena was later reincorporated on May 14, 1889.

The open farmland, only sparsely settled until the railroad pushed up the Napa Valley to Calistoga in 1868, was rapidly parceled out in succeeding years. Farmers could now profitably ship their produce down the valley to Napa by train, and from there by train or boat to markets in San Francisco. Fruit, vegetables, grain, dairy products, and other agricultural products were in high demand and commanded high prices. Cutting cordwood and poles on the forested slopes outside of the city continued at a brisk pace, and the area northeast of the railroad was home to woodworking and planning mills.

Main Street has been St. Helena's main thoroughfare since the city's founding.

St. Helena became a major commercial center for the developing countryside and a central shipping point for agricultural and extractive industries for the upper Napa Valley and beyond. The original railroad depot located at Railroad Avenue and Hunt Avenue could not handle the increasing volume of freight and passenger traffic by the 1880s when the Southern Pacific Railroad had taken over the line. According to Sanborn Fire Insurance Maps, as early as 1899, Southern Pacific built a larger standardized depot at the present location on Railroad Avenue and Pine Street.

View along Main Street

Main Street has been St. Helena's main thoroughfare since the city's founding, connecting the city to Napa to the south and Calistoga to the north. By the 1880s, wooden sidewalks were installed for pedestrians to walk on along Main Street, and by 1900 sewers had been installed and the wooden sidewalks had been replaced by concrete sidewalks. Seven years later, an electric railway was installed on Main Street, providing public transportation. In 1937, the electric railway was discontinued and Main Street was paved with concrete and asphalt, which is how it appears today (Loeber, 1955).

During the Prohibition years, 1920-1933, the economy of St. Helena, as well as most of the region, fell into a slump because of the devastation that the Volstead Act and resulting Eighteenth Amendment caused to viticulture. Most wineries and vineyards had to either find a new cash crop or shut down completely. Some farmers were able to find alternative crops to produce, such as fruits, nuts, and grains. Others went into ranching. Only a small handful of vineyards in the entire region, such as the Beringer Vineyard, were able to survive with special permits to produce sacramental wines. After the end of Prohibition in 1933, wineries and vineyards could legally reopen; however, many proprietors remained closed due to the harsh financial times caused by the Great Depression. Not until after World War II did commercial production of wine in the Napa Valley return to pre-Prohibition levels (Heintz, 1999).

After 1945, the viticulture industry around St. Helena gradually recovered. During this time, the tourist industry developed and grew, with an emphasis on the wineries and vineyards in the area. Today, wines from St. Helena and its environs are considered to be some of the best in the world.

Historical Architecture of St. Helena

Over time, St. Helena has developed from a rural agricultural community into a small city focused on the wine industry and the related tourism industry. The agricultural roots of the area are clearly visible in the area's built environment. The city's main industry has always been viticulture, and many historic wineries, complete with farmhouses, agricultural outbuildings, and vineyards, are located within the city limits. As the city grew to become

an agricultural crossroads in the late-nineteenth century, commercial buildings, typically constructed of brick and local stone, were erected along Main Street. Mills and industrial buildings that processed the area's agricultural resources were located to the northeast of the railroad. The city's residential areas developed both to the northeast and southwest of the railroad and Main Street, the city's commercial core. St. Helena's historic residential areas include a variety of architectural styles.

Winery Architecture

The most significant character-defining feature of rural agricultural buildings in California is their utilitarian appearance.

The design, construction, and spatial organization of St. Helena's wineries, like all ranches in the West, depended on many factors, including climate, soils, availability of water and building materials, and the ethnicity and class of their builders. These factors, as well as the ingenuity of individual ranchers or their employees, affected the handling of materials and use of building technologies.

The most significant character-defining feature of rural agricultural buildings in California is their utilitarian appearance, a function of the inexpensive materials and design for flexibility. As functional buildings set back far from the main house or the road, outbuildings such as field barns, pump houses, chicken coops and bunkhouses were typically designed without the aid of an architect. Most were instead built from pattern books, traditional know-how passed from generation to generation, or a combination of both. Ethnic and regional influences played a part as well. The typical two-story, gable and shed-roof California barns of the nineteenth-century are thought to have derived from the "crib-and-shed" type barns of Tennessee. Composed of a central gable-roofed "nave" illuminated by monitor windows and flanked by shed-roofed side aisles, the crib-and-shed barn disseminated westward through the Plains states, where it was modified to employ timber framing instead of log construction. In this guise, the "three portal crib barn" eventually infiltrated the valleys of the Pacific West, including the Willamette Valley of Oregon and the San Joaquin, Sacramento, Santa Clara, and Salinas valleys of California, where the original prototype was gradually modified in response to local environmental conditions and crops.

Many wineries in St. Helena contain examples of substantial stone outbuildings.

In addition to the simple, utilitarian timber-frame, three-portal barn, many wineries in St. Helena also contain examples of more substantial stone outbuildings and associated features, such as wine-aging caves. Influenced by St. Helena's large ethnic communities and the skills of immigrant stonemasons, some buildings in St. Helena were constructed of local stone, typically tufa stone. Stonemasonry drew on a wide range of ethnic backgrounds, including Swiss, Italian, and others. The availability of stone craftsmanship in St. Helena made it economically viable to build in stone rather than other materials. Commercial buildings, residential basements,

simple industrial warehouses, and even agricultural outbuildings were constructed of stone. Utilitarian outbuildings and features such as winery storage buildings, well houses, and tunnels, which benefit from the cooling properties of stone, were constructed in local stone. These typically utilitarian structures are unique for their inclusion of detailed stonework and ornamentation such as quoins.[3] One of the most notable of these features is the wine-aging tunnels that Chinese immigrants excavated from the late 1870s to early 1880s into the side of Spring Mountain at Beringer Winery. These tunnels extend approximately 1,200 linear feet and were constructed using picks, shovels, and black powder.

In addition to barns, tankhouses for storing water were a common building type in the vicinity of St. Helena. Tankhouses were erected between the late 1800s and late 1930s in the western United States. In St. Helena, as in many rural areas that have been developed, many tankhouses have been torn down, although some remain within the city, often converted to other uses.

Residential Architecture

By the time St. Helena received its charter in 1876, the physical fabric of today's city had already begun to take shape. Buildings appear in the Greek Revival, Gothic, Italianate, Second Empire, and other styles. Many buildings were not designed in a recognizable architectural style, as they were folk-designed structures that made use of local materials. Designed for practical purposes and often with limited resources, many of St. Helena's early buildings can be described as being of vernacular design.

St. Helena contains three areas with unique styles of residential development: houses on Main Street, houses northeast of Main Street, and houses southwest of Main Street.

Large numbers of historic images of St. Helena buildings have not been found; therefore, the understanding of vernacular architecture in St. Helena is based largely on existing historic buildings. A recent historical architectural survey revealed a wide variety of vernacular building types in addition to popular architectural styles such as Stick/Eastlake, Queen Anne, Shingle, Romanesque, Arts & Crafts, Art Deco, Spanish Colonial Revival, and Mission Revival (Page & Turnbull, 2006). Much of the common vernacular residential architecture in St. Helena includes easily recognizable rural vernacular house forms, including rectangular massing, gabled or hipped roofs, wood-frame construction, extended porches, simple locally available materials including redwood siding, and little ornamental detail.

St. Helena contains three areas with unique styles of residential development: houses on Main Street, houses northeast of Main Street, and houses southwest of Main Street. Main Street residential architecture styles include Craftsman

[3] Quoins are the cornerstones of brick or stone walls and may be either structural or decorative.

and Georgian Revival. Historical residences in this area are often sited on large lots with elegant landscaping, as seen in the residential neighborhood of Alexander Court just off Main Street. Residences northeast of the city's commercial core along Main Street were largely influenced by the presence of the railroad. Much of the housing in the area was worker housing and was rendered in simple vernacular styles that made use of readily available local materials. Residences in this area are also situated on large agricultural lots that functioned as small family farms and contained a main house and agricultural outbuildings. The area southwest of the city's commercial core was more densely developed than other areas of the city, and the majority of houses constructed between the late-19 and early-20th century were rendered in a vernacular style, although other notable styles including Stick, Craftsman, Italianate, and Folk Victorian styles are present. Many of the residences southwest of Main Street were set on small lots but were set back from the lot lines, giving the neighborhoods a rural character.

Commercial Architecture

The late-19th and early-20th century architecture of St. Helena's commercial corridor along Main Street has been recognized as a National Register Historic District.

The late-19th and early-20th century architecture of St. Helena's commercial corridor along Main Street has been recognized as a National Register Historic District (St. Helena Historic Commercial District). Main Street, however, also contains many historically significant mid-20th century commercial properties that have not been formally recorded as contributors to the St. Helena Historic Commercial District. While the area's economy was severely affected by both Prohibition and the Great Depression, a few commercial buildings were constructed along Main Street in the 1930s and 1940s in the Streamline Moderne style. These modern buildings, which include the El Bonita Motel (195 Main Street), Gott's Roadside Tray Gourmet (933 Main Street), and the Main Street Service Station (1380 Main Street), were set in contrast to St. Helena's other architecture from that time, which was largely derived from historic precedents, not modern styles. In addition to the unique architectural style employed, the commercial buildings were also typical of the era's automobile-focused culture. These 1930s- and 1940s-era commercial buildings were typically constructed on large lots and included large setbacks from Main Street allowing for ample automobile parking.

Paleontology

The St. Helena lies in an alluvial valley formed by tectonic faulting. The Vaca Mountain range lies to the east, and the Mayacamas Mountains lie to the west; both consist mostly of Sonoma Volcanics. The erosion of Sonoma Volcanics in and around St. Helena and the subsequent fluvial transportation of the sediment resulted in the deposition of alluvium (Sloan, 2006; U.C. Davis Soil Resource Laboratory, 2009). The sediments that underlie

St. Helena are Quaternary (1,800,000 years B.P.[4] to present) alluvial deposits laid down by the Napa River and the York, Heath Canyon, and Sulphur Canyon creeks exiting the hills to the west of St. Helena. The Quaternary deposits in St. Helena include moderately sorted, coarse-grained Holocene (10,000 years B.P. to present) alluvium and poorly sorted Late Pleistocene (126,000 to 10,000 years B.P.) alluvium.

St. Helena is underlain by the following geological units, described in stratigraphic sequence from youngest (Quaternary Deposits) to oldest (Franciscan Complex).

Quaternary Deposits

Locally, Late Pleistocene deposits contain invertebrate and extinct vertebrate fossils.

Quaternary deposits of Pleistocene (1,800,000 to 10,000 years B.P.) and Holocene (10,000 years B.P. to present) age occur in the Napa Valley. These deposits consist of loosely consolidated sand and gravel deposited in fluvial systems (Helley et al., 1979). Older Pleistocene deposits typically occur as terraces incised by Holocene fluvial drainages. Locally, Late Pleistocene (126,000 to 10,000 years B.P.) deposits contain invertebrate and extinct vertebrate fossils, many of which are representative of the Rancholabrean land mammal age (Bell et al., 2004). Fossils found in alluvium of this age include, but are not limited to, bison, mammoth, ground sloths, saber-toothed cats, dire wolves, horses, cave bears, rodents, birds, reptiles, and amphibians (Bell et al., 2004; Helley et al., 1979; Helley et al., 1972; Hertlein, 1951; Savage, 1951; Stirton, 1951).

Sonoma Volcanics

Andesitic tuff may contain invertebrate and extinct vertebrate fossils.

Underlying the Quaternary alluvium, at an unknown depth. is a sequence of Pliocene (53,000,000 to 1,800,000 years B.P.) Sonoma Volcanic andesitic tuff (Wagner and Bortugno, 1999). Andesitic tuff may contain invertebrate and extinct vertebrate fossils representative of the Hemphillian (9,000,000 to 4,750,000 years B.P.) and Blancan (4,750,000 to 1,800,000 years B.P.) land mammal ages (Berkeley Natural History Museum 2009).

Franciscan Complex

Marine fossils occur in the unmetamorphosed rocks of the Franciscan Complex.

Presumably underlying the Napa Valley at great depth is the Franciscan Complex, a group of high-pressure and low-temperature metamorphic rocks formed during the Middle and Upper Jurassic (175,000,000 to 144,000,000 years B.P.) and the Lower Cretaceous (144,000,000 to 100,000,000 years B.P.). The Franciscan Complex is composed of metamorphosed and unmetamorphosed sandstone, shale, conglomerate, chert, greenstone, and metagraywacke, and is the basement rock of the region (Wagner and

[4] Before Present (B.P.).

Bortugno, 1999; Sloan, 2006). Marine fossils, including *Icthysaurus*, *Belemnoidea*, *Buchia*, and *Inoceramus*, occur in the unmetamorphosed rocks of the Franciscan Complex (Berkeley Natural History Museum, 2009).

Identified Cultural Resources

A total of 186 cultural resources are recorded within St. Helena (Table C-1 in Appendix C), including those that are listed in, or are eligible for listing in, the National Register of Historic Places and California Register of Historical Resources. Numerous others appear eligible for listing in the National and/or California registers. All cultural resources recorded within St. Helena are listed in Table C-1, which includes the National Register Status Code—if available—assigned to a particular resource by the California Office of Historic Preservation.

Archaeological Sites

St. Helena contains 24 recorded archaeological sites.

St. Helena contains 24 recorded archaeological sites. These sites include midden soil deposits (indicative of prehistoric habitation sites) with flaked- and ground-stone artifacts, subsistence debris, and human remains; lithic scatters with culturally flaked obsidian; and two historic-period archaeological sites, which include a stone foundation, a possible building pad, structural debris, and the possible remnants of a water wheel. The California Office of Historic Preservation has assigned a National Register Status Code of “2S2” to prehistoric archaeological site P-28-000151, indicating this resource was “determined eligible for National Register by a consensus through Section 106 process. Listed in the California Register.”

Additional prehistoric archaeological deposits may be located within St. Helena, and project-specific reviews would need to be done to assess potential impacts on archaeological sites. Areas that are near natural water sources (e.g., riparian corridors and springs) are generally considered of high sensitivity for prehistoric archaeological deposits and associated human remains. In the Napa Valley, prehistoric archaeological deposits can be associated with buried Holocene landforms, and the absence of surface materials or soils indicative of an archaeological deposit does not preclude the possibility of significant subsurface archaeological deposits.

Although only two historical archaeological deposits, P-28-001349 and CA-NAP-684H, have been recorded within St. Helena, additional deposits likely exist. Although St. Helena has witnessed commercial and residential development, such development does not preclude the possibility of intact historical archaeological deposits. The possibility of such deposits, however, must be evaluated on a project-specific basis.

Historical Built Environment

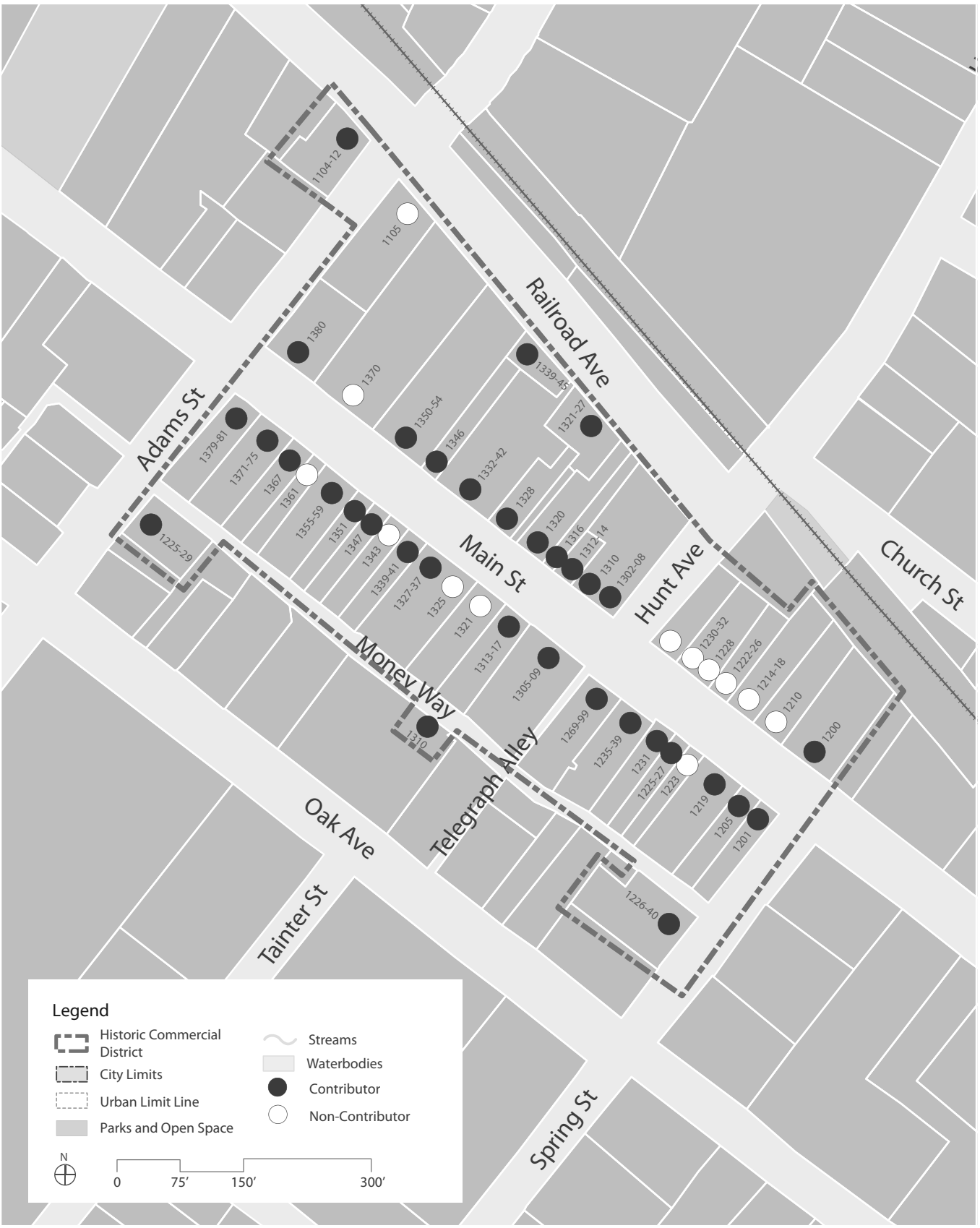
Table C-1 in Appendix C lists all recorded historical buildings and structures within the city limits by address and includes the resource identification number and National Register Status Code assigned to each property by the California Office of Historic Preservation. Some buildings, including those recently inventoried by Page & Turnbull (2006), listed on Table C-1 have not yet been assigned a National Register Status Code, although most of these appear to be eligible for the National and California registers (Heidecker, 1996; Page & Turnbull, 2006).

Figure 4.H-1 identifies the 34 buildings in the St. Helena Historic Commercial District considered to be contributors to the district's historic character or significance, along with 13 non-contributor buildings. Non-contributors are those buildings that, due to date of construction, alterations, or other factors, do not contribute to the historic character of the district.

Eleven historical resources within the city are listed in the National Register of Historic Places and California Register of Historical Resources.

Numerous historical buildings and structures have been recorded within the city limits (see Table C-1). The most common historical property types identified within the city consist of residences and commercial buildings, although other property types are present, including barns, warehouses, wineries, churches, schools, bridges, a culvert, street lights, a motel, tankhouses, stonework, roads, a railroad depot, and government buildings. The majority of these properties were recorded as part of the Napa County Historic Resources Inventory conducted by Napa Landmarks, Inc., in 1977-1978, and a recent historical architectural survey conducted by Page & Turnbull, Inc. (2006).

Eleven historical resources within the city are listed in the National Register of Historic Places and California Register of Historical Resources: (1) the Beringer Winery Historic District (Main Street); (2) Charles Krug Winery (Main Street); (3) Greystone Cellars (Main Street); (4) Main Street Commercial Historic District (Adams and Main streets—see Figure 4.H-1); (5) Southern Pacific Railroad Depot (Railroad Avenue); (6) Special Internal Revenue Bonded Warehouse (Church Street); (7) St. Helena Catholic Church (Oak Avenue); (8) St. Helena High School (Main Street); (9) St. Helena Public Library (Oak Avenue); (10) Taylor, Duckworth & Co. Foundry (Railroad Avenue); and (11) William Tell Saloon and Hotel (Spring Street). Two of these historical resources—the Beringer Winery Historic District and the Main Street Commercial Historic District—include multiple buildings and structures, which are indicated by a National Register Status Code of "1D" in Table C-1. Numerous other historical buildings in St. Helena appear eligible for listing in the National and California registers, as indicated by a National Register Status Code "3S," which would qualify such properties as historical resources for purposes of CEQA (see Table C-1 in Appendix C).



SOURCE: City of St. Helena; Napa County; MIG, Inc., 2010
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 4.H-1
Historic Resources

Paleontological Sites

No recorded paleontological resources were identified in St. Helena.

No recorded paleontological resources were identified in St. Helena. The general area is underlain by Quaternary period Holocene and Pleistocene deposits, the latter of which can contain significant Rancholabrean fossils. The depths of these deposits are not known but likely extend for several feet below the ground surface. Below these Quaternary deposits are deposits that date from the Pliocene to the Middle Jurassic. These older deposits, while sensitive for significant paleontological resources, are most likely at considerable depths below the ground surface.

Regulatory Framework

California Environmental Quality Act (CEQA) and Other State Regulations

CEQA defines a "historical resource" as a resource that meets one or more of the following criteria:

- Listed in, or determined eligible for listing in, the California Register of Historical Resources (California Register);
- Listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k);
- Identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); or
- Determined to be a historical resource by a project's lead agency (Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a)).

A historical resource consists of:

> "Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California…. Generally, a resource shall be considered by the lead agency to be 'historically significant' if the resource meets the criteria for listing on the California Register of Historical Resources" CEQA Guidelines Section 15064.5(a)(3).

In accordance with CEQA Guidelines Section 15064.5(b), a substantial adverse change in the significance of a historical resource is a significant effect on the environment.

CEQA requires a lead agency to determine if an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither.

CEQA requires a lead agency to determine if an archaeological cultural resource meets the definition of a historical resource, a unique archaeological resource, or neither (CEQA Guidelines Section 15064.5(c)). Prior to considering potential impacts, the lead agency must determine whether an archaeological cultural resource meets the definition of a historical resource in CEQA Guidelines Section 15064.5(c)(1). If the archaeological cultural resource meets the definition of a historical resource, then it is treated like any other type of historical resource in accordance with CEQA Guidelines Section 15126.4. If the archaeological cultural resource does not meet the definition of a historical resource, then the lead agency must determine if it meets the definition of a unique archaeological resource as defined at CEQA Section 21083.2(g). Should the archaeological cultural resource meet the definition of a unique archaeological resource, then it must be treated in accordance with CEQA Section 21083.2. If the archaeological cultural resource does not meet the definition of a historical resource or an archaeological resource, effects on the resource are not considered significant effects on the environment (CEQA Guidelines Section 15064.5(c)(4)). In practice, however, most archaeological sites that meet the definition of a unique archaeological resource will also meet the definition of a historical resource (Bass, Herson, and Bogdan, 1999:105).

California Health and Safety Code Section 7050.5 states that, 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 remains are discovered has determined whether or not the remains are subject to the coroner's authority. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Native American Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.

California Public Resources Code (PRC) Section 5097.5 provides for the protection of cultural and paleontological resources. This PRC section prohibits the removal, destruction, injury, or defacement of archaeological and paleontological features on any public lands under the jurisdiction of state or local authorities.

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, includes a Historic Resources Element that provides guiding and implementing policies for historical resources in the City's jurisdiction. These policies are listed below.

The existing St. Helena General Plan includes a Historic Resources Element that provides guiding and implementing policies for historical resources in the City's jurisdiction.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Historic Resources Element Guiding Policies

- 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.
- 7.5.2: Protect the historic resources that exist in the downtown commercial area.
- 7.5.3: Encourage new commercial and office development in all districts to be compatible with the image and character of the historic Main Street area.
- 7.5.4: Include the preservation of the City's historic resources in all future planning decision where identified historic resources may be affected.

Historic Resources Element Implementing Policies

- 7.5.5: Recognize the Historic Resources Inventory (1978) as the City's official list of historic resources.
- 7.5.6: Use the Historic Resources Inventory (1978) in future planning decisions.
- 7.5.7: Include the preservation of historic resources in an urban design plan.
- 7.5.8: Establish downtown design guidelines to protect historic buildings and guide façade changes.
- 7.5.9: Require new development, in or adjacent to historic areas or buildings, to be compatible in pattern and character with existing historic buildings.
- 7.5.10: Amend the existing zoning regulations to require City review prior to demolition of the City's historic resources and apply the regulations citywide.
- 7.5.11: Develop a program to mitigate the life-safety risks posed by unreinforced masonry buildings that is flexible, yet achieves a reasonable minimum level of safety while recognizing the economic impact on building owners and tenants.

To further implement the City's preservation policies, the Historic Resources Element recommends creation of an historic preservation ordinance (7.6.1); development of design guidelines for alterations to historical landmarks and new buildings constructed adjacent to such landmarks (7.6.2); development

of a program for unreinforced masonry buildings, including preserving their historical integrity during seismic retrofitting projects (7.6.3); and public education and outreach to promote the City's historical resources (7.6.4).

St. Helena Municipal Code

The St. Helena Municipal Code contains regulations for protecting, preserving, and mitigating impacts on cultural resources.

Title 16 (Subdivisions) and Title 17 (Zoning) of the St. Helena Municipal Code contain regulations for protecting, preserving, and mitigating impacts on cultural resources, as described below.

Archaeological and Paleontological Sites

Section 16.32.140 of the Municipal Code requires that subdivisions[5] affecting resources described in the existing General Plan and any applicable specific plan include a survey by a qualified archaeologist prior to development "whenever significant archeological or paleontological sites may be located within the project area." Mitigation measures for archaeological and/or paleontological resources must be implemented prior to development of the project site.

Historical Built Environment Resources

The City's zoning ordinance is contained at Title 17 of the Municipal Code, which includes three chapters that address historical built environment resources:

- *Central Business District*. Chapter 17.48 establishes a Central Business (CB) district to provide for "retail, personal service uses, offices, restaurants, hotels/motels, service stations, public and quasi-public uses, and similar and compatible uses that serve local residents and the surrounding area" (Section 17.48.010). This zoning prohibits demolition of a significant architectural or historical building—as determined by the Planning Commission—unless the Commission finds that (1) the structure poses a threat to health, safety and general welfare if it is not demolished; (2) that restoration of the structure is not feasible or practicable using current building codes including, but not limited to, the Historic Building Code provision of the Uniform Building Code of the state; and (3) that no public or other funding is available for financing renovation or purchase of the structure.

- *Small Wineries*. Chapter 17.180 promotes and implements the policies of the existing General Plan, which aim to preserve agricultural land uses within the city, by allowing for development of "small wineries" within the Winery Zoning (W) district. This zoning allows for a use permit to reestablish a pre-prohibition winery (i.e., winery buildings in use prior to

[5] "Subdivision" means the division, by any subdivider, of any unit or units of improved or unimproved land, or any portion thereof, shown on the latest equalized county assessment roll as a unit or as contiguous units, for the purpose of sale, lease, or financing whether immediate or future (St. Helena Municipal Code Section 16.04.130).

View of St. Helena Carnegie (Library) Building

January 16, 1920). Conditions for issuance of a use permit include (1) substantial evidence is available proving the building was used as a winery prior to January 16, 1920; (2) more than 50 percent of the original historic building's exterior must remain standing; (3) the appearance of the renovated building shall be consistent with its historical appearance as documented by photographs or as recommended by a qualified architectural historian; (4) preservation of the historic nature of the building would occur through an Historic Preservation (HP) overlay district (see below) or other suitable means; and (5) construction must comply with the California Uniform Building Code and/or the state Historic Building Code, as amended and adopted by the City.

- *Historic Preservation Overlay District*. Chapter 17.92 establishes a Historic Preservation Overlay (HP) district "to preserve the unique architectural character of those certain specific structures which have contributed to the City's historic development" (Section 17.92.020). The Planning Commission must determine buildings that will be protected within an HP overlay district. Protections include restrictions on historically inappropriate exterior alterations, demolition, and restoration, and economic incentives for preservation of significant buildings.

Impacts and Mitigation Measures

Significance Criteria

Based on the CEQA Guidelines, the proposed General Plan Update would have a significant impact on cultural resources if it would:

- Cause a substantial adverse change[6] 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;
- Indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

Relevant Policies

The General Plan Update includes the following policies and implementing actions that address cultural resources and are relevant to the current analysis:

> *LU2.2*. Encourage new residential development that is consistent in design, size, color and footprint with the older residences in the neighborhood.

6 Specifically, substantial adverse changes include physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource would be materially impaired

LU2.B. Develop and implement residential design guidelines and/or form-based codes, to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new residential development is consistent with the design, size and footprint of older residences in the neighborhood. Consider the impact of new development on surrounding residences, such as solar access. Explore opportunities to establish a neighborhood categorization system that allows for strict design standards in historic neighborhoods and more relaxed or creative standards in others.

LU2.E. Update zoning standards to encourage the following criteria:

- A variety of lot widths and sizes, such as that found in the older areas of town;
- Garages at the rear of lots rather than on the street;
- Lot coverage that is consistent with the scale of historic and older areas;
- Planting of street trees; and
- Setbacks, building massing and configuration consistent with older parts of town.

LU3.4. Protect historic resources in the commercial areas, and encourage appropriate rehabilitation and adaptive reuse.

LU3.5. Ensure that new retail and commercial development is compatible with and complementary to St. Helena's small-town image. In addition, within the City's Central Business District, new retail and commercial development should be of a scale and type that complements the historic character.

LU3.F. Develop and implement commercial design guidelines and/or form-based codes to provide oversight and guidance for new buildings and renovations. Guidelines should ensure that new commercial development is consistent with the City's character, particularly in historic districts.

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.

HR1.2. Protect the historic resources that exist in the downtown commercial area.

HR1.3. Encourage the adaptive reuse, rehabilitation and retrofit of historic buildings in which the original use is no longer feasible.

HR1.4. Promote the application of sustainable building practices to the preservation of historic resources.

HR1.A. Adopt a historic preservation ordinance to implement the policies recommended in the Historic Resources Element.

HR1.B. Adopt design review guidelines and/or form-based codes, standards and criteria for the alteration or rehabilitation of historic properties. The adoption of design review guidelines and/or form-based codes can assist City staff, the Planning Commission and City Council when reviewing permit requests and provide long-term regulatory consistency.

HR1.C. Adopt design review guidelines and/or form-based codes that require new development in or adjacent to historic areas or buildings to be compatible in design and character with existing historic buildings.

HR1.D. Develop an incentive program to encourage property owners to participate in historic preservation efforts. Potential program measures can include alternate building codes for historic structures and financial incentives, where necessary.

HR1.E. Develop sustainable development and green building guidelines for rehabilitation, retrofitting and adaptive reuse of historic resources. Identify incentives to encourage property owners to utilize these guidelines. (Also see the Community Design Element, Topic Area 1)

HR1.F. Continue to develop and implement downtown design guidelines and/or standards to protect historic buildings and guide façade changes.

HR1.G. Regularly update the Historic Resources Inventory to ensure that is includes a current list of historic structures in the City.

HR1.H. Incorporate the preservation of historic resources into a citywide urban design plan.

HR2.1. Strengthen public awareness of and support for the preservation and protection of the City's historic resources.

HR2.A. Expand community awareness about the value of historic preservation in order to build support among property owners and developers for the preservation and adaptive reuse of historic and cultural resources.

HR2.C. Improve community access to information about available historic preservation funding sources and related resources. Provide information about sensitive ways to incorporate sustainable materials and design practices into historic rehabilitation projects.

HR2.D. Conduct a survey of historic resources to determine different architectural types in the City and develop design guidelines specific to style and period.

CD1.6. Encourage the adaptive reuse, rehabilitation and retrofitting of historic buildings in which the original use is no longer feasible.

Impact Analysis

Less-than-Significant Impacts

Implementation of the General Plan Update would not result in any less-than-significant impacts on cultural resources.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact CULTURAL-1: Rehabilitation and adaptive reuse of significant historic buildings, and new development within historic districts or adjacent to historical resources, could result in substantial adverse changes in the significance of historical resources. (Potentially Significant)

As listed above, the General Plan Update includes multiple policies and implementing actions that attempt to mitigate impacts on historical built environment resources through rehabilitation and adaptive reuse. These policies and actions encourage (1) design/development standards for new construction and remodeling projects to ensure that such projects would not adversely affect the historical integrity of adjacent historical buildings and structures, (2) adaptive reuse of historic buildings, and (3) preservation of historic buildings and neighborhoods. These policies and implementing actions would also mitigate potential impacts on historic districts or adjacent historical buildings from development that may occur in Change Areas and Key Housing Opportunity Sites identified by the General Plan Update (see Figure 3-3 and Figure 3-4 in Chapter 3, Project Description, of this EIR) by use of design standards and/or form-based codes that ensure new construction would complement the neighborhood's historical setting.

While these policies include possible mechanisms for mitigating impacts from new construction, (i.e., design guidelines, form-based codes, and zoning ordinance updates that establish standards for setbacks, building massing, and configuration in historical neighborhoods), the General Plan Update does not specifically require the involvement of a qualified architectural historian, preservation architect, or preservation planner in developing citywide or neighborhood design and rehabilitation standards. Such expertise would ensure that the standards effectively mitigate potential impacts from rehabilitation and new development.

Additionally, alteration or rehabilitation of historical buildings, as encouraged under General Plan Update policies and implementing actions LU3.4, HR1.3, HR1.B, and HR1.E, has the potential to cause a substantial

adverse change in the significance of a historical resource. Under CEQA a "substantial adverse change" to a historical resource would occur when a resource has been impaired by alteration of those physical characteristics that justify its inclusion in, or eligibility for inclusion in, the California Register of Historical Resources (CCR Section 15064.5(b)(2)). Such a change would constitute a significant impact under CEQA.

Mitigation Measures

Mitigation Measure CULTURAL-1a: The following implementing action shall be added to the General Plan Update:

- *The City shall retain a qualified architectural historian, preservation architect, or preservation planner to assist with development of any neighborhood or citywide design standards, guidelines, or form-based codes that will be implemented in or adjacent to historic areas, e.g., the Downtown Commercial District, or adjacent to historic buildings.*

Mitigation Measure CULTURAL-1b: The following language shall be added as a policy of the Historic Resources Element of the General Plan:

- *Require that rehabilitation or restoration of historical resources be done according to the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Preservation, Rehabilitation, Restoration, Restoration, and Reconstruction of Historic Buildings.*

Pursuant to the CEQA Guidelines, if a project's treatment of a historical resource conforms to the Secretary's Standards, potential impacts on historical resources would be mitigated to less-than-significant levels and would be categorically exempt under CEQA (CCR Sections 15064.5(b)(3) and 15331).

With the inclusion of Mitigation Measures CULTURAL-1a and CULTURAL-1b, the potential impact on historical built environment resources that may occur from implementation of the General Plan Update would be reduced to a less-than-significant level. (Less than Significant)

Impact CULTURAL-2: Development allowed under the General Plan Update has the potential to cause a substantial adverse change in significant archaeological and paleontological resources. (Potentially Significant)

No policies or implementing actions of the General Plan Update address archaeological or paleontological resources. The sensitivity of the area for

such resources is evidenced in the numerous archaeological sites recorded within the city and the presence of fossils in the geologic units that underlie the city. New development allowed by the General Plan Update, including development associated with Change Areas, Key Housing Opportunity Sites, and Pipeline Projects, has the potential to affect surface and/or subsurface archaeological and paleontological resources.

Mitigation Measures

Mitigation Measure CULTURAL-2: The following new policy shall be included in the Historic Resources Element of the General Plan Update:

- *Prior to ground-disturbing development allowed under the General Plan Update, the City shall conduct a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System to determine if a project has the potential to affect an archaeological site and if additional project-specific study for cultural resources is recommended. The City shall require additional cultural resources study if recommended by the NWIC, with the study addressing project-specific impacts on archaeological and paleontological resources. The City shall incorporate the study recommendations as project conditions of approval to ensure that impacts on archaeological and/or paleontological resources are mitigated.*

With the inclusion of this new policy, this impact on archaeological and paleontological resources would be reduced to a less-than-significant level in most circumstances. However, prehistoric archaeological sites may contain cultural and human remains that have religious significance to local Native American representatives. In certain cases, impacts on such sites cannot be reduced to less-than-significant levels. Such impacts must be determined on a project-specific basis. (Less than Significant/Significant and Unavoidable)

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4.I Energy

Introduction

This section assesses St. Helena's existing energy uses and consumption, along with potential future increases in consumption levels. The potential energy effects of future development under the proposed General Plan Update are described and evaluated. The section describes how the proposed General Plan Update would affect energy consumption rates over the planning period.

Setting

Regional and Statewide Energy Use

In 2009, California imported 26.8 percent of its energy sources from the Pacific Northwest and the southwestern United States.

With the largest population of any state and the largest gross state product; California imports electricity from neighboring states (CEC, 2010). In 2009, the state imported 26.8 percent of its energy sources from the Pacific Northwest and the southwestern United States. Of the total system power, measured in gigawatt hours, including both in-state and out-of-state sources, 45.7 percent is supplied by natural gas. Table 4.I-1 shows system generation rates.

TABLE 4.I-1
CALIFORNIA TOTAL SYSTEM POWER IN GIGAWATT HOURS, 2009

Fuel Type	In-State Generation	Northwest Imports	Southwest Imports	Total System Power	Percent of Total System Power
Coal	3,977	8,581	43,271	55,829	18.2%
Large Hydro	21,040	9,334	3,359	33,733	11.0%
Natural Gas	122,216	2,939	15,060	140,215	45.7%
Nuclear	32,482	747	11,039	44,268	14.5%
Renewables	28,804	2,344	1,384	32,532	10.6%
Biomass	5,720	654	3	6,377	2.1%
Geothermal	12,907	0	755	13,662	4.5%
Small Hydro	3,729	674	13	4,416	1.4%
Solar	724	0	22	746	0.2%
Wind	5,724	1,016	591	7,331	2.4%
Total	**208,519**	**23,945**	**74,113**	**306,577**	**100.0%**

SOURCE: CEC, 2009

In 2007, the California Public Utilities Commission adopted greenhouse gas emissions requirements for any long-term power commitment made by the state's electric utilities, including purchases from out-of-state providers. The state is the leading producer of renewable energy in the United States, including all categories of renewable energy production—biomass, geothermal, and solar—and is second in wind energy production. California is also one of the state leaders in the production of hydroelectric power (DOE, 2009a; EIA, 2009a, 2009b).

Transportation accounts for 39 percent of all energy consumption in California, which makes it the largest energy-consuming sector of the state economy. The state is the largest consumer of ethanol and a leader in use of alternative fuels. Under the Clean Air Act, California is the only state allowed to set regulations for automobile emissions that are more restrictive than federal law; subsequently, other states are allowed to adopt the California regulations (DOE, 2009b).

Local Energy Use

Electricity and natural gas is used in St. Helena to light, heat, and cool urban and neighborhood structures and to power office equipment, industrial machinery, public services, and home appliances. The city also uses fossil fuels to move people and products along its transportation corridors. Energy is vital to the continued functioning of the urban environment, housing, transportation, public services and facilities in St. Helena. However, great strides can be made in the transportation and built environment sectors through conservation, green building design, retrofit, transit use, and bicycle and pedestrian infrastructure.

Energy consumption in St. Helena, like that in California as a whole, has become the focus of public and government attention with concerns over a shortage of energy supplies, rising costs for energy consumers, and the effect on global climate change.

Existing Energy Consumption

St. Helena's population of approximately 6,100 uses about 16.7 million kilowatt hours of electricity and 0.97 million therms of natural gas each year.

St. Helena had a population of approximately 6,100 in 2009. Per capita electrical energy use in Napa County was 2,740 kilowatt hours (kWh) in 2005, and per capita natural gas consumption in that same year was 159.2 therms (MIG and Napa Valley Community Foundation, 2009). With a population of 6,100, St. Helena's electrical use in one year (2005 estimates) would be 16.7 million kWh and natural gas use would be 0.97 million therms.

Usually 70 percent of residential energy use is for lighting, refrigeration, clothes drying, cooking, and hot water heating. Air conditioning is one use

that fluctuates with ambient temperatures and has the greatest effect on peak energy demand.

Greenhouse Gas Emissions

In an assessment of greenhouse gas (GHG) emissions (which are largely tied to energy use by sector), St. Helena was found to generate lower GHG emissions in the transportation sector (18.7 percent) than Napa County as a whole (54.5 percent) (Napa County-Wide Climate Action Plan Project Team, 2009). Residential uses (23.8 percent) and commercial/industrial uses (38.6 percent) were the largest contributors to GHG emissions, suggesting that conservation and energy efficiency measures targeted to the built environment would be the most effective measures for reducing overall GHG emissions and associated energy consumption.

Energy Distribution

Most of the energy consumed in the City of St. Helena is delivered to the city through established distribution networks. Pacific Gas and Electric Company (PG&E) provides electrical service and natural gas. Gasoline and other petroleum products are sold through private retailers throughout the city. Natural gas is delivered to St. Helena via pipelines, and petroleum products are delivered by tanker trucks.

Alternative Sources

A large percentage of the energy currently consumed by residents of St. Helena comes from the non-renewable sources of natural gas and petroleum. As part of the City's efforts to reduce GHG emissions, the City is encouraging the use of renewable energy by incorporating solar and green building practices.

Energy Use and Global Warming

Scientists and climatologists have cited evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to a mean increase in the earth's temperature of 1 degree Celsius over the last 100 years. Some estimates indicate that, in the next 50 years, the earth's temperature could rise another 1 to 2.5 degrees Celsius. While climate change has been a regular occurrence throughout history, it is argued that for the first time human activities may be accelerating the warming process. For an analysis of greenhouse gas production and impacts of the General Plan Update on climate change, please see Section 4.J, Greenhouse Gas Emissions.

Regulatory Framework

Federal and state agencies regulate energy consumption through various means and programs. At the local level, individual cities and counties regulate energy through their regulatory and planning activities. On the federal level, the U.S. Department of Transportation, U.S. Department of Energy, and U.S. Environmental Protection Agency are three agencies with substantial influence over energy policies and programs. Generally, federal agencies influence transportation energy consumption through establishment and enforcement of fuel economy standards for automobiles and light trucks, through federal taxes on fuel, through funding of energy-related research and development projects, and through funding for transportation infrastructure projects.

On the state level, the California Public Utilities Commission and California Energy Commission are two agencies with authority over different aspects of energy. The California Public Utilities Commission regulates privately owned utilities in the energy, rail, telecommunications, and water fields. The California Energy Commission collects and analyzes energy-related data, prepares statewide energy policy recommendations and plans, promotes and funds energy efficiency programs, and regulates the power plant siting process.

At the local level, the City of St. Helena, through its regulatory and planning activities, directly influences how, and to what extent, energy is used in the city. Local regulations governing the design, construction and use of buildings affect operational energy needs. Transportation and land use policy decisions directly and indirectly affect petroleum-based fuel requirements (e.g., mixed use land uses and improved pedestrian systems can reduce reliance on the private automobile).

Some of the more relevant federal, state, and local energy-related laws and plans are discussed below.

Federal Regulations

Energy Policy and Conservation Act

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards in order to conserve oil.

The Energy Policy and Conservation Act (EPCA) of 1975 established nationwide fuel economy standards in order to conserve oil. Pursuant to the EPCA, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation, is responsible for revising existing fuel economy standards and establishing new vehicle fuel economy standards.

The Corporate Average Fuel Economy (CAFE) program was established to determine passenger vehicle manufacturer compliance with the government's fuel economy and emissions standards. (Light trucks and SUVs are exempt

from CAFE.) Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale in the United States. The U.S. EPA calculates a CAFE value for each manufacturer based on city and highway fuel economy test results and vehicle sales. The CAFE values are a weighted harmonic average of the EPA city and highway fuel economy test results. Based on information generated under the CAFE program, the U.S. Department of Transportation is authorized to assess penalties for noncompliance.

Energy Policy Act of 1992 (EPAct)

The Energy Policy Act of 1992 (EPAct) was passed to reduce the country's dependence on foreign petroleum and improve air quality. EPAct includes several parts intended to build an inventory of alternative fuel vehicles (AFVs) in large, centrally fueled fleets in metropolitan areas. EPAct requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year. In addition, financial incentives are also included in EPAct. Federal tax deductions will be allowed for businesses and individuals to cover the incremental cost of AFVs. States are also required by the act to consider a variety of incentive programs to help promote AFVs.

Energy Policy Act of 2005

The Energy Policy Act of 2005 was signed into law on August 8, 2005. Generally, the act includes provisions for renewed and expanded tax credits for electricity generated by qualified energy sources (e.g., landfill gas); provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

Energy Independence and Security Act of 2007

The Energy Independence and Security Act of 2007 will improve vehicle fuel economy by setting stricter standards and help reduce U.S. dependence on oil.

The Energy Independence and Security Act of 2007, adopted on December 19, 2007, will improve vehicle fuel economy by setting stricter CAFE standards and help reduce U.S. dependence on oil. It represents a step forward in expanding the production of renewable fuels, reducing dependence on oil, and confronting global climate change.

Requirements under the Energy Independence and Security Act of 2007 (Pub.L. 110-140, originally named the CLEAN Energy Act of 2007) will help reduce America's dependence on oil by:

- Increasing the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard (RFS) requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels.

- Reducing U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards by 40 percent saving billions of gallons of fuel.

By addressing renewable fuels and CAFE standards, the act will build on progress made by the Energy Policy Act of 2005 in setting out a comprehensive energy strategy for the 21st century.

The National Energy Policy, developed in May 2001, proposes recommendations on energy use and on the repair and expansion of the nation's energy infrastructure. The policy is based on the finding that growth in U.S. energy consumption is outpacing the current rate of production. The policy, using data and projections form the Sandia National Laboratories and the U.S. Department of Energy's Energy Information Administration, states that through 2020, the growth in the consumption of oil is predicted to increase by 33 percent, natural gas by over 50 percent, and electricity by 45 percent. While federal policy promotes further improvements in energy use through conservation, it focuses on increased development of domestic oil, gas, and coal and the use of hydroelectric and nuclear power resources. To address the reliance on natural gas for new electric power plants, the federal policy proposes research in clean coal technology and expanding the generation of energy to include energy derived from landfill gas, wind, and biomass sources. However, with the recent change in federal administrations, the federal landscape on energy policy may shift toward sustainable technologies. There have been discussions at the federal level to raise the fuel tax. The National Commission on Surface Transportation Infrastructure Financing is considering the idea, but the outcome is unknown.

State Regulations

The California Constitution vests in the California Public Utilities Commission (CPUC) the exclusive power and sole authority to regulate privately owned or investor-owned public utilities. This exclusive power extends to all aspects of the location, design, construction, maintenance, and operation of public utility facilities. Nevertheless, the CPUC has provisions for regulated utilities to work closely with local governments and give due consideration to their concerns.

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as the California Energy Commission. The act established a state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures.

State of California Energy Plan

The 1997 California Energy Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs.

The CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for low-emission vehicles and addressing their infrastructure needs; and encouragement of urban designs that reduce vehicle miles traveled and accommodate pedestrian and bicycle access.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The state's three major energy policy agencies (the California Public Utilities Commission, the California Energy Commission, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 *Energy Action Plan II*, the Energy Commission and the Public Utilities Commission updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP such as the emerging importance of climate change, transportation-related energy issues and research and development activities. The Energy Commission adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the state's ongoing actions in the context of global climate change.

2007 Integrated Energy Policy Report

Senate Bill 1389 (SB 1389, Bowen and Sher, Chapter 568, Statutes of 2002) requires the California Energy Commission to:

> "[C]onduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the

environment, ensure energy reliability, enhance the state's economy, and protect public health and safety." (Pub. Res. Code § 25301(a)).

The California Energy Commission adopts an Integrated Energy Policy Report (IEPR) every two years and an update every other year. The most recent IEPR is the 2009 IEPR adopted on December 16, 2009 (CEC, 2010). The focus of the 2009 IEPR is:

- Reduced greenhouse gas emissions while maintaining a reliable, efficient and affordable energy system that minimizes environmental impact of energy production and use;
- Attainment of AB 32 goals to reduce California's greenhouse gas emissions to 1990 levels by 2020; and
- Development and adoption of "green" technologies critical for long-term reliability and economic growth.

Assembly Bill 1007: State Alternative Fuels Plan

The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production.

Assembly Bill 1007 (Pavley, Chapter 371, Statutes of 2005) required the California Energy Commission to prepare a state plan to increase the use of alternative fuels in California. The Energy Commission prepared the *State Alternative Fuels Plan* in partnership with the California Air Resources Board and in consultation with the other state, federal, and local agencies. The plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce greenhouse gas emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 2076: Reducing Dependence on Petroleum

In response to Assembly Bill 2076 (Pavley, Chapter 936, Statutes of 2000), the Energy Commission and the California Air Resources Board prepared and adopted a joint agency report, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita vehicles miles traveled (California Energy Commission and Air Resources Board, 2003a). Further, in response to the Energy Commission's 2003 and 2005 *Integrated Energy Policy Reports*, the Governor directed the Energy Commission to take the lead in developing a long-term plan to increase alternative fuel use (Schwarzenegger, 2005).

A performance-based goal is to reduce petroleum demand to 15 percent below 2003 demand. The options include (California Energy Commission and Air Resources Board, 2003b):

- *Near-Term Options (could be fully implemented by 2010)*
  - Use more fuel-efficient replacement tires with proper inflation
  - Improve fuel economy in government fleets
  - Improve private vehicle maintenance
  - Mid-Term Options (could be fully implemented in the 2010-2020 time frame)
  - Double fuel efficiency of current model light duty vehicles to 40 miles/gallon
  - Use natural gas-derived Fischer-Tropsch fuel as a 33 percent blending agent in diesel
- *Long-Term Options*
  - Introduce fuel cell light duty vehicles in 2012, increasing to 10 percent of new vehicle sales by 2020, and 20 percent by 2030

Recommendations include:

- The Governor and Legislature should adopt the recommended statewide goal of reducing demand for on-road gasoline and diesel to 15 percent below the 2003 demand level by 2020 and maintaining that level for the foreseeable future.
- The Governor and Legislature should work with the California delegation and other states to establish national fuel economy standards that double the fuel efficiency of new cars, light trucks and SUVs.
- The Governor and Legislature should establish a goal to increase the use of non-petroleum fuels to 20 percent of on-road fuel consumption by 2020 and 30 percent by 2030.

California Environmental Quality Act (CEQA)

The CEQA Guidelines describe energy conservation in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources such as wind, tidal and solar.

Appendix F of the CEQA Guidelines describes the types of information and analyses related to energy conservation that are to be included in Environmental Impact Reports (EIRs). In Appendix F of the CEQA Guidelines, energy conservation is described in terms of decreased per capita energy consumption, decreased reliance on natural gas and oil, and increased reliance on renewable energy sources such as wind, tidal and solar. To assure that energy implications are considered in project decisions, EIRs must include a discussion of the potentially significant energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy.

Senate Bill (SB) 375

SB 375, signed by Governor Schwarzenegger in September 2008, requires metropolitan planning organizations (MPOs) to include sustainable community strategies (SCS), as defined, in their regional transportation plans for the purpose of reducing greenhouse gas emissions, aligns planning for transportation and housing, and creates specified incentives for the implementation of the strategies. Specifically, the bill made findings and declarations concerning the need to make significant changes in land use and transportation policy in order to meet the greenhouse gas reduction goals established by AB 32.

Senate Bill 375 addresses the need to make significant changes in land use and transportation policy in order to meet the greenhouse gas reduction goals.

It requires the California Air Resources Board (ARB) to set regional targets for the purpose of reducing greenhouse gas emissions from passenger vehicles, for 2020 and 2035. If regions develop integrated land use, housing, and transportation plans that meet the SB 375 targets, new projects can be relieved of certain review requirements of CEQA. ARB appointed the SB 375 Regional Technical Advisory Committee (RTAC) to provide recommendations on factors to be considered and methodologies to be used in the ARB target setting process, as required under SB 375. The Committee must provide its recommendations in a report to ARB by September 30, 2009. RTAC had its first meeting on February 3, 2009.

Title 24 Building Efficiency Standards

The State of California regulates energy consumption under Title 24, Part 6 of the California Code of Regulations (also known as the California Energy Code). The Title 24 Building Energy Efficiency Standards were developed by the California Energy Commission (CEC) and apply to energy consumed for heating, cooling, ventilation, water heating, and lighting in new residential and non-residential buildings. Under Assembly Bill 970, signed September 2000, the CEC is required to periodically update and implement its appliance and building efficiency standards to make “maximum feasible” reduction in unnecessary energy consumption.

Local Regulations

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city’s long-term vision as it pertains to housing, transportation, historic preservation, open space and other areas.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Impacts and Mitigation Measures

Significance Criteria

Implementation of the St. Helena General Plan Update would have a significant energy impact if it would result in:

- Increased need for or inefficient use of local energy sources by residential, commercial, industrial, or public uses;
- Increased reliance on natural gas and oil or decreased use of renewable resources; or
- Increased use of energy resources for transportation systems.

Relevant Policies

The following policies and implementing actions of the General Plan Update are relevant to energy impacts as defined by the significance criteria above. Some policies also address sustainability. Many of the policies in the Climate Change chapter of the General Plan Update came from the "Napa Countywide Community Climate Action Framework" (Napa County, 2009).

> *CD1.2*. Ensure the construction of sustainable buildings and landscaping in all public and private development projects.
>
> *CD1.3*. Require construction and development practices that reduce energy demand through conservation and efficiency, such as the use of green building materials, site design to maximize passive heating and cooling and energy generation. (Also see the Climate Change Element, Topic Area 2)
>
> *CD1.4*. Strengthen water conservation measures that result in significant reductions in local water use and the protection of local water resources. Conservation measures may include on-site water reuse, water efficient landscaping and use of low-flow appliances, among others. (Also see the Climate Change Element, Topic Area 4)
>
> *CD1.6*. Encourage the adaptive reuse, rehabilitation and retrofitting of historic buildings in which the original use is no longer feasible. (Also see the Historic Resources Element, Topic Area 1)
>
> *CD1.7*. Promote the application of sustainable building practices to the preservation of historic resources. (Also see the Historic Resources Element, Topic Area 1)

CD1.B. Adopt a Green Building and Landscaping Ordinance that establishes green building and landscaping site design standards customized to meet the unique climatic context of the community. Partner with third party agencies, such as PG&E, to encourage the inclusion of energy-efficient systems in remodels and retrofits of existing buildings and residences. Offer incentives for improving energy-efficiency in existing buildings. Landscaping standards should limit impervious paving and identify standards and incentives that encourage the use of locally-propagated native, low-water, drought-tolerant planting and integrated pest management practices.

CC1.1. Promote the City's commitment to urban-centered growth, adopting zoning and design standards to develop mixed-use, "walkable" and "bikeable" neighborhoods. [Draft Napa Countywide Community Climate Action Plan Framework, Action T1]

CC1.2. Promote land use decisions that support the County's goals to maintain and improve the County's overall balance of jobs and housing, by locating jobs and housing in proximity to each other and improving the match between wages and housing cost. [Draft Napa Countywide Community Climate Action Plan Framework, Action T2]

CC1.3. Support transportation planning efforts to optimize fuel efficiency. [Draft Napa Countywide Community Climate Action Plan Framework, Action T7]

CC1.A. Adopt and implement pedestrian and bicycle networks within St. Helena that connect to a countywide multi-use trail that extends from Calistoga to American Canyon. [Draft Napa Countywide Community Climate Action Plan Framework, Action T3]

CC1.B. Maintain and enhance existing express bus, local bus and paratransit services. Establish a northbound up-Valley express bus during peak commute hours. Ensure that these services provide opportunities to connect with proposed countywide service improvements, such as a centralized transit center in downtown Napa. [Draft Napa Countywide Community Climate Action Plan Framework, Action T4]

CC1.C. Expand Park and Ride areas and other support facilities to encourage public transportation use, and car and van pooling. [Draft Napa Countywide Community Climate Action Plan Framework, Action T5]

CC1.D. Conduct an evaluation of truck and freight rail routes through the City. Based on these findings, develop policies and strategies to improve circulation and neighborhood compatibility issues. [Draft Napa Countywide Community Climate Action Plan Framework, Action T8]

CC1.E. Adopt and implement transportation plans in accordance with the Napa County Transportation and Planning Agency's (NCTPA) Strategic Transportation Plan to increase transit service and ridership in St. Helena

and connections with County transit services. [Draft Napa Countywide Community Climate Action Plan Framework, Action T9]

CC1.F. Establish programs to reduce vehicle miles traveled by supporting local hiring, food production, farmers' markets and community-based "buy local" campaigns. For General Plan purposes, "local" includes St. Helena and its residents, as well as the residents and areas of the surrounding towns and unincorporated County that have traditionally been served by St. Helena's commercial and retail services. [Draft Napa Countywide Community Climate Action Plan Framework, Action T10]

CC1.G. Evaluate parking standards to help reduce vehicle miles traveled. [Draft Napa Countywide Community Climate Action Plan Framework, Action T11]

CC1.H. Increase walkability and bikeability to encourage a reduction in local auto trips. Strengthen outreach to increase awareness of pedestrian and bicycle amenities throughout the City.

CC1.I. Require discretionary development projects to assess and mitigate the impacts of vehicle miles traveled using transportation demand management programs, including providing transit amenities. [Draft Napa Countywide Community Climate Action Plan Framework, Action T12]

CC1.J. Initiate programs that encourage car-free tourism through incentives, outreach, awareness and creating a bicycle and pedestrian-friendly environment. [Draft Napa Countywide Community Climate Action Plan Framework, Action T13]

CC1.K. Adopt and implement programs to assist businesses and organizations switch from fossil fuel-powered fleet vehicles to vehicles powered by clean, renewable energy sources. [Draft Napa Countywide Community Climate Action Plan Framework, Action T14]

CC1.L. Develop parks and open spaces in support of efforts to create walkable, bikeable mixed-use neighborhoods, especially to complement higher-density land uses.

CC1.M. Design and operate the public street system to optimize fuel efficiency. Consider fuel efficiency in the design of street extensions, connections and right-of-way controls at intersections, and monitor and adjust traffic signals. [Draft Napa Countywide Community Climate Action Plan Framework, Action T7]

CC2.1. Encourage measures to reduce energy demand through conservation and efficiency. [Draft Napa Countywide Community Climate Action Plan Framework]

CC2.2. Support local efforts to improve the energy supply by switching from fossil fuels to renewables. [Draft Napa Countywide Community Climate Action Plan Framework]

CC2.A. Partner with the County of Napa to implement an AB811 program that makes funding available to residential and commercial property owners seeking to improve their properties to conserve energy and water, and to generate solar energy. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE1]

CC2.B. Pursue state and federal funding programs designed to reduce energy demand through conservation and efficiency. [Draft Napa Countywide Community Climate Action Plan Framework, Action B2]

CC2.C. Implement improved energy conservation (Title 24) standards for new buildings, and other state building code standards for high performance "green" buildings, beginning in 2011. Utilize established green building standards, such as Leadership in Energy and Environmental Design (LEED) and Build it Green. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE3]

CC2.D. Adopt ordinances to reduce energy use by promoting domestic water conservation and requiring water-efficient landscape improvements associated with new construction. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE4]

CC2.E. Reduce greenhouse gas emissions from buildings and energy use. Require or request that new development projects assess greenhouse gas emissions due to energy use, and incorporate energy and water conservation measures into projects. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE5]

CC2.F. In support of countywide energy generation efforts, increase local renewable energy generation. Adopt production standards for the City based on quantifiable measures that increase per capita generation levels. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE6]

CC2.G. Remove regulatory impediments and economic disincentives associated with the generation and use of energy from renewable sources, such as wind, geothermal and solar energy. [Draft Napa Countywide Community Climate Action Plan Framework, Action BE7]

CC2.H. Adopt design review guidelines and/or form-based codes for new development that require the planting of deciduous shade trees along the south side of parcels in order to improve shade conditions.

CC2.I. Establish programs that encourage owners to retrofit existing structures to incorporate energy-efficient and "green" building standards. (Also see the Community Design Element, Topic Area 1)

Impact Analysis

Less-than-Significant Impacts

Inefficient Energy Use and Increased Reliance on Natural Gas and Oil

Under the Likely Buildout Scenario, new residential development would increase energy use in the city by about 15 percent over the planning horizon. Energy use associated with new commercial, industrial, and public services facilities would also increase energy use within the city.

Building design and retrofit measures can make a building more energy-efficient. Because the design and retrofit of commercial and industrial buildings differ from design and retrofit of residential buildings, there is a greater potential for energy savings in commercial and industrial facilities. This is particularly true due to the large amount of energy typically used for manufacturing processes, space heating and cooling, refrigeration, and lighting. New construction provides the simplest opportunity for implementation of energy-saving techniques; however, older buildings can also benefit from retrofitting for energy efficiency. The city requires that all building projects that are subject to discretionary review, including design review, incorporate green building practices into their design. The city will also be adopting the new CalGreen code.

For new development, improved site planning and building design can conserve a considerable amount of energy. Most commercial, industrial, and public services structures are custom-designed and can consider building materials, orientation, and other measures not available to smaller units. The design review process provides an opportunity for assisting developers in the selection of appropriate energy conservation and efficiency measures and implementing energy conservation programs. This process provides a mechanism for ensuring that new development is constructed with measures that exceed Title 24 requirements.

Implementation of the General Plan Update policies and implementing actions listed above aimed at conserving energy within the city would avoid wasteful energy use and would promote the use of alternative energy sources within the city. Many policies are aimed at increasing the walkability of the City of St. Helena, which would reduce fuel use within the transportation sector. In addition, the proposal for a new Mixed Use designation in the city’s core would also improve walkability within the city. The General Plan Update also contains greenhouse gas emission reduction policies designed to conserve energy and promote transit, bicycle, and pedestrian travel, and other goals and policies that would also serve to reduce overall energy use and promote the use of alternative energy sources.

The potential for inefficient energy use and increased reliance on natural gas and oil would therefore be a less-than-significant impact. Expansion and intensification of urban uses within the City of St. Helena could potentially increase use of natural non-renewable energy sources for lighting and air conditioning within homes and workplaces, transportation throughout the city, and operation of entertainment and recreation facilities. Increased use of non-renewable energy would occur with city growth, but proposed General Plan Update policies and implementing actions would reduce this potential impact to a less-than-significant level.

Energy Used for Transportation

Transportation currently requires a significant amount of non-renewable energy associated with petroleum products. Land use patterns directly correlate with transportation energy use, and compact, dense development can greatly reduce transportation energy demands by reducing vehicle miles traveled and encouraging alternative transportation modes.

The land use patterns established by the proposed General Plan Update would not be substantially different from those allowed by the existing General Plan. However, the provision for a new Mixed Use land use designation would foster walkability in the city's core area. New areas for development are also shown near the city's core, which could reduce overall transportation requirements. The proposed General Plan Update would reinforce growth within the City's Urban Limit Line and encourage higher-intensity land uses.

Overall energy consumption related to transportation would continue to increase as growth occurs under the proposed General Plan Update; however, policies outlined in the General Plan Update would reduce reliance upon single-occupancy vehicles by encouraging the use of alternative modes of transportation. The impact related to transportation-related energy use would therefore be less than significant.

Potentially Significant Impacts

The proposed General Plan Update would not result in any potentially significant energy impacts.

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4.J Greenhouse Gases

Introduction

This section summarizes information on the potential greenhouse gas (GHG) emissions associated with the environment in St. Helena and provides an evaluation of the GHG-related effects of the proposed General Plan Update. The analysis considers both direct and indirect GHG emission sources in the area for both the existing and projected buildout conditions. Mitigation measures are recommended that address General Plan Update policies and implementing actions.

Setting

Greenhouse gases trap heat in the atmosphere and regulate the earth's temperature.

GHGs are gases that trap heat in the atmosphere and regulate the earth's temperature. This effect, known as the Greenhouse Effect, is responsible for maintaining a habitable climate. The most common GHGs are carbon dioxide and water vapor but there are also several others, most importantly methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). These are released into the earth's atmosphere through a variety of natural processes and human activities. Key points about GHGs include the following:

- Carbon dioxide and nitrous oxide are byproducts of fossil fuel combustion;
- Nitrous oxide is also associated with agricultural operations such as fertilization of crops;
- Methane is commonly created by off-gassing from agricultural practices (e.g. keeping livestock), composting and landfill operation;
- Chlorofluorocarbons were widely used as refrigerants, propellants, and cleaning solvents, but their production has been mostly eliminated by international treaty;
- Hydrofluorocarbons are now used as a substitute for chlorofluorocarbons in refrigeration and cooling; and
- Perfluorocarbons and sulfur hexafluoride emissions are commonly created by industries such as aluminum production and semi-conductor manufacturing.

Each GHG has its own potency and effect upon the earth's energy balance. This is expressed in terms of a global warming potential (GWP), with carbon dioxide being assigned a value of 1 and sulfur hexafluoride being several orders of magnitude stronger with a GWP of 23,900. In GHG emission inventories, the weight of each gas is multiplied by its GWP and is measured in units of carbon dioxide equivalents (CO2e).

An expanding body of scientific research supports the theory that global warming is currently affecting changes in weather patterns, average sea level, ocean acidification, chemical reaction rates, and precipitation rates, and that it will increasingly do so in the future. The climate and several naturally occurring resources within California could be adversely affected by the global warming trend. Increased precipitation and sea level rise could increase coastal flooding, saltwater intrusion (a particular concern in the low-lying Sacramento–San Joaquin Delta, where potable water delivery pumps could be threatened), and degradation of wetlands. Mass migration and/or loss of plant and animal species could also occur. Potential effects of global climate change that could adversely affect human health include more extreme heat waves and heat-related stress; an increase in climate-sensitive diseases; more frequent and intense natural disasters such as flooding, hurricanes, and drought; and increased levels of air pollution.

Regulatory Framework

Global climate change resulting from greenhouse gas emissions is an emerging environmental concern at the international, national, and state levels.

Global climate change resulting from GHG emissions is an emerging environmental concern being raised and discussed at the international, national, and state levels. At each level, agencies are considering strategies to control emissions of gases that contribute to global warming.

Federal Laws and Regulations

The United States participates in the United Nations Framework Convention on Climate Change (UNFCCC). While the United States signed the Kyoto Protocol, which would have required reductions in GHGs, Congress never ratified the protocol. The federal government chose voluntary and incentive-based programs to reduce emissions and has established programs to promote climate technology and science. In 2002, the United States announced a strategy to reduce the GHG intensity of the American economy by 18 percent over a 10-year period from 2002 to 2012.

In 2009, the United States Environmental Protection Agency (USEPA) issued a final rule for mandatory reporting of GHG emissions. This rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufactures of heavy-duty and off-road vehicles and vehicle engines, and requires annual reporting of emissions. The Final Rule went into effect on December 29, 2009, with data collection beginning on January 1, 2010, and the first annual reports due in March 2011. This rule does not regulate the emission of GHGs; it only requires the monitoring and reporting of greenhouse gas emissions for those sources above certain thresholds. The USEPA adopted a Final Endangerment Finding for the six defined GHGs on December 7, 2009. The Endangerment Finding is required before the USEPA can regulate GHG emissions under the federal Clean Air

Act (CAA).[1] To date, the USEPA has not promulgated rules or regulations to limit GHG emissions.

State Laws and Regulations

The effects of climate change on California's ecosystem and economy remain uncertain. The state has many areas of concern regarding climate change with respect to global warming. According to the 2006 Climate Action Team Report (California Environmental Protection Agency, 2006), the following climate change effects and conditions can be expected in California over the course of the next century:

- A diminishing Sierra snowpack, affecting the state's water supply;
- Increasing temperatures from 8 to 10 degrees Fahrenheit under the higher emission scenarios, leading to a 25- to 35-percent increase in the number of days ozone pollution standards are exceeded in most urban areas;
- Coastal erosion along the length of California and seawater intrusion into the Sacramento River Delta from a 4- to 33-inch rise in sea level, exacerbating flooding in already vulnerable regions;
- Increased vulnerability of forests due to pest infestation and increased temperatures;
- Increased challenges for the state's important agricultural industry from water shortages, increasing temperatures, and saltwater intrusion into the Delta; and
- Increased electricity demand, particularly in the hot summer months.

The California Energy Commission regulates electricity production, which is one of the major sources of greenhouse gases.

California has been directly and indirectly regulating emissions of GHGs, beginning in 1975 when the Legislature created the California Energy Commission (CEC). The CEC regulates electricity production, which is one of the major sources of GHGs.

Title 24, Part 6 of the California Code of Regulations (1978)

The Energy Efficiency Standards for Residential and Nonresidential Buildings were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods. The 2008 Title 24 building code standards, which include building energy efficiency standards, went into effect on January 1, 2010. Among the updates for new residences are

[1] In 2007, the U.S. Supreme Court ruled in Massachusetts v. Environmental Protection Agency (549 U.S. 497) that the USEPA has authority to regulate greenhouse gases under the CAA.

requirements for better insulation, heat-reflecting windows and "cool roofs" to reduce air conditioning loads. Warehouse buildings must install skylights to take advantage of daylighting and cut electricity consumption. CALGreen supplements Title 24 and requires all new buildings in the state to incorporate energy-saving features. New standards address water efficiency, construction waste, interior finishes, and landscape irrigation.

Assembly Bill 1493 (2002)

Assembly Bill (AB) 1493 required the California Air Resources Board (CARB) to develop and adopt regulations that reduce GHGs emitted by passenger vehicles and light duty trucks.

State of California Executive Order S-3-05 (2005)

In June 2005, the Governor of California signed Executive Order S-3-05, which identified the California Environmental Protection Agency (Cal/EPA) as the lead coordinating state agency for establishing climate change emission reduction targets in California. A "Climate Action Team," a multi-agency group of state agencies, was set up to implement Executive Order S-3-05. The Governor's Executive Order established aggressive emissions reductions goals: by 2010, GHG emissions must be reduced to 2000 levels; by 2020, GHG emissions must be reduced to 1990 levels; and by 2050, GHG emissions must be reduced to 80 percent below 1990 levels. GHG emission reduction strategies and measures to reduce global warming were identified by the California Climate Action Team in 2006.

Assembly Bill 32, California Global Warming Solutions Act (2006) and AB 1493, SB 1078, and SB 107

AB 32 requires that California cap greenhouse gas emissions at 1990 levels by 2020.

In 2006, the Governor of California signed AB 32, the Global Warming Solutions Act, into legislation. AB 32 requires that California cap GHG emissions at 1990 levels by 2020. This legislation requires CARB to establish a program for statewide GHG emissions reporting and monitoring/enforcement of that program. CARB recently published a list of discrete GHG emissions reduction measures that can be implemented immediately. CARB is also required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. CARB's Early Action Plan identified regulations and measures that could be implemented in the near future to reduce GHG emissions.

The AB 32 Scoping Plan was adopted in late 2008 (CARB, 2008). Central to this plan is a cap and trade program covering 85 percent of the state's emissions. This program will be developed in conjunction with the Western Climate Initiative, comprised of seven states and three Canadian provinces, to create a regional carbon market. The plan also proposes that utilities produce a

third of their energy from renewable sources such as wind, solar, and geothermal, and proposes to expand and strengthen existing energy efficiency programs and building and appliance standards. The plan also includes full implementation of the Pavley standards to provide a wide range of less polluting and more efficient cars and trucks to consumers who will save on operating costs through reduced fuel use. It also calls for development and implementation of the Low Carbon Fuel Standard (LCFS), which will require cleaner domestic-produced fuels.[2] The regulatory process to implement the plan began in 2009. The details in regulating emissions and developing targeted fees to administer the program will be developed through this process, which is expected to last two years. Measures must be enacted by 2012.

The transportation sector will account for the greatest reduction in GHG emissions. Many of the measures to reduce GHG emissions from transportation will come from CARB. AB 1493, the Pavley Bill, directed CARB to adopt regulations to reduce emissions from new passenger vehicles. CARB's AB 32 Early Action Plan released in 2007 included a strengthening of the Pavley regulation for 2017 and included a commitment to develop the LCFS. CARB's AB 32 Scoping Plan assigned an approximate 20-percent reduction in emissions from passenger vehicles with implementation of AB 1493. The newly adopted LCFS is expected to reduce emissions by over 7 percent. Additional measures to increase existing vehicle fuel efficiency (both trucks and autos) are expected to reduce emissions by almost 3 percent.

California's Renewable Portfolio Standard was established in 2002 under SB 1078 and accelerated in 2006 under SB 107. Under AB 32, the Renewable Portfolio Standard will require the renewable portion of the retail portion of energy production to reach 33 percent by 2020. About 12 percent of PG&E's current portfolio qualifies as renewable, so a 21-percent gain would occur under the new rules (BAAQMD, 2010a).

Senate Bill 97, Modification to the Public Resources Code (2007)

Pursuant to Senate Bill 97 (SB 97), the Governor's Office of Planning and Research (OPR) developed and adopted revisions to the CEQA Guidelines addressing GHGs. The guidelines incorporate proposed text changes related to the significance criteria for evaluating GHG emissions on the environment. The draft guidelines were formalized on March 18, 2010 and all CEQA documents prepared after this date are required to comply with the OPR-approved amendments to the CEQA Guidelines. As part of these guidelines, OPR recommends that each agency develop an approach to addressing GHG emissions that is based on the best available information. The

[2] Note that the LCFS is intended to reduce the carbon intensity in fuels by 10 percent; however, the reduction will be on the order of 7 percent when considering the life-cycle of the fuel (e.g., producing, refining, and transportation).

approach includes three basic steps: (1) identify and quantify emissions, (2) assess the significance of the emissions, and (3) if emissions are significant, identify mitigation measures or alternatives that would reduce the impact to a less-than-significant level.

Senate Bill 375, California's Regional Transportation and Land Use Planning Efforts (2008)

To control indirect greenhouse gas emissions caused by urban sprawl, SB 375 provides incentives for local governments and developers to implement new, conscientiously planned growth patterns.

Recently, California enacted legislation (SB 375) to expand the efforts of AB 32 by controlling indirect GHG emissions caused by urban sprawl. SB 375 develops emissions-reduction goals that regions can apply to planning activities. SB 375 provides incentives for local governments and developers to implement new, conscientiously planned growth patterns. This includes incentives for creating attractive, walkable, and sustainable communities and revitalizing existing communities. The legislation also allows developers to bypass certain environmental reviews under CEQA if they build projects consistent with the new "Sustainable Community Strategies." Development of more alternative transportation options that would reduce vehicle trips and miles traveled, along with traffic congestion, will be encouraged. SB 375 enhances CARB's ability to reach the AB 32 goals by directing the agency in developing regional GHG emission reduction targets to be achieved from the transportation sector for 2020 and 2035. CARB will work with the metropolitan planning organizations (e.g., Association of Bay Area Governments and Metropolitan Transportation Commission) to align their regional transportation, housing, and land use plans to reduce vehicle miles traveled and demonstrate the region's ability to attain its GHG reduction targets. A similar process is used to reduce transportation emissions of ozone precursor pollutants in the Bay Area.

Executive Order S-13-08 (2008)

This Executive Order directed California agencies to assess and reduce the vulnerability of future construction projects to impacts associated with sea level rise.

California's Heavy Duty Vehicle Greenhouse Gas Emissions Reduction Measure

On December 12, 2008 (one day after adopting the AB 32 Climate Action Plan), CARB adopted the Heavy Duty Vehicle GHG Emission Reduction measure that requires long-haul truckers to install fuel-efficient tires and aerodynamic devices on their trailers. This measure will reduce GHG emissions through improved fuel economy.

Bay Area Air Quality Management District (BAAQMD) Programs

In 2005, the Bay Area Air Quality Management District (BAAQMD) initiated a Climate Protection Program that integrates climate protection activities into existing BAAQMD programs and functions. Current BAAQMD climate action activities include grant programs, CEQA commenting, regulations, inventory development, and outreach. BAAQMD awarded $3 million to 53 local climate protection programs aimed at reducing GHG emissions in the Bay Area. Elementary school teaching curriculums have been developed by the BAAQMD. BAAQMD also provides technical assistance to local governments and other interested parties, and promotion of collaborative efforts among stakeholders. BAAQMD has been a supporter of Napa County's effort to develop a Climate Action Framework (described below).

A regional GHG emission inventory for 2002 was developed by BAAQMD and recently updated for 2007 conditions (BAAQMD, 2010a). This inventory provides an overview of GHG emission sources in the Bay Area, including a breakdown by county levels and emission sectors. The inventory allows BAAQMD staff and others to identify emission sectors where potential GHG and criteria pollutant emission reductions can be achieved.

In 2008, BAAQMD adopted a fee program that applies to permitted stationary sources. These fees are used to fund BAAQMD's climate protection programs, while providing an incentive for sources to reduce their emissions.

BAAQMD is currently developing a comprehensive clean air plan update to address regional air pollution. This plan will also include BAAQMD plans to reduce GHG emissions.

The Bay Area Air Quality Management District recently adopted new CEQA Thresholds of Significance that address greenhouse gas emissions from projects and plans.

BAAQMD recently adopted new CEQA Thresholds of Significance that address GHG emissions from projects and plans. For planning activities, the new thresholds judge the significance based on the projected emissions per capita. Alternatively, the significance of the impact could be evaluated based on the consistency of the plan with an adopted GHG Reduction Strategy that is found to be consistent with AB 32 reduction goals; if the plan is consistent, it would not result in a significant impact. The BAAQMD CEQA Guidelines lay out the requirements that qualify an acceptable GHG Reduction Strategy (BAAQMD, 2010b).

Napa Countywide Community Climate Action Framework

The Napa Countywide Community Climate Action Framework outlines 53 actions that, when translated into local programs and projects, will help meet climate protection targets.

The community review draft of the Napa Countywide Community Climate Action Framework was released in December 2009 (NCTPA et al., 2009). Preparation of this document was supported by BAAQMD, Napa County Transportation and Planning Agency (NCTPA), Napa Valley Community Foundation, Napa County, and the cities of American Canyon, Calistoga, Napa, St. Helena, and Yountville. The Community Climate Action Framework provides a consensus-based context for further more detailed planning efforts. Building upon the emissions inventories developed for all six Napa County jurisdictions (including St. Helena), the framework outlines a package of 53 actions that, when translated into locally specific programs and projects countywide, will help meet climate protection targets. This policy framework is meant to be followed by locally appropriate implementation plans, designed for each jurisdiction, focusing on specific programs and projects.

City of St. Helena Greenhouse Gas Emission Reduction Action Plan

The City of St Helena Greenhouse Gas Emission Reduction Action Plan provides five measure-specific plans to reduce City-controlled greenhouse gas emissions by more than 20 percent.

The City of St Helena is implementing the International Council for Local Environmental Initiatives (ICLEI) program to reduce the GHG emissions from City-controlled sources (Tellus, 2009). The City of St Helena Greenhouse Gas Emission Reduction Action Plan provides five measure-specific plans to reduce City-controlled GHG emissions by more than 20 percent. The plan actually includes five plans to reduce GHG emissions to meet the overall goal. These plans consist of numerous measures to reduce GHG emissions, reduce energy costs, address equipment problems, and reduce the volatility of the City's annual energy costs.

Greenhouse Gas Inventories

U.S. Inventory

As part of the commitments to UNFCCC, the USEPA has developed an inventory of anthropogenic emissions by sources and removals by sinks of all GHGs. This inventory is periodically updated, with the latest update being 2008. The USEPA reported that total U.S. emissions rose by 14.7 percent from 1990 to 2006, while the U.S. gross domestic product increased by 59 percent over the same period. A 1.1-percent decrease in emissions was noted from 2005 to 2006, which is reported as attributable to (1) climate conditions, (2) reduced use of petroleum products for transportation, and (3) increased use of natural gas over other fuel sources. The inventory noted that the transportation sector emits about 33 percent of carbon dioxide emissions, with

60 percent of those emissions coming from personal automobile use. Residential uses, primarily from energy use, accounted for 20 percent of carbon dioxide emissions (USEPA, 2010).

As a part of its responsibility to develop and update an inventory of U.S. GHG emissions and sinks, the USEPA compared trends of other various U.S. data. Over the period between 1990 and 2006, GHG emissions grew at a rate of about 0.9 percent per year. Population growth was slightly higher at 1.1 percent, while energy and fossil fuel consumption were more closely related at 1.0 percent. Gross domestic product (GDP) and energy generation grew at much higher rates.

State of California Inventory

California is the second largest emitter of greenhouses gases in the United States and one of the largest emitters in the world.

California emissions of GHGs or CO_2-equivalent emissions were estimated at 484 million metric tons of equivalent CO_2 emissions ($MMTCO_2e$), which is about 7 percent of the emissions from the entire United States.[3] Transportation is the largest source of GHG emissions in California, contributing about 40 percent of the emissions. Electricity generation is second at over 20 percent, but California imports electricity during the summer, bringing energy sources up to about 25 percent. Industrial activities account for about 20 percent of the state's emissions. On a per-person basis, GHG emissions are lower in California than most other states; however, California is a populous state and the second largest emitter of GHGs in the United States, and one of the largest emitters in the world (CARB, 2008).

Under a "business as usual" scenario, emissions of GHG in California are estimated to increase to approximately 600 $MMTCO_2e$ by 2020. CARB staff has estimated the 1990 statewide emissions level to be 427 $MMTCO_2e$, therefore requiring a reduction of almost 30 percent in emissions by 2020 to meet the AB 32 goal (CARB, 2008).

Bay Area Inventory

Napa County emissions are the lowest in the Bay Area. As in most Bay Area counties, a majority of Napa County's emissions are from transportation.

BAAQMD estimated GHG emissions for the Bay Area at 102.7 million metric tons of equivalent CO_2 ($MMCO_2e$) in 2007 (BAAQMD, 2010a). The inventory is broken down by county, where Napa County emissions are the lowest in the Bay Area at just under 2 percent (1.7 $MMCO_2e$). As in most Bay Area counties, a majority of Napa County's emissions are from transportation (cars and trucking), accounting for 56 percent of the county's emissions. About 36 percent of the entire Bay Area inventory is attributable to on-road vehicles.

[3] It is estimated that the United States contributes up to 35 percent of the world's CO_2 equivalent emissions.

Napa County Inventory

Based on the most recent BAAQMD inventory (for 2007), Napa County GHG emissions are 1,690,586 metric tons of CO_2e. The 2005 inventories for Napa County were 1,167,235 metric tons of CO2e. These inventories were produced by a partnership of the ICLEI with staff from NCTPA, all six Napa County jurisdictions, and climate action plan consultants. These emission inventories vary due primarily to the differences in methodology used. For instance, BAAQMD uses the state's EMFAC2007 emission factor model to forecast travel within Napa County, which includes freight traffic and off-road equipment. The inventory prepared by the ICLEI and the county does not account for freight and non-road transportation sources such as the airport.

St. Helena Inventory

St. Helena's emissions are dominated by commercial/ industrial and residential energy usage.

As part of the ICLEI process to develop countywide emissions for 2005, inventories were developed for each of the six jurisdictions, including St. Helena. According to the ICLEI modeling for the 2005 inventory, St. Helena produced 45,283 metric tons of CO2e per year (NCTPA et al., 2009). This is a small fraction of the total emissions for the county. While the inventory for most communities is dominated by transportation sources, energy usage in the commercial/industrial and residential sectors dominates the inventory in St. Helena.[4] Based on Association of Bay Area Governments (ABAG) projections, St. Helena's emission inventory would grow by just under 8 percent between 2005 and 2020. However, the ABAG projections show very small growth in population and jobs in St. Helena. A previous inventory prepared for the City indicated that City-controlled GHG emissions were just over 1,000 metric tons per year (Tellus, 2009). These emissions do not include community-wide emissions.

Impacts and Mitigation Measures

Significance Criteria

Significance determinations are based on the BAAQMD guidelines for evaluating air quality impacts from plans (BAAQMD, 2010b and 2010c). The standards established by these guidelines address the CEQA thresholds identified in Appendix G of the CEQA Guidelines.

Based on Appendix G of the CEQA Guidelines, implementation of the proposed General Plan Update would have a significant GHG impact if it would:

[4] Reported in the January 23, 2009 memo from the Napa Countywide Climate Action Plan Project Team to Carol Poole.

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

The recently adopted BAAQMD CEQA thresholds have identified emissions-based thresholds that apply to the evaluation of general plans. These thresholds are based on meeting the AB 32 GHG emissions reductions targets. BAAQMD adopted an efficiency measurement that can be applied to the evaluation of plans in Bay Area jurisdictions. Under these thresholds, a plan would have a significant environmental impact if it allowed development that would generate more than 6.6 metric tons of CO2e per service population per year.[5]

Relevant Policies

Section 4.D, Air Quality, of this EIR identifies relevant policies to reduce air quality, which include policies pertaining to climate change, land use and growth management, circulation, community design, and open space and conservation. The Climate Change Element of the proposed General Plan Update includes the following policies:

CC1.1. Promote the City's commitment to urban-centered growth, adopting zoning and design standards to develop mixed-use, "walkable" and "bikeable" neighborhoods. [Draft Napa Countywide Community Climate Action Plan Framework, Action T1]

CC1.2. Promote land use decisions that support the County's goals to maintain and improve the County's overall balance of jobs and housing, by locating jobs and housing in proximity to each other and improving the match between wages and housing cost. [Draft Napa Countywide Community Climate Action Plan Framework, Action T2]

CC1.3. Support transportation planning efforts to optimize fuel efficiency. [Draft Napa Countywide Community Climate Action Plan Framework, Action T7]

CC2.1. Encourage measures to reduce energy demand through conservation and efficiency. [Draft Napa Countywide Community Climate Action Plan Framework]

CC2.2. Support local efforts to improve the energy supply by switching from fossil fuels to renewables. [Draft Napa Countywide Community Climate Action Plan Framework]

CC3.1. Enhance recycling, composting and source reduction services for residential and commercial uses to support Napa County's countywide waste

[5] Service population is defined as a combination of projected population and employment.

reduction goal to achieve overall waste diversion of 75 percent to 90 percent by 2020. (Also see the Public Facilities and Services Element, Topic Area 4) [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.1. Support efforts to protect and increase the amount of vegetation and biomass in soil, and reduce emissions from agricultural sources. [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.2. Encourage responsible and sustainable agricultural and landscaping practices. [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.3. Strengthen water conservation measures that result in significant reductions in local water use and the protection of local water resources. (Also see the Community Design Element, Topic Area 1) [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.4. Support efforts to expand and improve the City's managed urban forest program in order to reduce greenhouse gas emissions and improve overall air quality. (Also see the Open Space and Conservation Element for additional policies and implementing actions relating to urban forests.)

CC5.1. Support local efforts to market programs and conduct community outreach through schools, non-profit groups, community organizations and the business community to increase participation in greenhouse gas (GHG) reduction efforts. [Draft Napa Countywide Community Climate Action Plan Framework]

CC5.2. Engage and advocate for collaborative programs, policies and legislative solutions at the regional, state, federal and global levels to reduce global GHG emissions. [Draft Napa Countywide Community Climate Action Plan Framework]

CC5.3. Expand local awareness about gardening, composting and agriculture.

CC6.1. Ensure that the City leads by example in managing its local government operations while implementing the following policy directions:

- Encouraging the reduction of fossil fuel consumption by local government operations. [Draft Napa Countywide Community Climate Action Plan Framework]
- Improving energy efficiency and reduce greenhouse gas emissions in City and county facilities and operations. [Draft Napa Countywide Community Climate Action Plan Framework]
- Reducing solid waste from City and County operations and facilities. [Draft Napa Countywide Community Climate Action Plan Framework]

Impact Analysis

Less-than-Significant Impacts

The projected growth in population and economic activity allowed by the proposed General Plan Update would potentially conflict with AB 32 efforts to reduce statewide GHG emissions, but this potential impact is considered less than significant for the reasons described below.

The BAAQMD CEQA Guidelines outline the procedures for evaluating GHG emissions associated with plans. The underlying premise in the guidelines is to demonstrate consistency with AB 32, which requires 2020 statewide greenhouse gas emissions to be reduced to year 1990 levels. The strategy to reduce GHG emissions assumes a certain amount of growth in population and economic activity in California. A five-step process is involved in the evaluation of GHG emissions from a General Plan as follows:

- Develop GHG reduction strategy;
- Inventory existing GHG emissions;
- Project GHG emissions for 2020 and General Plan buildout;
- Determine existing and projected service population; and
- Compare service population to 2020 GHG projections and thresholds of significance.

GHG Reduction Strategy

As previously described, St. Helena is developing strategies to reduce GHG emissions at both the municipal and community level. In addition to developing GHG emission reduction strategies in the General Plan Update, the City has participated in the development of the Napa County Climate Action Plan. This plan is intended to help achieve a 30-percent reduction in countywide emissions by 2020. The draft plan details six goals with 53 high-priority, countywide actions intended to achieve the emissions goals. Staff from all Napa County cities/towns and the County of Napa participated in drafting the 53 actions. The General Plan Update Climate Change Element policies reflect St. Helena's local efforts to implement 51 of these actions. Since St. Helena is mostly built out, much of the reduction would come from new development that encourages increased pedestrian, bicycle, and transit modes of travel. Reductions in energy consumption, especially associated with new development or redevelopment, are targeted in the General Plan Update.

As a result, the General Plan Update would not conflict with any attempts to develop or implement a Climate Action Plan. As discussed above, St. Helena is part of the Napa Countywide Community Climate Action Framework. The General Plan Update includes a Climate Change Element that contains

policies and implementing programs that were developed as part of the countywide process.

Inventory of GHG Emissions

BAAQMD recommends quantifying communitywide GHG emissions from a general plan. The emissions inventory should be conducted for a base year at or before the current year of the plan, and should follow published CARB protocols for municipal and community-wide inventories (when available). BAAQMD recommends that the base year inventory be expressed in terms of metric tons CO2e emissions and account for municipal and community-wide emission sectors applicable in the jurisdiction such as transportation, commercial, residential, water use and treatment, solid waste, and agriculture. BAAQMD has developed guidelines and tools to assist in predicting these emissions. Recently, the BAAQMD released the BAAQMD Greenhouse Gas Model that uses modeling developed by the URBEMIS2007 model to predict CO2e emissions for the various sectors attributable to land use projects.

As part of the Napa Countywide Community Climate Action Plan Framework, GHG emissions in St. Helena were inventoried for 2005. Since population and employment have not changed substantially, these are expected to be representative of current GHG emissions in the City of St. Helena.

Table 4.J-1 shows GHG emissions for St. Helena assuming existing land uses and population. These emissions are projected out to 2020 and 2030 assuming there is no change in St. Helena land uses. These emissions represent those from transportation, energy usage (in terms of natural gas combustion and electricity consumption), area sources, water and wastewater usage, and solid waste. While this inventory is not complete, it is expected to capture at least 95 percent of the emissions produced within St. Helena. The emissions inventory was developed as follows.

Transportation. The URBEMIS2007 model and the BAAQMD Greenhouse Gas Model (BGM) were used to predict CO2e emissions using the inventory of St. Helena and uses and traffic data produced for the General Plan Update by Fehr & Peers. The URBEMIS2005 model basically produces emissions based on the latest version of CARB’s on-road mobile source emission model, EMFAC2007. The model generates vehicle miles traveled based on the land uses inventoried in St. Helena and the projected trip generation data for the city. Unlike the 2005 inventory, this analysis accounted for all trips with originations and or destinations in St. Helena. Thus, the modeling includes travel outside of St. Helena that is associated with the proposed General Plan Update. Because St. Helena is small, internal trips (those with originations and destinations in St. Helena) were adjusted to one mile. Traffic that passes through St. Helena is not included. The BGM model uses the

TABLE 4.J-1
ANNUAL GREENHOUSE GAS EMISSIONS IN ST. HELENA BASED ON EXISTING LAND USES (Metric Tons CO2E)[a]

Source	Calculation Methodology	Existing Conditions (2010)	Existing Conditions Projected to 2020	Existing Conditions Projected to 2030
Transportation	URBEMIS2007/BGM using trip generation data reported by Fehr & Peers	43,199	33,569	30,415
Energy Usage	Based on Residential Commercial and Industrial emissions reported for 2005 inventory that includes electricity and natural gas consumption	28,239	28,239	28,239
Area Sources	URBEMIS2007 - landscape and fireplaces	1,441	1,441	1,441
Water and Wastewater	URBEMIS2007/BGM using PG&E CO2 emission rate	947	933	920
Solid Waste	Based on Solid Waste emissions reported for 2005 inventory	4,353	4,353	4,353
Total		**78,179**	**68,535**	**65,367**

[a] Projections show no growth in St. Helena.

SOURCE: Illingworth & Rodkin, 2010

URBEMIS2007 data to produce CO2e emissions that account for new regulations pertaining to vehicle efficiency and the new low carbon fuel standard.

Energy Usage. The 2005 inventory produced through the Climate Action Framework developed emissions for energy usage in St. Helena based on records from Pacific Gas & Electric Company (PG&E) regarding natural gas and electricity consumption. These projections for 2005 are considered to be more accurate than projections using land use-type models. Since St. Helena has grown little since 2005, these projections were used in this inventory.

Area Sources. URBEMIS2007 produces area source emissions associated with use of landscape equipment and fireplaces.

Water and Wastewater Usage. The conveyance and treatment of water and wastewater require energy. The BGM program predicts these emissions based on the various land uses. The BGM output is adjusted to account for PG&E emission rates, since much of the energy used for water and wastewater is provided by the utility.

Solid Waste. Emissions from solid waste were developed for the 2005 inventory and are expected to be similar in 2010. These emissions are anticipated to decrease in the future due to increased recycling or waste diversion and better controls on landfills.

Projected Emissions Inventory for 2020 and General Plan Update Buildout

The incremental General Plan Update land use projections for the Likely Buildout Scenario and Full Buildout Scenario were modeled to predict the increase in emissions. These emissions are shown in Table 4.J-2. Fehr & Peers provided daily trip generation for the Likely Buildout Scenario, as well as the number of internal and external trips. The URBEMIS2007 / BGM model was used to predict the change in emissions. The URBEMIS2007 model was used to reflect the changes in vehicle emissions associated with new development that would encourage higher rates of pedestrian and bicycle modes of travel. The effect of this development pattern is reflected in the increase of internal trips forecasted. Increases in energy usage were computed with the URBEMIS2007/BGM model, assuming that newly constructed buildings would be 20 percent more energy-efficient. The solid waste diversion rate was assumed to reach 75 percent by 2020, the lower end of the 75- to 90-percent goal of the General Plan Update.

TABLE 4.J-2
GROWTH IN ANNUAL GREENHOUSE GAS EMISSIONS IN ST. HELENA BASED ON GENERAL PLAN UPDATE (Metric Tons CO2E)

Source	Calculation Methodology	Likely Growth in 2020	Likely Growth in 2030	Full Growth in 2030[a]
Transportation	URBEMIS2007/BGM using trip generation data reported by Fehr & Peers	3,806	3,448	6,050
Energy Usage	URBEMIS2007/BGM electricity and natural gas using PG&E CO2 emission rate	2,182	2,182	3,947
Area Sources	URBEMIS2007 - landscape and fireplaces	199	199	467
Water and Wastewater	URBEMIS2007/BGM using PG&E CO2 emission rate	58	57	111
Solid Waste	URBEMIS2007/BGM assuming a 75 percent waste diversion rate	282	282	410
Total		**6,526**	**6,168**	**10,986**

[a] This is the cumulative, Full Buildout Scenario projection that is addressed under cumulative impacts in Chapter 6.

SOURCE: Illingworth & Rodkin, 2010

Since there is no 2020 projection for General Plan Update buildout, the Likely Buildout Scenario was assumed to occur in 2020. This would result in a 9-percent increase in CO2e emissions, while population would increase by 15 percent and employment would increase by almost 10 percent. Table 4.J-3 reports the projected emissions inventory for 2020 and 2030. This is the 2010 inventory adjusted to the future to account for reductions from motor vehicles plus the emissions for the General Plan Update reported in Table 4.J-2.

TABLE 4.J-3
PROJECTED ANNUAL GREENHOUSE GAS EMISSIONS IN ST. HELENA BASED ON GENERAL PLAN UPDATE (Metric Tons CO2E)

Source	Existing Conditions (2010)	Likely Growth in 2020	Likely Growth in 2030	Full Growth in 2030[a]
Transportation	43,199	37,375	33,863	36,466
Energy Usage	28,239	30,421	30,421	32,186
Area Sources	1,441	1,640	1,640	1,908
Water and Wastewater	947	991	976	1,031
Solid Waste	4,353	4,635	4,635	4,763
Total	**78,179**	**75,061**	**71,535**	**76,354**
Population	6,100	7,021	7,021	8,265
Employees	5,810	6,370	6,370	6,521
Per Capita Emissions[b]	**6.6**	**5.6**	**5.3**	**5.2**

a This is the cumulative, Full Buildout Scenario projection that is addressed under cumulative impacts in Chapter 6.
b Per capita emissions are calculated by dividing emissions by total population and employees ("service population").

SOURCE: Illingworth & Rodkin, 2010

The emission inventory for 2030 accounts for the same buildout of the General Plan Update as 2020 but using emission rates for 2030. The lower emissions are the result of increased implementation of the Pavley regulations that would affect motor vehicle emissions. This would occur as more fuel-efficient vehicles replace the aging vehicle fleet that is less efficient.

The emissions reported in Tables 4.J-2 and 4.J-3 account for reductions expected from adopted state regulations that would affect mobile sources. The growth portion of the emissions account for General Plan Update policies and implementing actions that would decrease mobile emissions, increase energy efficiency in new buildings, and increase the diversion of solid waste from landfills. For example, the EIR transportation analysis reports a slower growth in trip generation than population or employment. In addition, 28 percent of the new trips would be internal trips, as compared to 11 percent

of the existing trips. This means shorter trips that result in lower vehicles miles traveled and lower emissions.

However, these emissions do not reflect statewide efforts under AB 32 to reduce emissions. The following adjustments to the statewide inventory are expected by 2020 that were not accounted for in the St. Helena inventory:

- Natural gas emissions are anticipated to be reduced by 10 percent as a result of programs to increase energy efficiency statewide. Several programs are being implemented to reduce natural gas usage, most notably increases to energy efficiency requirements in the State Building Code (Title 24) and incentives to consumers to purchase energy efficient appliances and increase existing building energy efficiency.

- Electricity GHG emissions associated with PG&E electricity would be reduced by about 21 percent as a result of measures that would reduce the emissions from electricity production (renewable portfolio standards). Another 15-percent reduction is anticipated for energy efficiency programs, as described above for natural gas. California's solar roof program is anticipated to reduce these emissions by another 1 to 2 percent.

- Other measures would affect industry. For example, a cap and trade program would have a far-reaching effect on the state's emissions, affecting up to 85 percent of the inventory.

Projected Service Population

The BAAQMD CEQA Guidelines identify an efficiency-based threshold to evaluate emissions associated with general plans. This metric is based on the "service population," which is a combination of projected population and employment associated with the growth projections assumed in the general plan. The service population for the General Plan Update projections is shown in Table 4.J-3.

Conclusion

Emissions reported in Table 4.J-3 are divided by the "service population" to evaluate the significance. For 2020, BAAQMD has identified a efficiency threshold of 6.6 metric tons per capita per year. Table 4.J-3 also reports this metric for the Likely Buildout Scenario and the Full Buildout Scenario. In 2020, the Likely Buildout Scenario is anticipated to have per-capita emissions of 5.6 metric tons per capita per year. In 2030, assuming the same buildout, the efficiency would be 5.3 metric tons per capita per year, reflecting the same growth but lower transportation-related emissions. Since per-capita emissions would be below the BAAQMD threshold, the impact of GHG emissions from General Plan Update buildout would be less than significant.

In addition, the General Plan would not hinder or conflict with development of an applicable climate action plan. The Climate Change Element of the General Plan Update includes the policies and implementing programs applicable to St. Helena that have been developed as part of the countywide process (i.e., Napa Countywide Community Climate Action Framework).

Potentially Significant Impacts

The proposed General Plan Update would not have any potentially significant impacts related to GHGs.

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4.K Geology and Soils

Introduction

This section describes existing geologic conditions, including geologic and seismic hazards, in St. Helena; the applicable regulatory framework regarding geology, soils, and seismicity; and the potential geologic, soils, and seismic impacts of development in accordance with the proposed General Plan Update.

Background information for this section is drawn from published and unpublished regional geologic reports and maps from the United States Geological Survey (USGS), the California Geological Survey (CGS), the Natural Resources Conservation Service (NRCS), and other sources.

Setting

St. Helena is located within California's Coast Range Geomorphic Province, a geologically young and seismically active region. The Coast Range Province is characterized by a series of northwest-trending mountain ranges with intervening, alluvium-filled valleys. Specifically, St. Helena is located in the northern portion of the Napa Valley where the alluvial fans of York and Sulphur creeks blend across the floor of the valley and intersect the Napa River. The composition of topography, geologic material, soils, and groundwater conditions affect the geologic hazards in any given area.

Geology

Most of St. Helena is located on the floor of the Napa Valley.

The City of St. Helena encompasses approximately 3,024 acres (City of St. Helena, 2010), the vast majority of which is located on the floor of the Napa Valley. The valley floor is primarily layered with Holocene alluvium with small low lobes of Pleistocene alluvium exposed near the western margin. Alluvium consists mainly of unconsolidated gravel, sand, silt, and clay deposits that have been subject to redistribution by fluvial (stream) processes. St. Helena includes some upland areas both to the west (foothills of the Mayacamas Mountains) and east (foothills of the Vaca Mountains) of the valley floor. To the east, a 245-acre hillside area along Howell Mountain Road, above Silverado Trail, consists primarily of Sonoma Volcanics (Pliocene rhyolite, dacite, tuff, and pyroclastic rocks). To the northwest, between Highway 29 and Spring Mountain Road, additional low ridges of Sonoma Volcanics extend into the valley and into the city limits. To the southwest of Spring Mountain Road, moderate hills of Franciscan Complex mélange (sandstone, shale, chert, conglomerate, and greenstone) wrap around the city to the south, with limited exposure areas of serpentinized ultramafic rock and Sonoma Volcanics amidst overlying hillslope deposits (Clahan,

2006; Wagner, 1982; Graymer, 2006). Table 4.K-1 provides an overview of the various geologic units in the Planning Area.

TABLE 4.K-1
GEOLOGIC UNITS IN THE PLANNING AREA

Unit Name	Age	Description
Alluvium – Terrace Deposits	Holocene – Pleistocene	Alluvium, lake, playa, and terrace deposits; unconsolidated and semi-consolidated. Mostly nonmarine.
Sandstone – Conglomerate	Pliocene and/or Pleistocene	Sandstone, shale, and gravel deposits.
Dacite – Rhyolite	Tertiary	Volcanic flow rocks; minor pyroclastic deposits.
Rhyolite – Dacite	Tertiary	Pyroclastic and volcanic mudflow deposits.
Franciscan Complex	Jurassic to Cretaceous	Sandstone with smaller amounts of shale, chert, limestone, and conglomerate.
Franciscan Complex – Mélange	Jurassic to Cretaceous	Mélange of fragmented and sheared Franciscan complex rocks.
Serpentinite – Peridotite	Middle to Late Jurassic	Ultramafic rocks, mostly serpentine. Minor peridotite, gabbro, and diabase.

SOURCE: Ludington, 2007

Topography

The broad plain of the valley bottom slopes gently from the northwest to the southeast.

The broad plain of the valley bottom slopes gently from the northwest to the southeast, with an elevation of approximately 320 feet NGVD[1] at the foot of the northwestern hills and approximately 200 feet NGVD near the filtration plant and Napa River to southeast. In the foothills of the Vaca Mountains east of the Napa River, the properties above Silverado Trail rise to a maximum elevation of approximately 720 feet NGVD. Along the western edge of the city, the incorporated area includes portions of the foothills of the Mayacamas to about 540 feet NGVD, with a maximum elevation of approximately 740 feet NGVD atop a small knob just west of Dean York Lane (USGS, 1993; USGS, 1973). The majority of the City of St. Helena is within the level terrain of the valley floor, west of the Napa River.

[1] National Geodetic Vertical Datum of 1929, which is roughly equivalent to mean sea level.

Soils

Soil is generally defined as the unconsolidated mixture of mineral grains and organic material that mantles the land surfaces of the earth. Soils can develop on unconsolidated sediments, such as alluvium, and weathered bedrock. The characteristics of soil reflect the five major influences on their development: topography, climate, biological activity, parent (source) material, and time.

Many of St. Helena's soils are moderately expansive.

The City of St. Helena contains approximately 28 different individual soil types; however, these are grouped by type and character into soil "associations" or "complexes." Generally, these groups have similar geophysical characteristics. Roughly 72 percent of the soils of St. Helena (most of the valley floor) are Bale, Cole, Cortina or Pleasanton loams (NRCS 2009). Many of these soils are moderately corrosive to concrete, and moderately to highly corrosive to steel. They are also moderately expansive, and may generate shrink-swell damage to structures. Implications of soil characteristics from a geologic hazard perspective (e.g., expansive soils) are discussed below in the Seismic and Geologic Hazards subsection.

Seismic Conditions

St. Helena is located in the seismically active San Francisco Bay Area but does not contain any known active earthquake faults.

St. Helena is located in the seismically active San Francisco Bay Area. The main feature generating seismic activity in the region is the tectonic plate boundary between the North American and Pacific plates. Locally, this boundary is referred to as the San Andreas Fault Zone (SAFZ) and includes numerous active faults found by the California Geological Survey under the Alquist-Priolo Earthquake Fault Zoning Act to be "active" (i.e., to have evidence of fault rupture in the past 11,000 years). Some of the major active faults within the SAFZ include the San Andreas, Hayward, Rodgers Creek, Calaveras, San Gregorio-Seal Cove, Maacama, West Napa, Green Valley, Concord, Greenville, and Calaveras faults. St. Helena is located approximately 13 miles east of the Alquist-Priolo Earthquake Fault Hazard Zone (APEFHZ) for the Rodgers Creek Fault Zone and approximately 17 miles southwest of the APEFHZ for the Hunting Creek Fault. The West Napa fault is located approximately 21 miles south of St. Helena in the Napa Valley (CDMG, 1988). No known active faults are present in the City of St. Helena. Information on active regional faults is shown in Table 4.K-2 and fault locations are shown in Figure 4.K-1.

Geologic and soil conditions in an area can influence the shaking effects of an earthquake. The Association of Bay Area Governments (ABAG) earthquake hazard mapping indicates that a magnitude 7.9 event on the San Andreas Fault (similar to the 1906 earthquake) or a 6.5 event on the

TABLE 4.K-2
ACTIVE FAULTS IN THE VICINITY OF ST. HELENA

Fault	Location and Direction from St. Helena	Slip Rate[1] and Recurrence Interval[2]	A-PEFZA[3] Fault Classification	Historical Seismicity	M_w[4]
Rodgers Creek	13 miles west – Petaluma Valley. Connects by means of right steps the Hayward Fault to the Maacama Fault.	Greater than 5.0 mm/year. Recurrence interval of 131-370 years (best estimate of 230 years).	Active	M5.6, 1969 M5.7, 1969 M6.4, 1898 M5.6, 1893	7.0
Maacama (Central)	14 miles northwest – From Laytonville in Mendocino County to Mark West Creek in Sonoma County	Greater than 5.0 mm/year. Recurrence interval of 220 years.	Active	No recorded earthquakes greater than M6.0.	7.1
Hunting Creek – Berryessa	17 miles northeast – From the Wilson Valley south-southeast to the Cedar Roughs area west of Lake Berryessa.	Approximately 6 mm/year. Recurrence interval ~194 years.	Active	No recorded earthquakes greater than M6.0.	6.9
Concord – Green Valley	18 miles southeast – Wooden Valley south to Suisun Bay.	Between 1.0 and 5.0 mm/year. Recurrence interval unknown.	Active	No recorded earthquakes greater than M6.0.	6.9
West Napa	21 miles south – Along the western edge of the Napa Valley.	Between 0.2 and 1.0 mm/year. Recurrence interval unknown.	Active	M5.8, 1891	6.5
San Andreas	33 miles west – The San Andreas fault zone extends 700 miles from the Gulf of California to the Mendocino fault zone.	Between 16 and 25 mm/year. Recurrence interval is approximately 227 years.	Active	M7.1, 1989 M8.25, 1906 M7.0, 1838 Many <M6	7.9

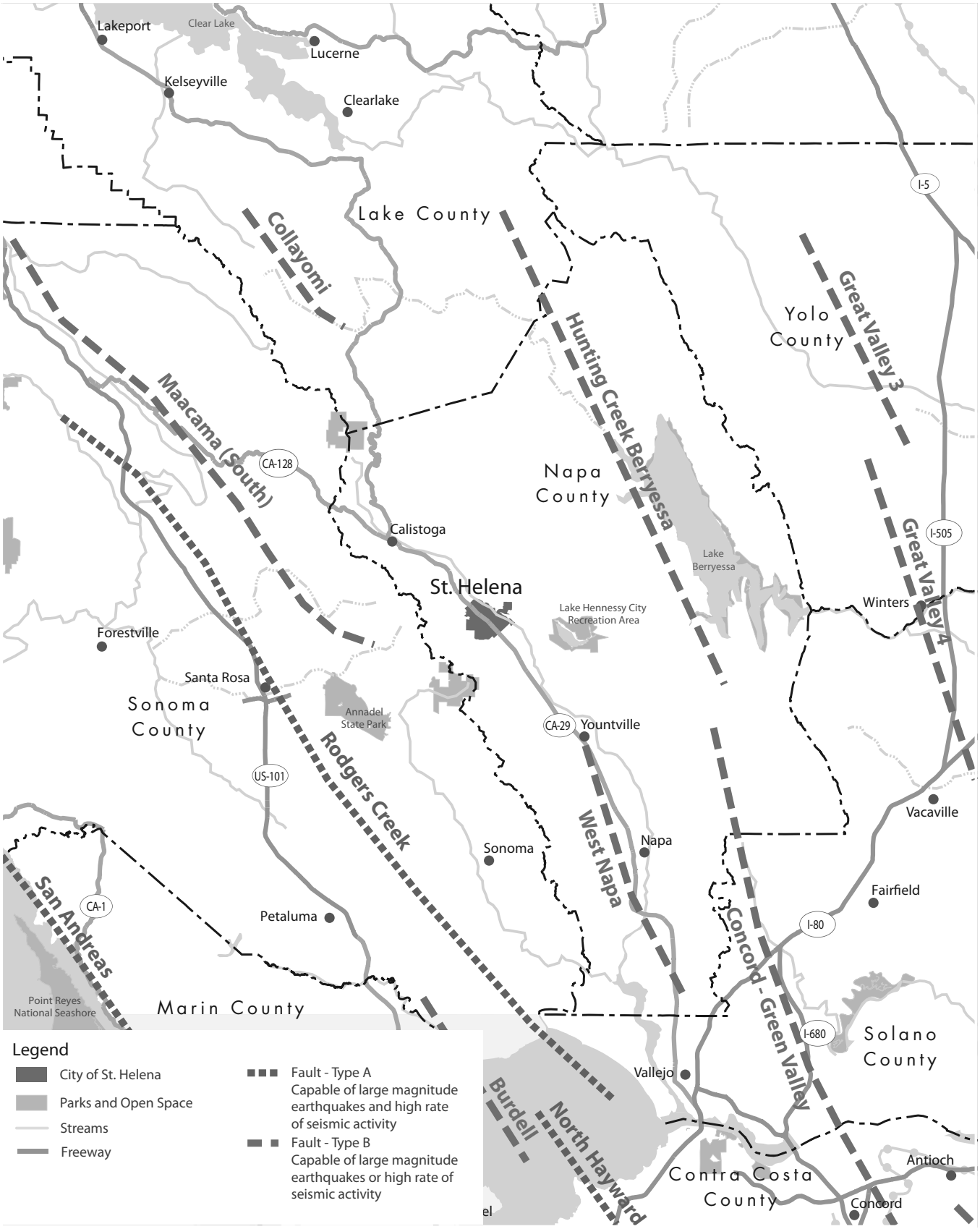
NOTES:
1 Slip Rate refers to the relative movement across the fault zone by opposing blocks, in millimeters (mm) per year.
2 Recurrence Interval estimates relies on studies of past individual fault activity for time between significant events.
3 A-PEFZA refers to the Alquist-Priolo Earthquake Fault Zoning Act.
4 Maximum Moment Magnitude (M_w) is the strongest earthquake that is likely to be generated along a fault zone, based on the geologic character of the fault and earthquake history (CDMG, 1996).

mm: millimeters

SOURCE: Jennings, 1994; CDMG, 1996; ICBO, 1998; CGS, 2009

West Napa Fault would result in strong to very strong (MMI-VII/VIII)[2] shaking in the area of St. Helena. Based on USGS mapping, the St. Helena vicinity ranges from a low hazard for liquefaction susceptibility (in the upland areas west of downtown) to highly susceptible in the lowlands adjacent to the Napa River. Slope stability issues and landslides have been mapped in the hillsides of the Napa Valley, and USGS maps indicate upland areas may be prone to slope instability and serve as source areas for debris flows.

2 MMI refers to Modified Mercalli Intensity Scale which measures the intensity of earthquakes.



SOURCE: City of St. Helena; Napa County, USGS OFR 96-705, 1996; CDMG SEAOC/ICBO, February 1998; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.K-1
Known Active Faults

In a fact sheet published in 2003, the U.S. Geological Survey estimated that there was a 62-percent probability that between 2003 and 2032, a 6.7 or greater magnitude earthquake will occur in the San Francisco Bay Region. The probability of a 6.7 magnitude or greater earthquake occurring along individual faults was estimated to be 21 percent along the San Andreas Fault, 27 percent along the Hayward-Rodgers Creek Fault, and 11 percent along the Calaveras Fault (USGS, 2003).

Seismic and Geologic Hazards

This subsection describes the hazards associated with the geologic conditions and the potential for seismic events in the City of St. Helena.

Fault Rupture Damage

Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. The location of surface rupture generally can be assumed to be along an active major fault trace.

Regional faults identified by the CGS are shown in Figure 4.K-1. The nearest Alquist-Priolo active or potentially active fault to the City of St. Helena is the Rodgers Creek Fault, which extends from San Pablo Bay up the eastern flank of the Petaluma Valley, across Sonoma Mountain and then north, past Santa Rosa. The related Maacama Fault has an active segment located just west of Franz Valley and extending to the northwest. The maximum expected earthquake for this fault complex is estimated to be magnitude (M_w) 6.9 (ICBO, 1998). The fault has caused Holocene (i.e., the last 11,000 years) displacement, but not during historic times (approximately the last 200 years).

The fault rupture hazard for the city is low.

A number of unnamed, relatively small, older faults are located at the base of the Sonoma and Vaca mountains along the margins of the Napa Valley; however, based on available information, displacement of these faults occurred more than 10,000 years ago. The California Geologic Survey (CGS) has not mapped any of these as an Alquist-Priolo Earthquake Fault Zone, indicating that, at the present time, the CGS does not consider them likely to generate surface rupture. Accordingly, these faults are generally considered not active.

The fault rupture hazard for the city is considered to be low. Fault rupture hazards in the city would need to be reevaluated if future data were to suggest that such a hazard is present.

Seismic Shaking

In addition to the Rodgers Creek, Napa and Green Valley faults, noted above, major regional faults outside the City of St. Helena but in the Coast Ranges are capable of producing ground shaking in the city.

Seismic shaking (or ground shaking) is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. Magnitude is a measure of the energy released by an earthquake; it is assessed by seismographs that measure the amplitude of seismic waves. Intensity is a subjective measure of the perceptible effects of seismic energy at a given point and varies with distance from the epicenter and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of the subjective effects of earthquake intensity (see Table 4.K-3). Intensity can also be quantitatively measured using accelerometers (strong motion seismographs) that record ground acceleration at a specific location, a measure of force applied to a structure under seismic shaking. Acceleration is measured as a fraction or percentage of the acceleration under gravity (g). In addition to the Rodgers Creek, Napa and Green Valley faults, noted above, major regional faults outside the City of St. Helena but in the Coast Ranges are capable of producing ground shaking in the city.

Peak Acceleration

The State of California has made estimates of the peak ground acceleration for the area based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected peak horizontal acceleration (with a 10-percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the St. Helena area is estimated by the California Geological Survey at about 0.36g[3] on the alluvium of the valley floor to 0.31g in the foothills (CGS 2008). This level of ground shaking is a potentially significant hazard.

Liquefaction

Liquefaction is the rapid transformation of saturated, loose, fine-grained sediment to a fluid-like state because of earthquake ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Since saturated soils are a necessary condition for liquefaction, soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. Liquefaction can

[3] Measured as a fraction or percentage of the acceleration compared to gravity (g).

TABLE 4.K-3
MODIFIED MERCALLI SCALE

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

[a] Richter Magnitude correlation.

SOURCE: CGS, 2002

result in substantial loss of life, injury, and damage to property. In addition, liquefaction increases the hazard of fires because of explosions induced when underground gas lines break, and because the breakage of water mains substantially reduces fire suppression capability.

Liquefaction potential is very low to moderate in most of St. Helena.

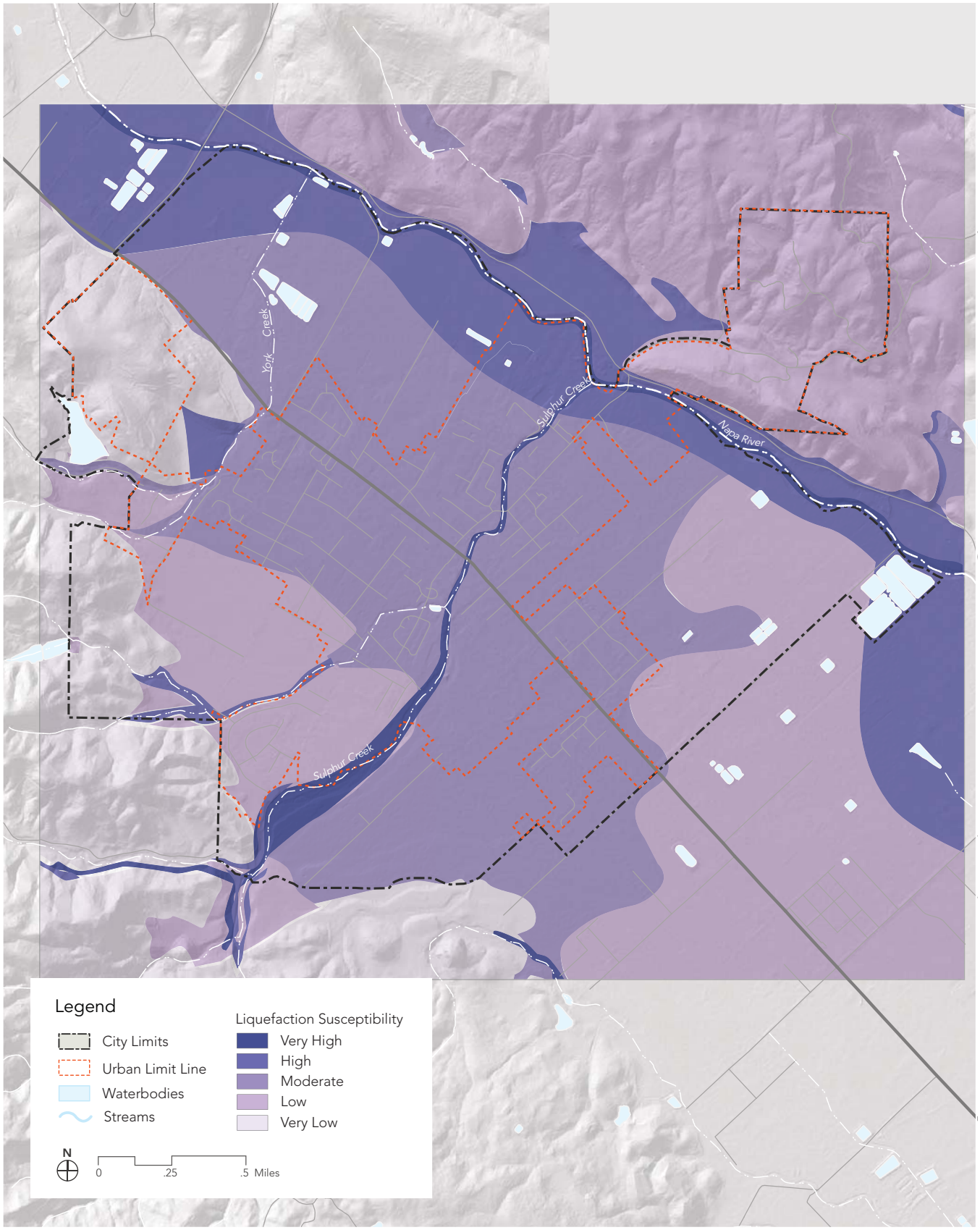
Most of St. Helena is underlain by materials that have very low to moderate liquefaction potential (Knudsen et al., 2000). In particular, the upland areas have a very low potential for liquefaction. Liquefaction potential increases in the vicinity of the Napa River at the east side of the city and locally near

creeks where loose granular sediments have accumulated as a result of stream processes. The approximate boundaries and hazard levels for liquefaction risk are shown in Figure 4.K-2. The potential for liquefaction also depends on soil conditions and groundwater levels, which may fluctuate. In general, where there is any potential for liquefaction, site-specific studies are needed to determine the extent of the hazard if development were to occur in the area.

Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. Lateral spreading can result from either the slump of low cohesion unconsolidated material or more commonly by liquefaction of either the soil layer or a subsurface layer underlying soil material on a slope, resulting in gravitationally driven movement (Rauch, 1997). Lateral spreading (lurching) may also occur where open banks and unsupported cut slopes provide a free face. Excavations for building foundations and other improvements, such as trenching for utilities installation, can provide opportunity for earth failures, such as lateral spreading, to occur. In addition, over-steepened banks and sudden grade changes, unless properly engineered, may also provide opportunity for lateral spreading. Ground shaking, especially when inducing liquefaction, may cause lateral spreading toward unsupported slopes. Areas most prone to lateral spreading are those that consist of fill material that has been improperly engineered, that have steep, unstable banks, and that have high groundwater tables. Damage caused by liquefaction and lateral spreading is generally most severe when liquefaction occurs within 15 to 20 feet of the ground surface.

Landsliding and Slope Stability

The strong ground motions that occur during earthquakes are capable of inducing landslides, generally where unstable slope conditions already exist. Slope instability is discussed below. Slope failure can occur as either rapid movement of large masses of soil ("landslide") or slow, continuous movement ("creep"). The primary factors influencing the stability of a slope are (1) the nature of the underlying soil or bedrock, (2) the geometry of the slope (height and steepness), (3) rainfall, and (4) the presence of previous landslide deposits. Landslides are commonly triggered by unusually high rainfall and the resulting soil saturation, by earthquakes, or a combination of these conditions. The general term "landslide" may include a wide range of slope failures, including but not limited to rock falls, deep failure of slopes, earthflows, and shallow debris flows. Some landslides occur as a result of human activities, such as timber harvest, undermining of a slope, or improper drainage-water management.



SOURCE: City of St. Helena; Napa County, ABAG; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.K-2
Liquefaction Susceptibility

The Napa Valley floor is mapped as *Category 1, Stable areas of less than five percent slope and not underlain by landslide deposits*. The foothills in the western part of St. Helena are mapped as either *generally to marginally stable* and includes slopes of 5 to 15 percent, or as areas greater than 15 percent that are *not underlain by landslide deposits or are underlain by bedrock units that are not susceptible to landslide* (Nilsen et al., 1979). The foothills of the Vaca Mountains (the eastern rise above the Napa River) include areas mapped as unstable, specifically as being underlain by, or adjacent to, existing landslide deposits.

Expansive Soils

St. Helena's soils range from low to high shrink-swell potential.

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 buildings and infrastructure may occur if the potentially expansive soils were not considered in building design and during construction.

The soils of the St. Helena area range from low to high shrink-swell potential. Moderate to high shrink-swell potential soils are classified as expansive soils and construction will require appropriate engineering (NRCS 2009). Limited areas of highly expansive soil exist in St. Helena, primarily in silt-loam soils near the Napa River.

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. Subsidence has not been reported to be a significant problem in the upper Napa Valley where St. Helena is located (Jones and Stokes, 2005).

Settlement and Differential Settlement

Differential settlement or subsidence 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 inhabitants, it can cause significant building damage over time.

Portions of St. Helena that contain loose or uncontrolled (non-engineered) fill may be susceptible to differential settlement.

Portions of St. Helena that contain loose or uncontrolled (non-engineered) fill may be susceptible to differential settlement. Regional surficial deposits mapping by the USGS does not indicate human-made fill in the vicinity of St. Helena (Helley, 1979); however, local dumping or casual fill activities may have occurred in the area and would not be mapped at the regional scale. Soil strength information is included with the individual soil descriptions by the NRCS, but interpretation of soil strength engineering implications for building projects requires site-specific soil identification and testing.

Regulatory Framework

This section describes the applicable federal, state, and local regulations that pertain to the City of St. Helena.

Federal Regulations

The National Earthquake Hazards Reduction Program (NEHRP) was established by the U.S. Congress when it passed the Earthquake Hazards Reduction Act of 1977, Public Law (PL) 95–124. In establishing NEHRP, Congress recognized that earthquake-related losses could be reduced through improved design and construction methods and practices, land use controls and redevelopment, prediction techniques and early-warning systems, coordinated emergency preparedness plans, and public education and involvement programs. The four basic NEHRP goals remain unchanged:

- Develop effective practices and policies for earthquake loss reduction and accelerate their implementation;
- Improve techniques for reducing earthquake vulnerabilities of facilities and systems;
- Improve earthquake hazards identification and risk assessment methods, and their use; and
- Improve the understanding of earthquakes and their effects.

Several key federal agencies contribute to earthquake mitigation efforts. There are four primary NEHRP agencies:

- National Institute of Standards and Technology (NIST) of the Department of Commerce;
- National Science Foundation (NSF);
- United States Geological Survey (USGS) of the Department of the Interior; and
- Federal Emergency Management Agency (FEMA) of the Department of Homeland Security.

Implementation of NEHRP priorities is accomplished primarily through original research, publications, and recommendations to assist and guide state, regional, and local agencies in the development of plans and policies to promote safety and emergency planning.

State Regulations

Applicable state regulations include the California Building Code, Alquist-Priolo Earthquake Fault Zoning Act, and Seismic Hazards Mapping Act.

California Building Code

Compliance with the 2007 California Building Code requires that structures for human occupancy be designed and constructed to resist the effects of earthquake motions.

The (2006) Uniform Building Code (UBC) is published by the International Conference of Building Officials (ICBO) and is the widely adopted model building code in the United States. The (2007) California Building Code (CBC) is another name for the body of regulations known as the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code (CBSC). The CBC incorporates by reference the UBC requirements with necessary California amendments. Title 24 is assigned to the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24 or they are not enforceable. Compliance with the 2007 CBC requires that (with very limited exceptions) structures for human occupancy be designed and constructed to resist the effects of earthquake motions. The Seismic Design Category for a structure is determined in accordance with either CBC Section 1613 – *Earthquake Loads* or American Society of Civil Engineers (ASCE) Standard No. 7-05, *Minimum Design Loads for Buildings and Other Structures*. In brief, based on the engineering properties and soil-type of soils at a proposed site, the site is assigned a Site Class ranging from A to F. The Site Class is then combined with Spectral Response (ground acceleration induced by earthquake) information for the location to arrive at a *Seismic Design Category* ranging from A to D, with D being the most severe conditions. The classification of a specific site and related calculations must be determined by a qualified person and is site-specific.

Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA)

The A-PEFZA requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults.

The Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA) was passed in December 1972 to mitigate the hazard of surface faulting to structures for human occupancy. The A-PEFZA's main purpose is to prevent the construction of buildings used for human occupancy across the surface trace of active faults. The A-PEFZA only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards. (As discussed below, the Seismic Hazards Mapping Act, passed in 1990, addresses

non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides.)

The A-PEFZA requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and the development of most structures for human occupancy. Before a project can be permitted, cities and counties must require a geologic investigation of the project site to demonstrate that proposed buildings will not be constructed across active faults. The evaluation of a specific site and written report must be prepared by a licensed geologist. If an active fault is found, any structure for human occupancy must be set back a minimum of 50 feet from the fault trace as the area within 50 feet of such active faults is presumed to be underlain by active branches of that fault unless proven otherwise by an appropriate geologic investigation and report.

Seismic Hazards Mapping Act (SHMA)

The SHMA established a statewide mapping program to identify areas subject to violent shaking and ground failure.

In 1990, following the 1989 Loma Prieta earthquake, the California Legislature enacted the Seismic Hazards Mapping Act (SHMA) to protect the public from the effects of strong ground shaking, liquefaction, landslides, and other seismic hazards. The SHMA established a statewide mapping program to identify areas subject to violent shaking and ground failure. The program is intended to assist cities and counties in protecting public health and safety. The SHMA 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. As a result, the CGS is mapping SHMA Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking, and landslides: primarily the San Francisco Bay Area and Los Angeles basin. At the time of the preparation of this Draft EIR, the City of St. Helena had not yet been mapped in conformance with the SHMA, and CGS has not indicated a schedule for completion of the study.

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and

Gravel operations along Sulphur Creek

implements the city's long-term vision, including provisions related to geology and soils.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the CEQA Guidelines, the proposed General Plan Update would have a significant effect related to geology and soils if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

  i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);

  ii) Strong seismic ground shaking;

  iii) Seismic-related ground failure, including liquefaction;

  iv) 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 risks to life or property; or

- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address geology, soils and seismicity:

> *PS3.1*. Minimize risk of injury, loss of life and property damage from seismically-induced and other known geologic hazards.

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.

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.

PF2.2. Require the extension of the City sewer to areas that are dependent upon septic systems prior to approval of future growth in these areas.

PF2.3. Reduce pumping costs and increase plant capacity by mitigating sewer system infiltration problems.

PF2.4. Increase sewer collection system efficiency by ensuring proper maintenance of sewer pipes.

PS3.A. 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.

PS3.B. 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.

PS3.C. Require prompt revegetation of development areas on slopes prone to instability. Use native and drought-tolerant plant species for landscaping on slopes where excess watering might induce landslides and/or erosion.

PF2.A. Require all new units on parcels less than two acres, except those in Woodlands and Watershed Districts, to connect to the City sewer. All existing units within 200 feet of an existing sewer shall connect to the City sewer whenever feasible. Many of the residential units cannot expand without abandoning on-site septic systems and connecting to the sewer which may, in some cases, require an extension of the sewer.

PF2.B. Implement improvements to the sewer system that can reduce the frequency of system overloads, particularly during the rainy season. Improvements can include system upgrades and expansions to accommodate projected high volume flows during wet months.

PF2.C. Continue wastewater treatment system upgrades to reduce the number and scale of implementation constraints on the recycled water program. This can ensure that the system is ready for investment when funding for implementation becomes available.

PF2.D. Urban services such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line. Exceptions will be permitted when undue hardship can be demonstrated, and when proposed improvements are not found to induce growth.

Impact Analysis

Less-than-Significant Impacts

Implementation of the General Plan Update would not result in development in areas having soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems. Certain areas (lands designated Woodland and Watershed) are outside the area served by the City of St. Helena's sanitary sewer system and would continue to be served by on-site wastewater systems. Applications for new development in areas not served by the sanitary sewer system would be required to apply to the Napa County Health and Human Services Department for installation of an on-site treatment system. The application and review process includes engineering and testing requirements to ensure that appropriate soils are present and/or required specially designed systems are proposed to mitigate site constraints prior to system approval (County of Napa, 2010). For those areas within St. Helena served by the City system, General Plan Update Policies PF2.1 through PF2.4 would "ensure adequate sewage treatment capacity at the City treatment plant to meet the needs of population growth," as well as address system extension, and capacity improvements to the system. Implementing actions PF2.A through PF2.D would provide that nearly all new units (except those few noted above) must connect to the City wastewater system and would limit system growth to areas within the St. Helena Urban Limit Line. Thus, no significant impacts related to septic systems would result.

Potentially Significant Impacts

Impact GEOLOGY-1: Implementation of the General Plan Update would expose people or structures to substantial risk related to geologic or seismic hazards. (Potentially Significant)

This discussion addresses the first four significance criteria listed above. The growth and changes from the General Plan Update would result in increased development, increased population, and/or other physical changes in St. Helena that could involve geological or seismic hazards (geohazards). Implementation of the General Plan Update would therefore result in additional people and structures being exposed to geohazards, including seismic risks, liquefaction, slope instability, potential soil settlement or compaction, and/or adverse soil conditions (e.g., expansive soils, corrosive soils). Some of these geohazards, particularly those related to seismic shaking, could result in injuries and/or fatalities; all of the geohazards discussed could result in damage to structures and property.

Existing federal and state programs, including NEHRP, the A-PEFZA, the SHMA, and the CBC, are designed to (1) provide accurate and timely information detailing seismic hazards, (2) impose regulatory requirements

regarding geotechnical and soils investigations, (3) provide limitations on the locations of structures for human habitation, (4) impose requirements for hazard notices to potential users, and (5) establish structural standards for requirements for buildings and grading projects.

The policies and implementing actions of the General Plan Update would guide new development and reduce impacts relative to geohazards. It is the stated intent of the Public Health, Safety and Noise Element of the General Plan Update that it " . . . ensure that St. Helena's residents, workers and visitors are protected from negative exposure to . . . geologic and seismic hazards." Implementing Action PS3.A of the General Plan Update specifies that the City of St. Helena "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 Action PS3.B would prohibit or limit development in areas of slope instability unless adequate measures are taken to limit potential damage to levels of acceptable risk. Implementing Action PS3.C would require revegetation to stabilize slopes and reduce erosion potential post construction. For Implementing Action PS3.A, site-specific geologic investigation and analysis by a licensed professional and conducted in accordance with standard industry practices and state-provided guidance, such as the CGS Special Publication 117 of 2008, Guidelines for Evaluating and Mitigating Seismic Hazards in California, would serve to minimize risk associated with geohazards. In particular, site-specific geotechnical reports would be required to address all potential seismic hazards including seismic shaking, liquefaction, and potential for fault rupture. Although there are no mapped Alquist-Priolo faults within St. Helena, the significance criteria specify that faults be evaluated as indicated under the findings of the State Geologist or "as based on other substantial evidence of a known fault."

Due to the distances to major regional faults compared to some parts of California, St. Helena is subject to relatively low risk from violent seismic shaking. Nonetheless, active local faults like the Rodgers Creek, Maacama, Hunting Creek, or West Napa faults may result in significant shaking in St. Helena. Potential impacts from geohazards such as expansive or corrosive soils can also be mitigated by implementing the recommendations of site-specific geotechnical investigations and standard remedial measures (e.g., soil removal, foundation design). Similarly, slope stability issues, such as those in the eastern and western highlands of St. Helena, can be addressed by site-specific geotechnical investigations.

Additional policies are recommended for the General Plan Update to further reduce hazards associated with geologic or soil conditions.

Mitigation Measures

Mitigation Measure GEOLOGY-1: The General Plan Update shall be revised to include the following new policies and implementing actions in the Public Health, Safety and Noise Element:

> *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 geohazard 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.*
>
> *Action PS3.D: The City shall rely upon the most current and comprehensive geological hazard mapping available in the evaluation of potential seismic hazards associated with proposed new development.*
>
> *Action PS3.E: All development and construction proposals shall be reviewed by the City to ensure conformance to applicable building standards. Recommendations of the geotechnical analysis shall be implemented.*

With the inclusion of Mitigation Measure GEOLOGY-1, the potential impact would be reduced to a less-than-significant level. (Less than Significant)

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4.L Hazards and Hazardous Materials

Introduction

This section of the EIR presents a general discussion of hazardous materials[1] and public health and safety issues within the City of St. Helena. This discussion is largely based on information contained in the General Plan Update Phase I Findings Report (EDAW, 2008), the Natural Environment General Plan Update Working Paper (EDAW, 2007), and supplemented with information from City staff and regulatory agency records. Potential impacts related to hazardous materials and public health and safety hazards that could result from implementation of the policies and implementing actions of the Draft St. Helena General Plan Update are described and evaluated, with mitigation measures provided to address significant impacts, as appropriate.

Setting

Hazardous Materials

Products as diverse as gasoline, paint, solvents, household cleaning products, refrigerants, and radioactive substances are categorized as hazardous materials. What remains of a hazardous material after use, or processing, is considered to be a hazardous waste. Of concern to all communities are the handling, transportation, and disposal of such wastes, as well as proper handling of hazardous materials.

Beginning in the 1970s, governments at the federal, State, and local levels became increasingly concerned about the effects of hazardous materials management on human health and the environment. Numerous laws and regulations were developed to investigate and mitigate these effects. As a result, the storage, use, generation, transport, and disposal of hazardous materials and waste are highly regulated by federal, State, and local laws and regulations.

Contamination Investigation and Cleanup

Releases of hazardous materials may occur during use, storage, transfer, and disposal of these materials, and can contaminate soil and groundwater at

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment" (California Health and Safety Code Section 25501).

these sites. Releases that affect groundwater can migrate with the groundwater and contaminate other nearby sites. The San Francisco Bay Regional Water Quality Control Board (Water Board) records identify 31 hazardous materials release sites in the City of St. Helena, of which six are currently under active regulatory oversight (RWQCB, 2009). The majority of these hazardous materials release sites in the City of St. Helena (29 of 31) are related to leaking underground storage tanks. Although current regulations requiring double-wall construction and leak monitoring equipment for underground storage tanks should reduce the number of releases in the future, many underground tanks installed in previous decades have failed, causing petroleum contamination in soils and groundwater. These releases are often discovered during tank removal or upgrade activities.

Typically, the most significant hazardous materials sites affecting public health are overseen by the California Department of Toxic Substances Control (DTSC). DTSC reports two on-going cleanups in St. Helena. A manufactured gas plant (MGP) operated on Mitchell Drive from 1883 until 1926. In 1930, PG&E acquired the site, dismantling the MGP upon introduction of natural gas to the region in 1931. Polycyclic aromatic hydrocarbons, petroleum hydrocarbons, arsenic, and lead have been detected in subsurface investigations at the site. A second site, on South St. Helena Highway, just south of the City boundary, is undergoing a voluntary cleanup program and land use restriction covenants have been imposed on the property due to historical contamination by organochlorine pesticides (DTSC, 2009). Approximately 44 facilities in the vicinity of St. Helena are listed by the County as users of hazardous materials (County of Napa, 2009b). Of these filings, 22 are now listed as closed cases by DEM. Of the remainder, nine are for agriculturally related USTs, and the remaining 13 listings are business such as gas stations, utilities facilities, contractor supplies, stores and machine shops.

Other Hazardous Materials and Hazard Issues in the City of St. Helena

Aerially-Deposited Lead near Major Roadways

Aerially-deposited lead is a common hazardous materials issue in urban areas. Soils adjacent to major roadways often contain elevated concentrations of lead. The lead deposition is the result of airborne particulates and surface water runoff associated with tailpipe emissions prior to the time lead was phased out of vehicle fuels. Studies by the California Department of Transportation (Caltrans) suggest that hazardous waste levels of lead, if present, are generally found in soils within 30 feet of the edge of the pavement (DTSC, 2000).

The City of St. Helena contains several heavily-trafficked roadways, including State Route (SR) 29/128 (also known as Main Street, and the St. Helena Highway) and Silverado Trail. Properties located adjacent to roadways may contain elevated concentrations of lead in exposed surface soils, which could pose a health hazard to construction workers and users of the properties. Lead is a State-recognized carcinogen (causes cancer) and reproductive toxicant (causes birth defects or other reproductive harm) (Cal/EPA Office of Environmental Health Hazard Assessment, 2007). Exposure of construction workers or future site occupants to lead in soil could result in adverse health effects, depending on the duration and extent of exposure.

Schools and Other Sensitive Receptors

Some populations, such as children, the elderly, and the infirm, are more susceptible to health effects of hazardous materials than the general population. Hazardous materials use near schools, day care centers, senior housing, and hospitals must consider potential health effects to these populations, often referred to as “sensitive receptors.” Construction or redevelopment on contaminated properties that could potentially generate vapors or fugitive dust containing contaminants may potentially pose a health risk to these populations. In addition, commercial businesses in proximity to sensitive receptors may have hazardous emissions or handle hazardous or acutely hazardous materials or wastes that could pose a health risk to these sensitive receptors.

Section 17210 et seq. of the State Education Code, Section 21151.2, Section 21151.4, and Section 21151.8 of the Public Resources Code require that prospective school sites be reviewed to determine that such sites are not a current or former hazardous waste disposal site, a hazardous substance release site, or the site of hazardous substance pipelines. These laws also require consultation with local hazardous materials agencies and air quality districts to ensure that no sites within one-quarter mile of a school that handle or emit hazardous substances would potentially endanger future students or workers at the prospective school site.

All school districts receiving State funds must prepare a Phase I environmental assessment on prospective school sites. The Phase I assessment would detail the historical uses of the property and indicate any potential for contamination. DTSC must review this assessment and make one of the following findings: 1) that no further action is required; or 2) that concerns about contamination exist and the district must conduct a Preliminary Endangerment Assessment (PEA). The PEA process entails site sampling and the development of a detailed risk assessment of any contaminants present on the proposed school property.

Lead, Asbestos, and Other Hazardous Materials in Building Materials

Hazardous materials are commonly found in building materials that may be affected during demolition and renovation activities associated with redevelopment. Prior to 1978, lead compounds were commonly used in interior and exterior paints. Prior to the 1980s, building materials often contained asbestos fibers, which were used to provide strength and fire resistance. In addition, other common items are present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats that can contain hazardous materials, which may pose a health risk if not handled and disposed of properly.

Demolition of buildings has the potential to release lead particles, asbestos fibers, and/or other hazardous materials to the air where they may be inhaled by construction workers and the general public. Federal and State regulations govern the demolition of structures where lead or material containing lead is present. During demolition, lead-based paint that is securely adhering to wood or metal may be disposed of as demolition debris, which is a non-hazardous waste. Loose and peeling paint must be disposed of as a California and/or federal hazardous waste if the concentration of lead exceeds applicable waste thresholds. State and federal construction worker health and safety regulations require air monitoring and other protective measures during demolition activities where lead-based paint is present.

Federal, State, and local requirements also govern the removal of asbestos or suspected asbestos-containing materials (ACMs), including the demolition of structures where asbestos is present. All friable (crushable by hand) ACMs, or non-friable ACMs subject to damage, must be removed prior to demolition in accordance with applicable requirements, including notification to the BAAQMD. Friable ACM must be disposed of as an asbestos waste at an approved facility. Non-friable ACM may be disposed of as non-hazardous waste at landfills that will accept such wastes. Workers conducting asbestos abatement must be trained in accordance with State and federal Occupational Safety and Health Administration (OSHA) regulations.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials are regulated as “universal wastes” by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed under DTSC hazardous waste rules.

Aviation

The City of St. Helena does not have an airport. The County of Napa has one public use airport (Napa County Airport), one public use seaplane port (Lake Berryessa), and several private runways. None are within two miles of St. Helena (Skyvector.com, 2009).

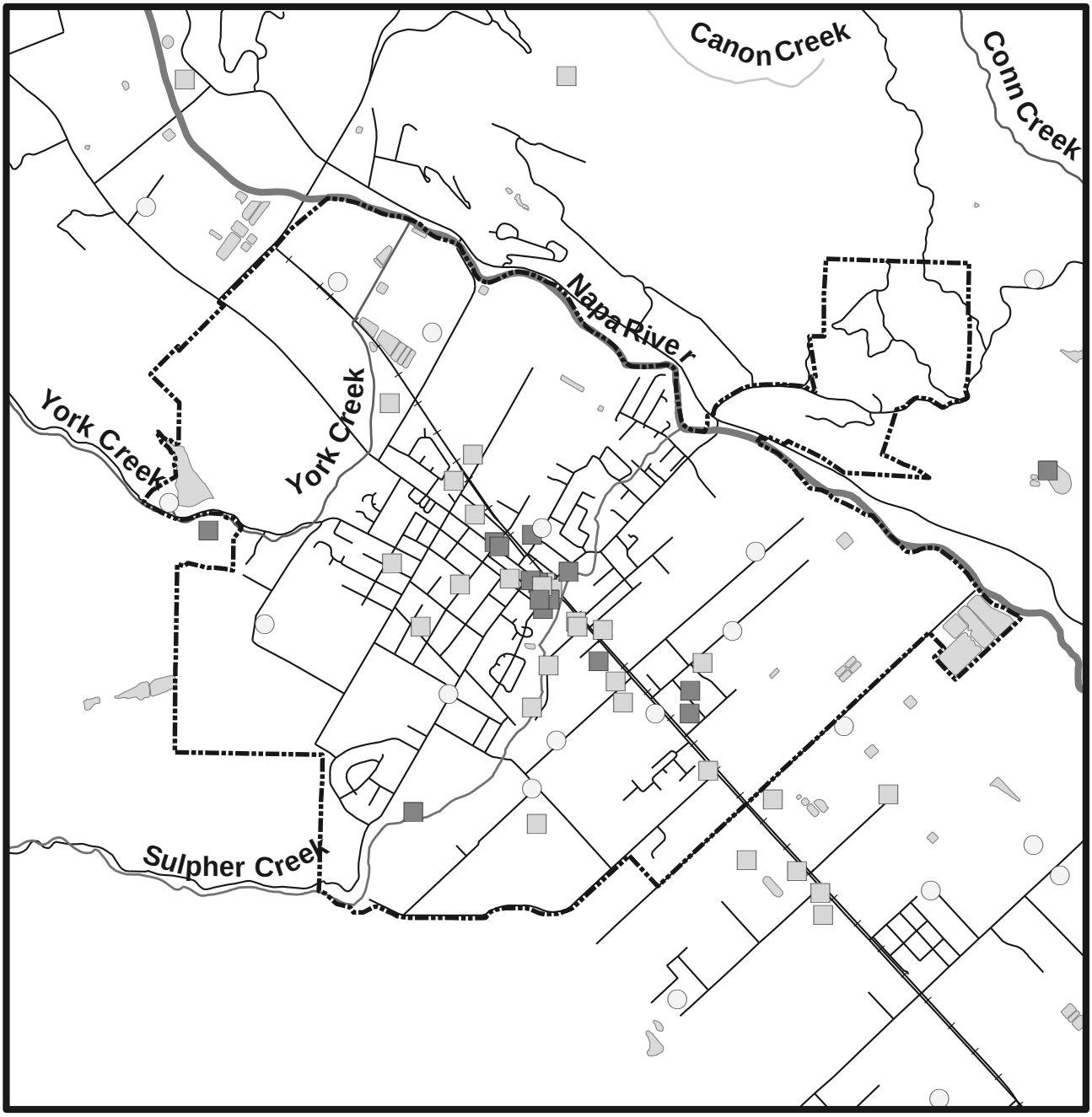
Emergency Response

County-wide, the Napa County Office of Emergency Services (OES) works with County departments, State agencies, and community groups to handle major disasters that affect County residents. In the event of a disaster, an Emergency Operations Center (EOC) is set up and staffed with trained professionals who coordinate all communications, logistics, resources, and recovery programs.

The City of St. Helena has a published comprehensive emergency preparedness plan; however, the St. Helena Emergency Preparedness (flood) plan, and the Disaster Preparedness (power outages) plans provide recommendations for citizens on preparing for flooding, power outage and post-earthquake scenarios. The City of St. Helena has a paid call/volunteer fire department and traditional police department which would be responsible for providing safety and guidance in the event an evacuation were required (St. Helena, 2009).

Wildland Fires

In accordance with California Public Resource Code Section 4201-4204 and Government Code Section 51175-51189, the California Department of Forestry and Fire Protection (CDF) has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), 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. No portion of St. Helena is classified as very-high fire risk. In the western uplands of the City of St. Helena are areas classified as having moderate to high wildfire risk, with the with the remainder of St. Helena either classified as unban un-zoned or non-wild land/non urban, representing minimal wildfire risk (CalFire, 2009) (see Figure 4.L-1).



Legend

City_Limits

Hazardous Materials Facilities

- Agricultural Underground Storage Tank (UST)
- Hazard location, closed
- Hazard location, open

0 0.3 0.6 1.2 Miles

N W E S

SOURCE: County of Napa, 2009. Online GIS Search for hazardous facilities in the vicinity of St. Helena. Accessed 2/20/09

St. Helena General Plan Update EIR . 210147

Figure 4.L-1
Hazardous Materials Sites in the Vicinity of the City of St. Helena

Regulatory Agency Framework

A myriad of laws and regulations at the federal, State, and local levels regulate the management of hazardous materials. In California, the U.S. Environmental Protection Agency (U.S. EPA) has granted most enforcement authority over federal hazardous materials regulations to the California Environmental Protection Agency (Cal/EPA). In turn, a local agency, the Napa County Department of Environmental Management (DEM) has been granted responsibility for implementation and enforcement of many hazardous materials regulations in St. Helena under the Certified Unified Program Agency (CUPA) Program (described below).

In California, regional agencies are responsible for programs regulating emissions to the air, surface water, and groundwater. In the City of St. Helena, the Bay Area Air Quality Management District (BAAQMD) has oversight over air emissions, and the San Francisco Bay Regional Water Quality Control Board (Water Board) regulates discharges and releases to surface and groundwater. The Cal/EPA Department of Toxic Substances Control (DTSC) regulates remediation of sites where discharges to land could potentially present a public health risk.

Oversight of investigation and remediation of sites affected by hazardous materials releases can be performed by State agencies, such as DTSC, regional agencies, such as the Water Board, or local agencies, such as DEM, which oversees investigation and remediation of leaking underground petroleum storage tank (LUST) sites in St. Helena.

The U.S. Department of Transportation (DOT) is the Federal administering agency for hazardous materials transportation safety. The DOT Office of Hazardous Materials Safety oversees a national safety program to minimize the risks related to commercial transportation of hazardous materials. The Federal hazardous materials transportation law (49 United States Code 5101 et seq.) is the basic statute regulating hazardous materials transportation in the United States. Federal hazardous materials transportation regulations are contained in 49 Code of Federal Regulations Parts 171-180. In California, the California Department of Transportation (Caltrans) is the implementing agency for DOT laws and regulations.

Hazardous Materials Management Programs

Routine hazardous materials management in California is administered under the Certified Uniform Program Agency (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. The City of St. Helena’s hazardous materials

programs are administered and enforced by DEM under the CUPA program. The CUPA program encompasses several hazardous materials programs: Hazardous Materials Management Plans (HMMP) program, California Accidental Release Prevention (CalARP) program, underground storage tank (UST) programs, aboveground storage tank (AST) programs, and hazardous waste generation and disposal. The five hazardous materials programs administered under the CUPA program are described briefly below (County of Napa, 2009a).

Hazardous Materials Management Plan

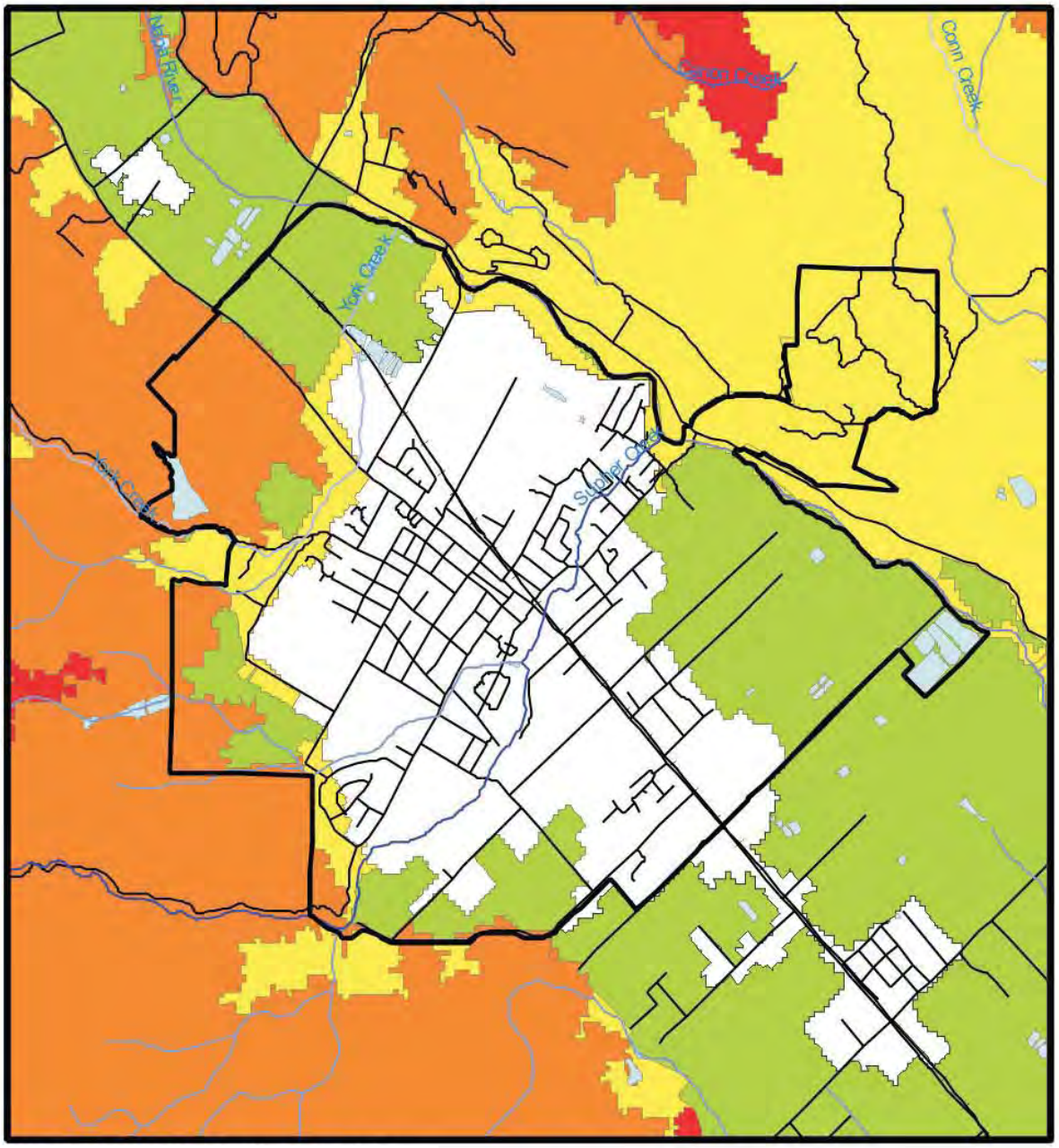
Businesses that store hazardous materials in excess of specified quantities must report their chemical inventories to DEM by preparing an HMMP, also known as a Business Plan. These plans must be filed with both the DEM and the City planning director (City of St. Helena, 2008). Approximately 44 facilities in the City of St. Helena are listed by the County as users of hazardous materials (County of Napa, 2009b) (Figure 4.L-2). This information informs the community on chemical use, storage, handling, and disposal practices. It is also intended to provide essential information to firefighters, health officials, planners, elected officials, workers, and their representatives so that they can plan for and respond to potential exposures to hazardous materials.

California Accidental Release Prevention Program

Under the CalARP Program, businesses that use large quantities of acutely hazardous materials must prepare a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. There are currently 10 facilities in Napa County subject to the CalARP program (Table 4.L-1). They are all wineries with the exception of one compressed gas distributor (County of Napa, Department of Environmental Management, 2009).

Underground Storage Tank (UST) Programs

Due to fire hazards, flammable liquids, such as gasoline, have historically been stored in USTs, which, over time, tend to leak, resulting in potential risks for the general public and the environment. Current regulations require that USTs be installed, monitored, operated, and maintained in a manner that protects public health and the environment. Tanks must be constructed with primary and secondary levels of containment and be designed to protect public health and the environment for the lifetime of the installation. The USTs must be monitored for leaks and built such that a leak from the primary container into the secondary container will be detected. When a UST is proposed to be removed, a detailed permit application must be submitted to DEM, which oversees removal activities to identify evidence of leakage.



Legend

City Limits
Water bodies
Roads
Railroad

Cal Fire Hazard Zones

Urban Unzoned
Non-Wildland/Non-Urban
Moderate
High
Very High

0 0.3 0.6 1.2 Miles

N W E S

SOURCE: CALFIRE, 2009. Fire Hazard Severity Zones, County Maps of Very High Fire Hazard Severity Zones in Local Responsibility Areas (LSA), 5/2008.

St. Helena General Plan Update EIR . 210147

Figure 4.L-2
Wildfire Hazards in the Vicinity of the City of St. Helena

TABLE 4.L-1
CALARP REGULATED SITES,
NAPA COUNTY DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Facility	Location	CalARP Substance	Quantity (Pounds)
Complete Welder's Supply	Napa	Anhydrous Ammonia Sulphur Dioxide Gas	9,000 1,200
Beringer Blass Winery	St. Helena	Anhydrous Ammonia	Two independent systems that contain approx. 14,000
Sutter Home - Main Street Facility	St. Helena	Anhydrous Ammonia	8,000
Diamond Oaks Winery	Oakville	Anhydrous Ammonia	950
Charles Krug Winery	St. Helena	Anhydrous Ammonia	9,440
Sutter Home Winery - Zinfandel Facility	St. Helena	Anhydrous Ammonia	9,559
Raymond Vineyard and Cellar	St. Helena	Anhydrous Ammonia	9,500
Markham Vineyards and Winery	St. Helena	Anhydrous Ammonia	3,200
Calistoga Mineral Water	Calistoga	Anhydrous Ammonia	3,000
Napa Wine Company	St. Helena	Anhydrous Ammonia	2,900
The following sites have been determined by DEM to be exempt from CalARP requirements.			
Merryvale	St. Helena	Aqueous Ammonia	Exempt
Markham Vineyards and Winery	St. Helena	Aqueous Ammonia	Exempt

SOURCE: Calhoun, W.D, 2009

Aboveground Storage Tank Programs

Inspections and permits are required for facilities storing hazardous materials in aboveground storage tanks (ASTs) by DEM. In addition, any facility operating ASTs with an aggregate tank capacity of 1,320 gallons or more must: 1) complete a Spill Prevention Control and Countermeasure (SPCC) plan to provide a detailed engineering analysis of the potential for release from ASTs present at a facility and the measures, such as secondary containment and emergency response that can be implemented to reduce the release potential; and 2) file a storage statement, as required by the State Water Resources Control Board (SWRCB). There are no AST sites reported by DEM in the City of St. Helena (County of Napa GIS and Department of Environmental Management, 2006).

Hazardous Waste Generation and Disposal

Once a hazardous material has been used or processed, what remains may be considered a hazardous waste. Many items routinely used by residents and

businesses, such as paints and thinners, cleaning products, and motor oil, are considered hazardous waste once they are ready for disposal. Nearly all businesses and residences in St. Helena are expected to generate some amount of hazardous wastes (including household hazardous wastes). Hazardous waste generation and disposal regulations are administered and enforced by DEM. Businesses that generate more than 100 kilograms of hazardous waste per month, or more than one kilogram of acutely hazardous waste[2], must be registered with U.S. EPA's Resource Conservation and Recovery Act (RCRA) program and are subject to extensive regulations regarding storage and disposal. Approximately 13 of the City of St. Helena businesses generated hazardous waste in 2008 (County of Napa GIS and Department of Environmental Management, 2006).

Hazardous waste management oversight in St. Helena is primarily a responsibility of DEM. Household hazardous wastes in the City of St. Helena go to the Napa-Vallejo Household Hazardous Waste Collection Facility. Residents deliver their household hazardous wastes to the permanent collection facility located at 889A Devlin Road, American Canyon (County of Napa Sanitation District, 2009).

Agricultural Hazardous Materials Issues

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 designed to protect people and the environment and promote agriculture within the County of Napa. Agriculture in and around St. Helena uses a variety of hazardous materials, including fuels and maintenance fluids for farm equipment, and fertilizers, herbicides, fungicides, and insecticides. The use of agricultural chemicals can leave residues in soils that can harm people and the environment. Chemicals used today are less-persistent, organic compounds compared to agricultural chemicals used prior to the 1970s which often included highly persistent compounds such as DDT. In addition, inorganic compounds containing heavy metals such as arsenic, lead, and mercury were commonly used prior to the 1950s and could persist for many decades. If present in elevated concentrations, these residues could pose a potential health risk to future construction workers, residents, and other persons who may come in direct contact with surface soils.

[2] USEPA defines acutely hazardous waste as those that "contains such dangerous chemicals that it could pose a threat to human health and the environment even when properly managed. These wastes are fatal to humans and animals even in low doses."

Pesticides are regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) by the U.S. EPA. This includes labeling and registration of pesticides as to how they may be used. U.S. EPA delegates pesticide enforcement activities in California to the California Department of Pesticide Regulation (DPR), under Title 3 of the California Code of Regulations and the California Food and Agriculture Code. The DPR registers pesticides for use in California, and licenses pesticide applicators and pilots, advisors, dealers, brokers, and businesses. In turn, the Napa County Agricultural Commissioner (NCAC) acts as the local enforcement for DPR. The NCAC registers licensed pest control businesses, and agricultural pest control advisors in the County in which they operate; requires permits and advanced notification for buying or using California restricted-use pesticides; and requires the completion of pesticide use reports for pesticides applied in County, including St. Helena. In addition, the NCAC investigates pesticide-related injury and illnesses, and oversees enforcement of worker training in pesticide management.

Worker Health and Safety

The U.S. Department of Labor, OSHA regulates worker health and safety at the federal level. The Federal Occupational Safety and Health Act of 1970 authorizes states (including California) to establish their own safety and health programs with OSHA approval; the California Department of Industrial Relations (DIR) regulates implementation of worker health and safety in California. The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program and provides consultative assistance to employers.

California standards for workers dealing with hazardous materials are contained in Title 8 of the California Code of Regulations (CCR) and include practices for all industries (General Industrial Safety Orders), and specific practices for construction and other industries. Workers at hazardous waste sites (or working with hazardous wastes as might be encountered during excavation of contaminated soil) must receive specialized training and medical supervision according to the Hazardous Waste Operations and Emergency Response (HAZWOPER) regulations (Title 8, CCR Section 5192). Additional regulations have been developed for construction workers potentially exposed to lead (Title 8, CCR Section 1532.1) and asbestos (Title 8, CCR Section 1529). Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

Impacts and Mitigation Measures

Significance Criteria

For the purposes of this EIR, adoption of the proposed General Plan would have a significant effect related to hazards and hazardous materials if it would exceed the following Standards of Significance, adapted from Appendix G of the CEQA Guidelines:

- 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;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, create a significant hazard to the public or the environment;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, result in an aviation safety hazard for people residing or working in the project area;
- For a project within the vicinity of a private airstrip, result in an aviation safety hazard for people residing or working in the project area;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Relevant Policies and Implementing Actions

The following relevant policies and implementing actions of the General Plan Update address hazards and hazardous materials:

OS4.2. Promote the clean-up of contaminated sites to protect the environment and public well-being.

OS4.3. Promote best management practices to protect soil resources from industrial, agricultural and other uses that produce or dispose of hazardous or toxic substances.

PS4.1. Maintain a transitional zone around industrial areas to protect the health and safety of residential neighborhoods.

PS4.2. Limit development in hillside areas where wildfire hazard is high to very low-intensity, or maintain them as open space in order to prevent the loss of lives, injuries and property damage due to wildfires.

PS4.3. Protect St. Helena residents from health and safety impacts related to the use, storage, manufacture and transport of hazardous materials.

PS4.4. Discourage new uses that rely extensively on the use of hazardous materials.

PS4.5. Facilitate communication and education about fire safety, non-point source pollution, household hazardous waste disposal and recycling opportunities.

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.

PS4.A. Designate areas in St. Helena that are prone to fire hazards and make this information available to the community.

PS4.B. Develop an ordinance to regulate development and building methods and materials used in fire-prone areas. Integrate best practices in fire resistance for all new and remodeled structures. Continue to require fire-resistant building materials and automatic sprinkler systems to be used in all new structures located in these areas.

PS4.C. Require all structures in high wildfire hazard areas to maintain a clearance of flammable vegetation away from structures, and to use fire-resistant ground covers. The minimum clearance distance should be 30 feet.

PS4.D. Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

PS4.E. Require all new development plans to be approved by the Fire Department prior to the issuance of building permits, grading permits or final map approval.

PS4.F. Develop a program to inform and educate the community about potential risks, resources and roles and responsibilities for addressing fire safety in St. Helena. Inform residents of homes adjacent to public lands of their responsibility to provide fire breaks adjacent to their homes.

PS4.G. 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 materials.

PS4.H. Develop a Hazardous Materials Response Plan that includes guidelines, protocols and strategies to respond to a local hazardous materials spill.

PS4.I. Strengthen regulations for the safe production, transport, handling, use and disposal of hazardous materials that may cause air, water or soil contamination. Require buffers for operations which handle substantial amounts of hazardous materials. When siting new facilities or expanding existing facilities, require buffer zones between hazardous materials facilities and residential uses, parkland, trails and open space facilities.

PS4.J. Develop and launch a citywide education campaign to encourage the use of green products in order to reduce non-point source pollution. Target efforts towards the reduction of household chemical use and hazardous waste disposal.

Impact Analysis

Less-than-Significant Impacts

Routine Hazardous Materials Use

Current land uses, as well as future land uses under the General Plan, involve or would involve the use, storage, generation, and disposal of hazardous materials. As detailed in the Setting Section, many businesses in the City currently use hazardous materials and generate hazardous wastes, which require regulatory oversight to protect human health and the environment. This includes current and former hazardous materials use sites and agricultural tank sites at and adjacent to Potential Land Use Change Areas 1 through 8 and several Housing Opportunity and Pipeline Project sites (Figures 3-4 and 4.H-1). These uses are regulated by the Napa County DEM under State and Federal laws and regulations. General Plan Policy OS4.3 and Implementing Actions PS4.G, PS4.H, and PS4.I would require review of development proposals and use of best management practices to ensure hazardous materials are managed safely within the City. Although hazardous materials releases cannot feasibly be eliminated, implementation of General Plan policies and existing regulatory programs would reduce potential impacts of routine transport, use, or disposal of hazardous materials and reasonably foreseeable upset or accident conditions to a less-than-significant level.

Hazardous Materials Use Near Schools

Sensitive receptors, which include children, the elderly, and the infirm, are more susceptible to health effects from hazardous materials than the general population. Under State law, schools must be sited to prevent them from being located near hazardous materials sites. In addition, Policy PS4.1 and Implementing Action PS4.I of the General Plan call for buffer zones between industrial properties and “residential uses, parkland, trails and open space facilities.” These measures, in coordination with existing regulatory programs, would reduce this impact to a less-than-significant level, and no additional mitigation is required.

Aviation Hazards

As described in the Setting Section, no public use airports or private airstrips are located within two miles of the General Plan area; thus, no significant aviation hazards would be expected.

Emergency Response

Policy PS-4.6 would improve emergency response by requiring proper roadway design in order to ensure access for emergency vehicles and provide alternative emergency routes. This policy would be enforced for new development through Implementing Action PS4.E, requiring all development plans to be approved by the Fire Department. No impairments to emergency response and evacuation plans would be expected from development under the General Plan, and no additional mitigation is required.

Wildfire Hazards

As described in the Setting Section, no areas within St. Helena have been classified by the State as having “very-high” fire risk, which would require implementation of State wildfire prevention measures. However, some areas in the western uplands of the city have been classified as having “high” fire risks, including a portion of General Plan Potential Change Area 9 (Figures 3-4 and 4.H-2). Several policies and implementing actions in the General Plan address these potential fire hazards. Policy PS4.2 would limit development in areas where potential wildfire hazards exist, and Policy PS4.5 encourages fire safety education. Implementing Actions PS4.A thorough PS4.F include the implementation of building design and vegetation management requirements in “high” fire risk areas comparable to State requirements for “very-high” risk areas. Significant impacts would result from General Plan adoption.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact HAZARDS-1: Development on former agricultural, commercial, or industrial properties may expose construction workers and future owners and users to contaminants from historic hazardous materials use and releases. (Potentially Significant)

As described in the setting section, releases of hazardous materials, primarily from underground petroleum storage tanks, have been reported at numerous sites in the City of St. Helena, with many of those sites remaining under regulatory oversight. Current and former hazardous materials use sites and agricultural tank sites have been identified at and adjacent to Potential Land

Use Change Areas 1 through 8 and several Housing Opportunity and Pipeline Project sites (Figures 3-4 and 4.H-1). Chemicals formerly used on agricultural properties may have included heavy metals and organic compounds, such as DDT, which may persist in soil for decades. Contamination from former commercial, industrial, and agricultural land uses has the potential to affect soil and groundwater quality, and therefore result in a safety hazard to future workers and residents. Previously undetected releases may also have occurred at facilities that have historically been or are currently involved in the use, transportation, storage, or disposal of hazardous materials.

Contaminated soil and groundwater, if present at development sites, could expose construction workers and/or the public to hazardous materials. Releases of hazardous materials to the air through fugitive dust during construction could potentially affect nearby schools and/or other sensitive receptors.

Mitigation Measure HAZARDS-1: The following new implementing action shall be added to the Public Health, Safety and Noise Element of the General Plan Update:

- *Require environmental assessments during the planning for development in areas previously used for agricultural, commercial, or industrial uses. Remediation of identified contamination that may result in health risks to construction workers and future owners and users shall be required prior to approval of construction, demolition, and grading permits for development.*

With the inclusion of this new implementing action, this potential impact would be reduced to less than significant. (Less than Significant)

Impact HAZARDS-2: New development that could occur with implementation of the General Plan Update could affect groundwater or surface water resources through the use and disposal of hazardous materials. (Potentially Significant)

Although protection of soil resources is addressed in Policy OS4.3, no proposed policies of the General Plan specifically address the protection of groundwater or surface water resources. New development under the General Plan could result in releases of hazardous materials which could become entrained in stormwater runoff and affect local creeks, or percolate through soil and affect groundwater resources.

Mitigation Measure HAZARDS-2: Policy OS4.3 shall be modified to include groundwater and surface water resources:

- *Promote best management practices to protect soil**, groundwater, and surface water** resources from industrial, agricultural and other uses that produce or dispose of hazardous or toxic substances.*

With the inclusion of this revised policy, this potential impact would be reduced to less than significant. (Less than Significant)

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4.M Hydrology and Water Quality

Introduction

This section describes existing hydrologic and water quality conditions in St. Helena; federal, state, and local regulations pertaining to water quality, flood management, and related hazard mitigation; and potential impacts of the proposed General Plan Update on surface and groundwater quality, groundwater recharge, stormwater drainage, hydrologic function of receiving waters, and flooding.

Setting

Climate

St. Helena's climate is characterized by long, dry, warm summers and mild, relatively wet winters.

The City of St. Helena has a Mediterranean climate, with distinct wet and dry seasons. The climate is characterized by long, dry, warm summers and mild, relatively wet winters. The average maximum temperature during the months of July and August is about 90 degrees Fahrenheit (°F), and average minimum temperatures drop to 30 to 40°F in winter. The mean annual precipitation is about 33 inches, with most of the rainfall occurring between November and April and the highest average rainfall totals occurring in January and February (West Yost Associates, 2003; National Climatic Data Center, 2009). Snowfall in Napa County is not uncommon at higher elevations. However, the vast majority of the precipitation occurs as rain, and snow generally does not persist for more than a few days following a storm event except at the very highest elevations (Napa County Conservation, Development and Planning Department, 2005).

Topography

Napa County is located in the northern Coast Range of California. The Coast Range parallels the coastline from the Oregon border to just north of the Los Angeles Basin. Napa County is bordered to the east by the Central Valley and to the west by the Coast Range. Topography within the county consists of a series of parallel northwest-trending mountain ridges and intervening valleys. The Napa Valley is about three miles wide and 40 miles long.

The City of St. Helena is within the Napa River watershed.

The City of St. Helena is within the Napa River watershed. The watershed consists of a valley floor surrounded by mountains. Napa Valley floor elevations range from approximately 400 feet above mean sea level (msl) in the northern mountains to sea level at San Pablo Bay. The valley is bound to the west by the Mayacama Mountains ranging from 1,000 to 2,700 feet above msl, to the north by Mount St. Helena, and to the east by a northwest-

trending range of mountains (Vaca Mountains) that are generally 2,000 feet above msl and higher. The highest peak surrounding the valley is Mount St. Helena at an elevation of 4,343 feet (Napa County Conservation, Development and Planning Department, 2005).

Groundwater Resources

The city overlies the Napa-Sonoma Valley Groundwater Basin and the Napa Valley Groundwater Subbasin (San Francisco Bay Basin Plan Subbasin I.D. 2-2.01) (RWQCB, 2007). The groundwater subbasin area is 45,900 acres (approximately 72 square miles) (DWR, 2003). Depth to groundwater in the water-bearing aquifers ranges from approximately 50 to 300 feet below ground surface (Napa County Conservation, Development and Planning Department, 2005).

Generally, the groundwater flow direction is from the sides of the valley toward the Napa River and its tributaries, and south toward San Pablo Bay.

Generally, the groundwater flow direction is from the sides of the valley toward the Napa River and its tributaries, and south toward San Pablo Bay. The subbasin is recharged by rain, irrigation water, and percolation from some streams and tributary channels. However, the Napa River contributes very little recharge to groundwater, and in some locations, groundwater discharges to the river and its upper tributaries, characterizing the river as a "gaining" stream[1] in these reaches. Outflow from the subbasin occurs through pumping, discharge to surface water, springs, and evapotranspiration (West Yost Associates, 2003).

Beneficial uses of the subbasin include municipal and domestic water supply, industrial process water supply, industrial service water supply, and agricultural water supply (RWQCB, 2007). Along with surface water resources, the groundwater subbasin is used for the city's potable water supply, which is discussed in more detail in Section 4.R, Utilities and Service Systems, of this EIR.

Surface Water Resources

The city's surface water resources are within the San Pablo Basin Hydrologic Planning Area, as designated in the San Francisco Bay Basin Water Quality Control Plan (Basin Plan) (RWQCB, 2007). The Napa River watershed is within this hydrologic planning area. The Napa River is the largest river in Napa County, with a watershed area of approximately 426 square miles (Napa County Resource Conservation District, 2002). The river drains numerous tributaries on its 55-mile run from its headwaters at Mount St. Helena to San Pablo Bay. The lowest reaches of the Napa River and tributaries in the lower

[1] A gaining stream is a stream in which groundwater discharges contribute significantly to the stream flow volume.

Napa Valley are tidally influenced because of their proximity to San Pablo Bay; the Napa River is tidally influenced northward into the City of Napa (south of the city). Surface water resources in the city such as the Napa River, York Creek, and Sulphur Creek. are shown on Figure 4.M-1.

Beneficial uses of the Napa River as indicated in the Basin Plan (RWQCB, 2007) include agricultural supply, municipal and domestic supply, cold freshwater habitat, fish migration, preservation of rare and endangered species, fish spawning, warm freshwater habitat, wildlife habitat, water contact recreation, non-contact water recreation, and navigation.

York Creek and Sulphur Creek, which are tributaries to the Napa River, also flow through the city and are described below.

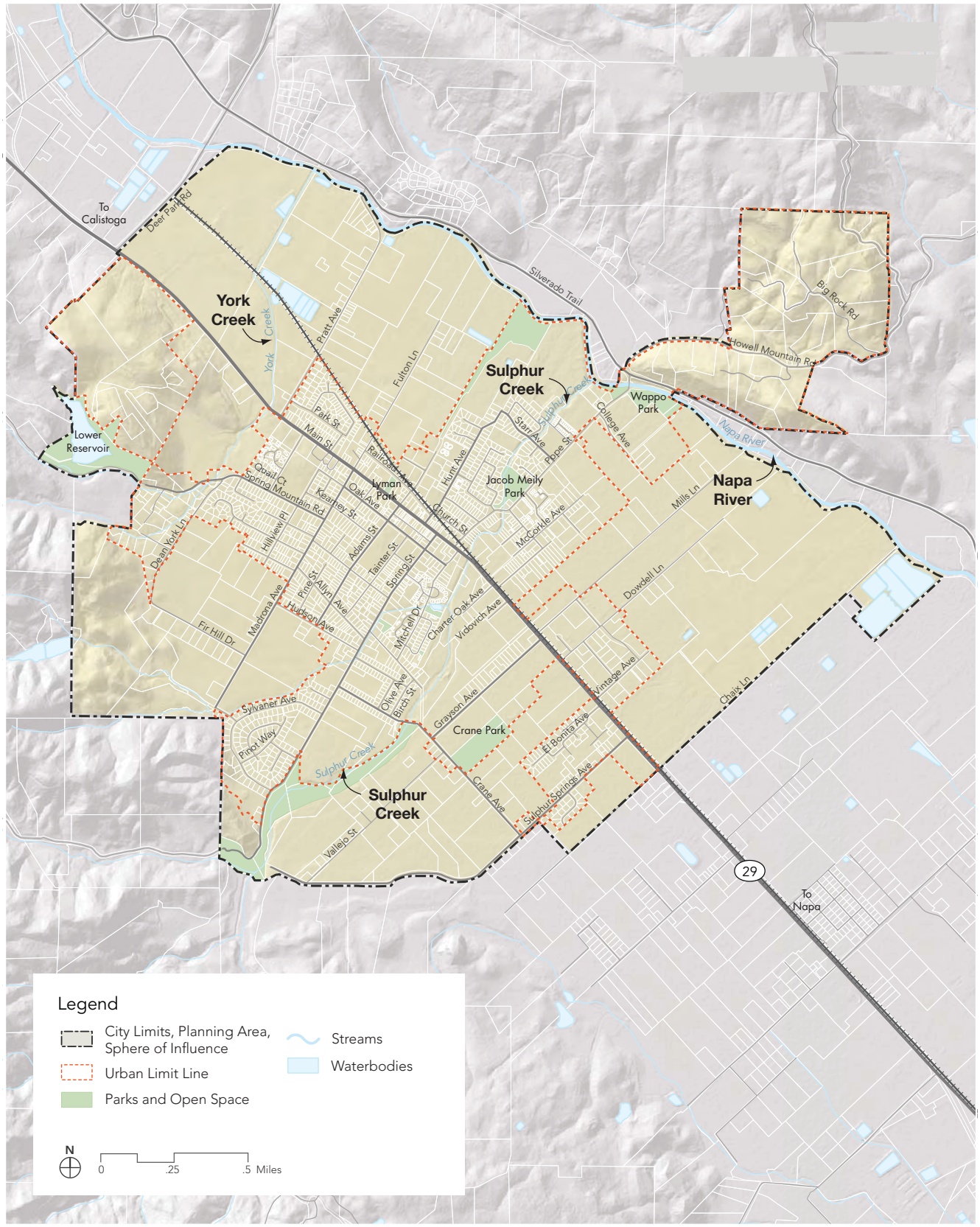
York Creek Subwatershed

York Creek enters St. Helena from the west near the Lower Reservoir and flows north into the Napa River west of Pratt Avenue.

York Creek originates on the eastern slope of the Mayacamas Mountains and flows easterly to its confluence with the Napa River (Figure 4.M-1). The length of the channel is approximately 7.2 miles and the watershed drainage area is approximately 4.4 square miles (Prunuske Chatham, Inc., 2007). York Creek enters the city from the west near the Lower Reservoir and flows north into the Napa River west of Pratt Avenue. Within the city, York Creek has been modified through riparian vegetation removal, bank hardening, levee construction, and bridge placement (USACE, 2006).

The Upper Reservoir is located on York Creek approximately one-and-a-half miles upstream of the city. Use of the Upper Reservoir for water storage and supply ended in the 1980s due to sedimentation issues. Low flows from York Creek entering the reservoir are directed to a drop-inlet standpipe located just behind the face of the dam. During periods of high flow, a concrete spillway parallel to Spring Mountain Road conveys storm flows approximately 100 feet downstream, where the flows rejoin York Creek. The York Creek diversion dam is located about one-half mile downstream of the Upper Reservoir. Its function is to divert water from York Creek to the Lower Reservoir.

The Upper Reservoir captures all of the coarse sediment produced in its 2.4-square-mile drainage area. The channel below the dam has adjusted to a sediment-starved condition over the last 100 years. Channel incision that has occurred in both York Creek and the Napa River has been attributed in part to the construction of the Upper Reservoir and the associated reductions in gravel supply (Prunuske Chatham, Inc., 2007).



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

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Figure 4.M-1
Minor and Major Streams

Existing beneficial uses of York Creek as stated in the Basin Plan (RWQCB, 2007) include cold freshwater habitat, fish migration, fish spawning, wildlife habitat, water contact recreation, non-contact water recreation, and navigation. Potential beneficial uses include water contact recreation and non-contact water recreation.

Sulphur Creek Subwatershed

Sulphur Creek flows into the city from the south along Sulphur Springs Road and flows north to its confluence with the Napa River near the Pope Street Bridge.

The Sulphur Creek watershed area is 9.3 square miles. Sulphur Creek has two main stems, Heath Canyon and the main stem of Sulphur Creek, which come to a confluence immediately before Sulphur Creek exits Sulphur Canyon and begins to flow across the valley. Heath Canyon and Sulphur Creek have a channel length of approximately 12.7 miles, and the lower one-and-a-half miles of Sulphur Creek flow through the city. Sulphur Creek flows into the city from the south along Sulphur Springs Road and flows north to its confluence with the Napa River near the Pope Street Bridge. The lower reach of Sulphur Creek is referred to as the historic gravel mining reach because of the extensive gravel deposition in the area and historic gravel mining activities that occurred (Sulphur Creek Watershed Task Force et al., 2004).

Beneficial uses for Sulphur Creek are not specifically listed in the Basin Plan; however, the Basin Plan states that beneficial uses of any specifically identified water body generally apply to its tributaries (RWQCB, 2007).

Flooding

Information on flooding and dam inundation zones within the city is available from the Federal Emergency Management Agency (FEMA), the California Office of Emergency Services (via the Association of Bay Area Governments [ABAG]), and the City of St. Helena's Comprehensive Flood Protection Project ("2006 Plan"). The U.S. Army Corps of Engineers has not identified flood hazards in Napa County or areas subject to inundation due to the possible failure of levees or floodwalls associated with state flood protection or water supply projects; Napa County also has no state-defined levee protection zones, although levees do exist (County of Napa, 2008). There are no floodway maps available from the Central Valley Flood Protection Board for Napa County. The Department of Water Resources only has Awareness Floodplain Mapping Program maps for the portion of Napa County that discharges to the Central Valley and therefore does not have floodplain mapping for the City of St. Helena.

Napa River

The majority of the flooding in Napa County occurs within the Napa Valley floor.

The majority of the flooding in Napa County occurs within the Napa Valley floor. The Napa River channel contains about a ten-year flood (12,500 cubic feet per second [cfs]) before spilling onto the valley floor. Napa River flows are largely influenced by precipitation, with peak flows occurring generally in January or February and the lowest flows occurring August through November. Flow rates on the Napa River typically range from over 20,000 cfs in large peak flow events to less than five cfs under summer low flow conditions (City of St. Helena, 2003).

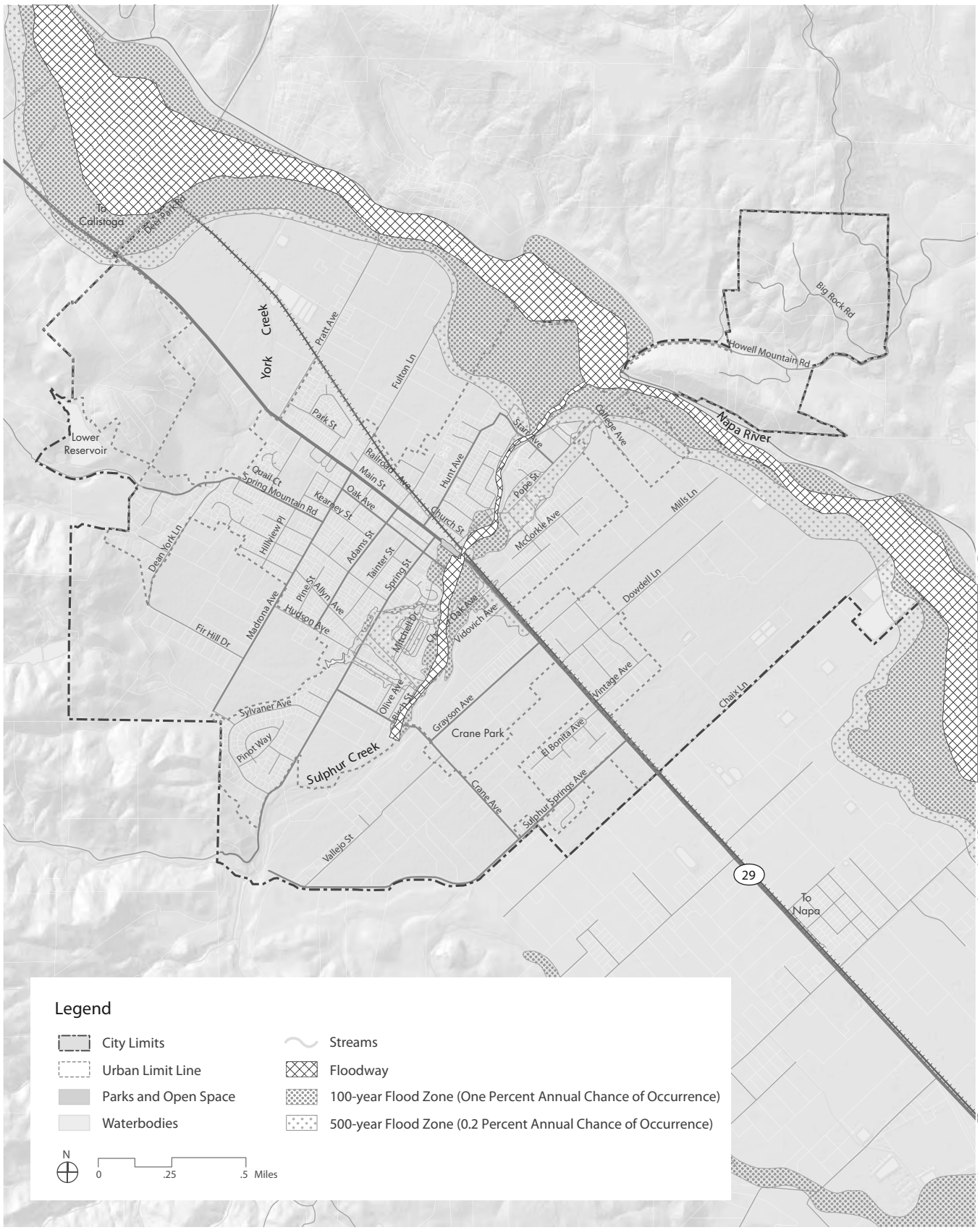
Between 1961 and 1997, flooding has caused $540 million in property damage in the county. Since 1862, 28 major floods have occurred in the Napa Valley. Floods in 1986 and 1995 overtopped existing flood control structures along the Napa River, causing damage in the City of St. Helena exceeding $50 million. Flooding from tidal fluctuations in the county does not cause significant economic damage and is limited to areas in the lowland sloughs in the southern portion of the county, south of the St. Helena (Wadsworth, 1998; Napa County Conservation, Development and Planning Department, 2005; EDAW, 2007; Napa County General Plan, 1996).

In October 1998, the City of St. Helena joined in a collaborative effort with the Napa County Board of Supervisors and the Napa County Flood Control District to perform a joint study of the Napa River to better understand the hydraulics of flood flows in the Napa River from Deer Park Road to below Pope Street. The study's conclusions indicated a more serious flood hazard to the community than previously established by FEMA and resulted in the enlargement of the city's 100-year floodplain (EDAW, 2007). Figure 4.M-2 shows 100-year flood zones (Special Flood Hazard Areas) as designated by FEMA.

In 2006, the City of St. Helena developed the components and design measures for a comprehensive flood protection project, referred to as the "2006 Plan". The Natural Environment Background Working Paper (EDAW, 2007) describes the primary components of the "2006 Plan", which include construction of a floodplain terrace, levee, floodwall and detention basin; removal of mobile homes; bank restoration; and riparian vegetation management.

York Creek

Flooding from York Creek can significantly affect residential and industrial properties (Prunuske Chatham, Inc., 2007). In 2005, Beringer winery buildings and the Culinary Institute of America's dorms were inundated and sustained damage. In addition, the Beringer water treatment plant flooded and ponds overflowed into York Creek. Vineyards on both sides of York



SOURCE: City of St. Helena; Napa County, Federal Emergency Management Agency (FEMA), 2008, Digital Flood Insurance Rate Map Database; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.M-2
Areas Subject to Flooding

Creek downstream of Highway 29 to the Napa River were flooded and many had to be replaced.

Sulphur Creek

Flood hazards in the Sulphur Creek watershed are due primarily to channel bed aggradation[2] in the lower reach where gravel mining was historically conducted. Sulphur Creek continues to supply and deposit substantial amounts of sediment in this reach, and local observations suggest that as much as five feet of material have accumulated in the channel bed since the cessation of gravel mining in 1999. Historically, gravel mining removed approximately 40,000 to 50,000 cubic yards of material annually. Consequently, the increased volume of sediment currently stored in the channel decreases the volume available for floodwater, potentially causing an increased flood hazard locally and within the City of St. Helena (Sulphur Creek Watershed Task Force et al., 2004). It is expected that the streambed will continue to aggrade without the removal of coarse sediment from the braided[3] channel.

Multiple channel crossings and constrictions exist along Sulphur Creek and its tributaries. The main stem of Sulphur Creek has seven major road crossings comprised of bridges and box culverts. Additional, smaller crossings are located on tributaries. Most of the seven major crossings are large enough to handle flood flow, but many smaller crossings and culverts on the tributaries have been identified as undersized (Sulphur Creek Watershed Task Force et al., 2004). Channel modifications, including both on- and off-stream reservoirs, are altering flow patterns in the Sulphur Creek watershed. The watershed currently contains ten on- and off-stream reservoirs, which intercept and retain storm flows, acting to reduce the peak of the hydrograph and flooding. However, several of these reservoirs have inadequate overflow protection (i.e., spillways) and have the potential to cause severe erosion. Inadequate overflow protection also has the potential to cause catastrophic failure of a reservoir (USACE, 2006).

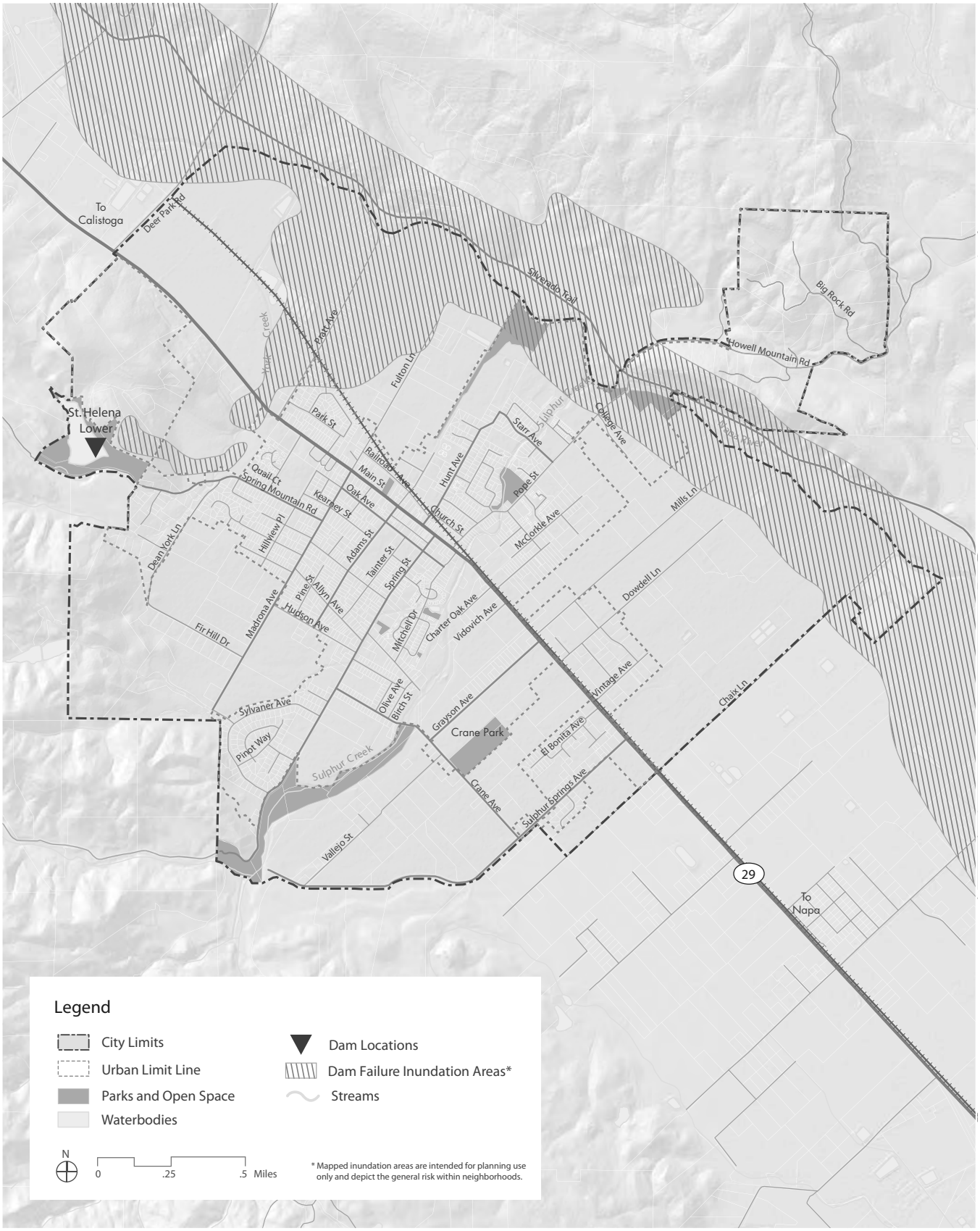
Dam Failure Inundation Zones

Two dams – the St. Helena Lower Reservoir and the Heitz Wine Cellars Dam – are located within St. Helena.

Areas subject to flooding from structural dam failure are determined by the California Office of Emergency Services, and the inundation data were obtained from ABAG. Two dams are located within the City of St. Helena (Figure 4.M-3). These are the St. Helena Lower Reservoir (approximately

2 Aggradation refers to the increase in land elevation due to the deposition of sediment. Aggradation occurs in areas in which the supply of sediment is greater than the amount of material that the system is able to transport.

3 A braided channel is a stream channel in which separate channels that convey flows are divided by islands or bars.



SOURCE: City of St. Helena; Napa County, ABAG 1995; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.M-3
Dam Failure Inundation Areas

230 acre-feet of storage) and the Heitz Wine Cellars Dam (49 acre-feet of storage). Portions of the City of St. Helena that are mapped as a dam failure inundation zone, including inundation from the Bell Canyon Reservoir located outside city limits, are shown on Figure 4.M-3 (ABAG, 2009). Failure of the St. Helena Lower Reservoir, the Heitz Wine Cellars Dam, and Bell Canyon Reservoir could severely affect people and structures in the general vicinity of the mapped inundation zone. As discussed above, the St. Helena Upper Reservoir is currently not used for water storage, and consequently there is no current flooding risk associated with the structural failure of the Upper Reservoir. The three active dams are overseen by the California Department of Water Resources, Division of Safety of Dams (DOSD).

Coastal and Bay Hazards

Sea Level Rise

The earth has gone through several cycles of cooling and warming over recent geologic time, resulting in periods of glaciation with an associated sea level lowering, and climate warming with sea level rise. The most recent cycle of global climate change is a warming trend of the earth's atmosphere (an increase of approximately 1.8°F in the last 100 years), which has resulted in sea level rise. Based on long-term monitoring of stationary tidal gauges around the world, it is estimated that the current background rate of sea level rise is 0.07 to 0.08 inch per year (Titus and Narayanan, 1995).

With Napa Valley floor elevations at approximately 400 feet above mean sea level, sea level rise is not likely to affect Napa County or the City of St. Helena in the near future.

Rates of sea level rise may vary at specific locations, as local subsidence or uplift affects the relative change in sea level between land masses and the ocean. In the San Francisco Bay area, the background rate of sea level rise has been estimated to be approximately 0.08 inch per year over the past 100 years (NOAA, 2007). With Napa Valley floor elevations at approximately 400 feet above msl, sea level rise is not likely to affect Napa County or the City of St. Helena in the near future.

Seiche

A seiche is a standing wave in an enclosed or partially enclosed body of water. Seiches have been observed in lakes, bays, and harbors, and can be triggered by strong winds, changes in atmospheric pressure, earthquakes, tsunami, or tides. Coastal measurements of sea level often show seiches with amplitudes of a few centimeters and periods of a few minutes due to oscillations of the local harbor, estuary, or bay, superimposed on the normal tidal changes.

Earthquake faults in the Bay Area such as the San Andreas Fault and the Hayward Fault, as well as active faults within Napa County such as the Green Valley, West Napa, Cordelia, and Hunting Creek faults, could produce ground

shaking within the County (Napa County Conservation, Development and Planning Department, 2007). Seiches would be limited to the larger reservoirs in the county (e.g., Lake Berryessa, Bell Canyon Reservoir, Lake Hennessey, Rector Reservoir, and Milliken Reservoir). The potential for loss of life and damage to structures is considered low because development immediately along the shorelines of these reservoirs is largely restricted, given the use of the reservoirs as municipal water supply sources and Napa County General Plan land use designations and zoning (County of Napa, 1996).

Tsunamis

Tsunamis are long-period water waves caused by underwater seismic events, volcanic eruptions, or undersea landslides. Tsunamis affecting the San Francisco Bay region would most likely originate west of the bay, in the Pacific Ocean. Areas that are highly susceptible to tsunami inundation tend to be low-lying coastal areas, such as tidal flats, marshlands, and former bay margins that have been artificially filled.

The potential for damage by a tsunami in St. Helena is low because the city is not directly exposed to the open ocean and lacks bay front.

The potential for damage by a tsunami in the City of St. Helena is considered low because the city is not directly exposed to the open ocean and lacks bay front. Estimates made by the U.S. Geological Survey indicate that the risk of a damaging event is approximately a 0.5-percent risk in any year, and that the degree of hazard is also low, because the maximum run-up height is ten feet at Point Richmond and one foot at the Carquinez Strait (County of Napa, 1996).

Extreme High Tide

Extreme high tides in San Francisco Bay result from the combined effects of astronomical high tides (related to the lunar cycle) and other factors, including winds, barometric pressure, ocean temperatures, and freshwater runoff. In California, the highest astronomical tides occur in the summer and winter, and therefore extreme high tides are most likely to occur during these times. Based on the 129-year record of daily high tide, the U.S. Army Corps of Engineers has developed an estimated 100-year high tide elevation (an extreme high tide with a probability of occurrence every 100 years) for various locations in the bay. The elevation of the estimated 100-year tide at the Petaluma River at San Pablo Bay and Sonoma Creek near San Pablo Bay is 6.5 feet NGVD (USACE, 1984). The San Francisco Bay Conservation and Development Commission (BCDC) evaluated the effects of sea level rise due to climate change on 100-year tides (BCDC, 1988). The BCDC projects the 100-year high tide at Sonoma Creek will change from 6.5 feet NGVD to 6.9 feet NGVD. Consequently, it is unlikely that the one-percent (100-year) tide would have a significant environmental impact on the Napa River in St. Helena, as Napa Valley floor elevations are approximately 400 feet above msl.

Water Quality

The quality of surface water and groundwater resources is affected by past and current land uses within the watersheds as well as by the composition of geologic materials in the vicinity.

Groundwater Quality

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 (TDS), nitrate, boron, and organic compounds (City of St. Helena, 2006).

Throughout most of the Napa Valley, groundwater quality is generally suitable for most urban and agricultural uses.

The City of St. Helena has two active groundwater wells that are sources of potable water for the city. These groundwater supplies are treated to remove iron and manganese and are chlorinated prior to entering the City of St. Helena's distribution system (City of St. Helena, 2003). Drinking water supply is discussed in more detail in Section 4.R, Utilities and Service Systems, of this EIR.

Surface Water Quality

With the exception of data collected by volunteer monitoring programs, such as programs managed by the Napa County Resource Conservation District, there are limited recent surface water quality data available for the Napa River watershed.

Impaired Water Bodies and Total Maximum Daily Loads

The Napa River is included on the 2006 Clean Water Act (CWA) 303(d) list of water quality limited segments due to impairment from nutrients, pathogens, and sedimentation/siltation. Development of a nutrient Total Maximum Daily Load (TMDL) is in progress.[4] The pathogen TMDL has been completed by the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the TMDL has been incorporated into the Basin Plan as an amendment. 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 Basin Plan amendment also includes wasteload allocations[5] for individual municipal dischargers including on-site sewage disposal systems, sanitary sewer systems, municipal stormwater runoff, grazing lands, and confined animal facilities.

4 TMDLs are described later under Regulatory Framework.
5 A wasteload allocation is the maximum load of pollutants each discharger of waste is allowed to release into a water body.

View of Sulphur Creek

The 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[6] and streambed scour.[7] The TMDL also includes load allocations (for non-point sources) for land areas upstream and downstream of dams, in addition to wasteload allocations for urban runoff and wastewater discharges. The Basin Plan amendment is awaiting approval by the State Water Resources Control Board.

San Pablo Bay is on the 2006 Clean Water Act (CWA) 303(d) list due to impairment from chlordane, DDT, dieldrin, dioxins and furans, exotic species, mercury, nickel, PCBs, and selenium. TMDLs in development include the PCB TMDL for San Francisco Bay (which includes San Pablo Bay), and the Selenium TMDL for the North San Francisco Bay (which includes a portion of the Sacrament/San Joaquin Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, and the Central Bay).

The mercury TMDL for San Francisco Bay (which includes San Pablo Bay) has been completed and the Basin Plan amendment has been approved. The Basin Plan amendment includes numeric water quality objectives for mercury in fish tissue, and also includes load and wasteload allocations by source category, including urban stormwater and municipal wastewater.

In addition, the City of St. Helena is subject to the TMDL for diazinon and pesticide-related toxicity in all San Francisco Bay Area urban creeks, which was incorporated as a Basin Plan amendment in 2005. 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 U.S. Environmental Protection Agency (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.

Meeting Water Quality Standards

In summary, the adopted TMDLs discussed above contain water quality standards in the form of wasteload allocations that quantify the amount of pollutants that may be discharged into an impaired water body from the various contributing sources, in addition to water quality objectives for

6 Spawning gravel is used by fish to lay eggs. Permeability is a measure of the rate that water and oxygen moves through the gravel.

7 Streambed scour is the lowering of the streambed elevation, or cutting by sediment entrainment. Generally, when sediment supply increases and/or becomes richer in fines, the depth of streambed scour increases.

receiving waters. This includes water quality standards for urban runoff (and wastewater discharges) with which the City of St. Helena must comply. One strategy used by local urban runoff (stormwater) 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. Stormwater regulations that pertain to the City of St. Helena are discussed under Regulatory Framework below.

Regulatory Framework

Responsibility for water resources and flood protection in the City of St. Helena is distributed among many agencies at various levels of government.

Responsibility for water resources and flood protection in the City of St. Helena is distributed among many agencies at various levels of government. At the federal level, the primary agencies are the EPA, FEMA, and U.S. Army Corps of Engineers (USACE). At the state level, the primary agencies are the California Emergency Management Agency (formerly the California Office of Emergency Services), State Water Resources Control Board, and the Regional Water Quality Control Board. At the local level, agencies include the Napa County Flood Control and Water Conservation District, the Napa County Stormwater Management Program, and the City of St. Helena Public Works Department.

Federal Regulations

Federal Clean Water Act (CWA) of 1972

The Clean Water Act (CWA) of 1972 is the primary federal law that protects the quality of the nation's surface waters, including lakes, rivers, and coastal wetlands, and is administered by the EPA. It operates on the principle that all discharges into the nation's waters are unlawful unless specifically authorized by a permit; permit review is the primary regulatory tool of the CWA.

The following sections of the CWA are particularly relevant to the implementation of the General Plan Update:

- Section 303 — Water Quality Standards and Implementation Plans
- Section 401 — Dredge/Fill and Wetlands Certification Program
- Section 402 — National Pollutant Discharge Elimination System
- Section 404 — USACE Fill or Dredge Discharge Permits

With the exception of the 404 permits, the EPA has delegated its authority to implement and enforce the provisions of these sections to the individual states. In California, the provisions are enforced by nine Regional Water Quality Control Boards under the auspices of the State Water Resources Control Board. Additional information on the requirements imposed by CWA Sections 303, 401, and 402 is provided below.

CWA Section 402—National Pollutant Discharge Elimination System (NPDES) Program

Section 402 of the Clean Water Act regulates stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program.

CWA Section 402, enacted as an amendment to the original act in 1972, regulates construction-, industrial-, and municipal-related stormwater discharges to surface waters through the National Pollutant Discharge Elimination System (NPDES) program. The NPDES program provides for general permits and individual permits. In California, the State Water Resources Control Board is authorized by the EPA to oversee the NPDES program through the Regional Water Quality Control Boards via the Porter-Cologne Act, as described below.

Stormwater runoff can entrain pollutants from a variety of sources. Many types of human activity, including new construction projects, industrial activity, agriculture, and urbanization, can result in discharge of pollutants to surface waters. The NPDES program contains several sub-programs: the construction, industrial, and municipal stormwater runoff programs, as discussed under “State Regulations”, below. These programs could apply to projects and activities in the City of St. Helena.

CWA Section 303(d)—Total Maximum Daily Load (TMDL) Program

Section 303(d) of the Clean Water Act requires that the states make a list of waters that are not attaining water quality standards.

Section 303(d) of the CWA requires that the states make a list of waters that are not attaining water quality standards after the technology-based limits on point sources are put into place. For impaired waters on this list, the states must develop TMDLs. A TMDL is a written plan that describes how an impaired water body will meet water quality standards. The plan must which contain:

- A measurable feature to describe attainment of the water quality standard(s);
- A description of required actions to remove the impairment; and
- An allocation of responsibility among dischargers to act in the form of actions or water quality conditions for which each discharger is responsible.

A TMDL must account for all sources of the pollutants that caused the water to be listed. Federal regulations require that the TMDL, at a minimum, account for contributions from point sources (federally permitted discharges) and contributions from non-point sources (such as agricultural runoff). The impaired water body list and TMDLs must be approved by the EPA prior to adoption by the State Water Resources Control Board and Regional Water Quality Control Board.

CWA Section 401—Dredge/Fill and Wetlands Certification

Section 401 of the Clean Water Act grants each state the right to ensure that the state's interests are protected in any federally permitted activity occurring in or adjacent to "Waters of the State.

Section 401 of the CWA grants each state the right to ensure that the state's interests are protected in any federally permitted activity occurring in or adjacent to "Waters of the State." If a proposed project requires a USACE CWA Section 404 permit, or involves dredge or fill activities that may result in a discharge to "Waters of the State," the project proponent is required to obtain a CWA Section 401 Water Quality Certification and/or Waste Discharge Requirements (Dredge/Fill Projects) from the State Water Resources Control Board, to verify that the project activities will comply with state water quality standards. Section 401 of the CWA gives the State Water Resources Control Board the authority to consider the impacts of the entire project and require mitigation for volume, velocity, and pollutant load of the discharge from new outfalls to surface waters, when issuing certifications.

Federal Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally backed flood insurance available for communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. FEMA manages the NFIP. FEMA creates Flood Insurance Rate Maps (FIRMs) that designate 100-year floodplain zones and delineate other flood hazard areas. A 100-year floodplain zone is the area that has a one in 100 (one-percent) chance of being flooded in any one year based on historical data. Relevant flood management requirements for the City of St. Helena are discussed under "Local Regulations."

State Regulations

Porter-Cologne Act and State Implementation of Clean Water Act Requirements

The Porter-Cologne Water Quality Control Act (California Water Code, Division 7, Water Quality), promulgated in 1969, implements the federal CWA. It established the State Water Resources Control Board and divided the state into nine hydrologic regions, each overseen by a Regional Water Quality Control Board. The State Water Resources Control Board is the primary state agency responsible for protecting the quality of the state's surface water and groundwater resources, but much of its daily implementation authority is delegated to the nine Regional Water Quality Control Boards.

The City of St. Helena is located within the San Francisco Bay Basin Plan region.

The Porter-Cologne Act also provides for the development and tri-annual review of Water Quality Control Plans (Basin Plans) that designate beneficial uses of California's major rivers and groundwater basins and establish narrative and numerical water quality objectives to protect the beneficial uses of those waters. Basin Plans are primarily implemented through NPDES permits, waste discharge requirements, TMDLs, discharge prohibitions, and watershed management efforts. Basin Plans provide the technical basis for determining waste discharge requirements, taking enforcement actions, and evaluating clean water grant proposals. The Porter-Cologne Act assigns responsibility for implementing the NPDES and Total Maximum Daily Load programs to the State Water Resources Control Board and the Regional Water Quality Control Boards. The City of St. Helena is located within the San Francisco Bay Basin Plan region.

Drinking Water Standards

Maximum contaminant levels (MCLs) for various contaminants are identified and are made enforceable regulatory standards under the federal Safe Drinking Water Act. Title 22 of the California Code of Regulations (CCR) outlines drinking water standards for California. MCLs must be met by all public drinking water systems to which they apply. At a minimum, surface water and groundwater with a designated beneficial use as domestic or municipal supply in the Basin Plan shall not contain concentrations of constituents in excess of the MCLs or secondary MCLs specified in Title 22, which are incorporated by reference into the Basin Plan.

Construction General Permit

Construction activities on one acre or more of land are subject to National Pollutant Discharge Elimination System (NPDES) permitting requirements.

Construction activities on one acre or more of land are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activity Activities, Order No. 2009-0009-DWQ (Construction General Permit). To obtain coverage under the Construction General Permit, the discharger must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects such as pipeline installations.

The Construction General Permit exercises a new risk-based permitting approach and mandates certain requirements based on the risk level of the project (Level 1, Level 2, or Level 3). The risk level of the project is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season

versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water, defined by the beneficial uses of the receiving water in the Basin Plan (e.g., cold freshwater habitat), a listing on the 303(d) list due to sediment impairment, or having a TMDL in place to address excessive sedimentation.

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve Best Available Technology (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (BCT) for treatment of conventional pollutants.[8] The permit also imposes numeric action levels (Level 2 and Level 3 projects) and numeric effluent limits (Level 3 projects) for pH and turbidity, as well as minimum Best Management Practices (BMPs) that must be implemented at all sites.

A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is to (1) help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges, and (2) describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements in the permit. For Level 2 and Level 3 projects, the discharger must also prepare a Rain Event Action Plan as part of the SWPPP that must be designed to protect all exposed portions of the construction site within 48 hours prior to any likely precipitation event.

The SWPPP must also include a construction site monitoring program. Depending on the project risk level, the monitoring program will include visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants, if applicable), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

Local oversight is provided by the Regional Water Quality Control Board.

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8 As defined by U.S. EPA, Best Available Technology (BAT) is a technology-based standard established by the CWA as the most appropriate means available on a national basis for controlling the direct discharge of toxic and non-conventional pollutants to navigable waters. The BAT effluent limitations guidelines, in general, represent the best existing performance of treatment technologies that are economically achievable. Best Conventional Technology (BCT) is a technology-based standard that applies to treatment of conventional pollutants, such as total suspended solids.

Industrial General Permit

The State Water Resources Control Board regulates stormwater runoff from industrial sources under a statewide general permit.

Stormwater runoff from industrial sources and associated pollutants is regulated in California by the State Water Resources Control Board under the statewide General Permit for Stormwater Discharges associated with Industrial Activities (Water Quality Order No. 97-03-DWQ, General Permit No. CAS000001). The Industrial General Permit presents the requirements for compliance of certain industries with the NPDES program. A wide range of industries – including mining operations, lumber and wood products facilities, petroleum refining, metal industries, and some agricultural product facilities, such as dairies – are covered under the Industrial General Permit. Coverage is determined by Standard Industrial Classification (SIC) code. New industrial facilities with SICs requiring permit coverage are required to obtain coverage under the Industrial General Permit and comply with the permit requirements, which include preparation and implementation of a facility-specific SWPPP, monitoring, and annual reporting to the State Water Resources Control Board. Local oversight is provided by the Regional Water Quality Control Board.

Municipal Stormwater Permit

California's municipal stormwater permitting program regulates stormwater discharges from municipal separate storm sewer systems.

California's municipal stormwater permitting program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). MS4 Permits were issued in two phases. Under Phase I, which was initiated in 1990, the Regional Water Quality Control Boards adopted individual NPDES stormwater permits for medium municipalities (serving between 100,000 and 250,000 people) and large municipalities (serving 250,000 people). Most of these permits were issued to a group of co-permittees encompassing an entire metropolitan area. As part of Phase II, the State Water Resources Control Board adopted a statewide General Permit for the Discharge of Storm Water from Small MS4s (Water Quality Order No. 2003-0005-DWQ, General Permit No. CAS000004) (Phase II General 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 City of St. Helena is regulated under the Phase II General Permit as part of the Napa County Stormwater Management Program; more details are provided under "Local Regulations" below. Local oversight is provided by the Regional Water Quality Control Board.

State Water Board Low Impact Development Policy

On January 20, 2005, the State Water Resources Control Board adopted the Low Impact Development (LID) Policy which, at its core, promotes the idea of "sustainability" as a key parameter to be considered during the design and planning process for future development. The State Water Resources Control

Board has directed its staff to consider sustainability in all future policies, guidelines, and regulatory actions.

The sustainability practice promotes LID to benefit water supply and contribute to water quality protection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management. The Regional Water Quality Control Boards are advancing LID in California in various ways, including provisions for LID requirements in renewed Phase I municipal stormwater NPDES permits. The Phase II General Permit, a draft update of which is planned for 2010, will likely include additional LID requirements to achieve water quality goals and to protect against stream channel hydromodification.[9]

Dam Inundation Mapping Requirement and Dam Oversight

Section 8589.5 of the California Code of Regulations requires that dam owners submit flood routing information, land surveys to delineate the floodplain, and a technical report to support a dam failure inundation map to the California Office of Emergency Services. The purpose of the program is to provide decision support for emergency preparedness planning, mitigation, and response to and recovery from potential damage to life and property from dam inundation flood waves. Based upon approved inundation maps (or the delineated areas), cities and counties with territory in the mapped areas are required to adopt emergency procedures for the evacuation and control of populated areas below the dams.

The Lower Reservoir and Heitz dams – the two active dams with failure inundation zones within the City of St. Helena – are overseen by the California Department of Water Resources, Division of Safety of Dams (DOSD). DOSD engineers and engineering geologists review and approve plans and specifications for the design of dams and oversee their construction to ensure compliance with the approved plans and specifications. Reviews include site geology, seismic setting, site investigations, construction material evaluation, dam stability, hydrology, hydraulics, and structural review of appurtenant structures. In addition, DOSD engineers inspect over 1,200 dams annually to ensure the dams are performing and being maintained in a safe manner.

[9] Hydromodification or hydrograph modification causes stream bank erosion, channelization, increased flood flows, and other physical modifications that can adversely affect aquatic ecosystems due to increased sedimentation and reduced water quality (e.g., higher water temperatures, lower dissolved oxygen concentrations).

California Assembly Bill 2140 (2006)

Assembly Bill 2140 allows cities and counties to adopt a local hazard mitigation plan as a part of the safety element of the general plan.

Assembly Bill 2140, enacted in September 2006, allows cities and counties to adopt a local hazard mitigation plan as a part of the safety element of the general plan. The hazard mitigation plan must include (1) an initial earthquake performance evaluation of public facilities that provide essential services, shelter, and critical governmental functions; (2) an inventory of private facilities that are potentially hazardous, including multi-unit, soft story, concrete tilt-up, and concrete frame buildings, and (3) a plan to reduce the potential risk from private and governmental facilities in the event of a disaster. Hazards are to include an evaluation of tsunami, seiche, and dam failure risks. Assembly Bill 2140 is not a mandate, and compliance is optional. Local jurisdictions that have not adopted a local hazard mitigation plan shall be given preference by the California Office of Emergency Services to receive FEMA funding to assist in developing such a mitigation plan.

California Assembly Bill 162 (2007)

Assembly Bill 162 calls for flood safety planning to be better integrated into local general plans.

Assembly Bill 162, enacted in October 2007, calls for flood safety planning to be better integrated into local general plans. Specifically, Assembly Bill 162 includes the following requirements related to flood risks:

- The land use element of the general plan must identify and annually review those areas covered by the general plan that are subject to flooding, as identified by floodplain mapping prepared by FEMA or the California Department of Water Resources.
- Upon the next revision of the housing element, on or after January 1, 2009, the conservation element of the general plan must identify rivers, creeks, streams, flood corridors, riparian habitat, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.
- A city or county general plan must contain a safety element for the protection of the community from any unreasonable risks associated with the effects of seismically-induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure, slope instability leading to mudslides and landslides, subsidence, liquefaction, and other seismic, geologic, and fire hazards.

Local Regulations

Napa County Stormwater Management Program

The cities of Napa and St. Helena, the Town of Yountville, and the County of Napa submitted a Notice of Intent (NOI) for coverage under the Phase II Stormwater General Permit on March 10, 2003, and the City of Calistoga

The Stormwater Management Plan developed by the Napa County Stormwater Management Program in 2003 allows for coordination among the cities of Napa and St. Helena, the Town of Yountville, and the County of Napa.

submitted a NOI on October 27, 2003. Together, these municipalities formed the Napa County Stormwater Management Program.

In December 2003, the Napa County Stormwater Management Program developed a Stormwater Management Plan (SWMP), as required by the Phase II General Permit. The *SWMP* describes BMPs, measurable goals, and timetables for implementation in five program areas – Public Education, Public Participation, Illicit Discharge Detection and Elimination, Construction Site Storm Water Runoff Control, and Post Construction Storm Water Management. Although the County of Napa and each of the cities and towns implement their own individual stormwater pollution prevention programs, the SWMP allows for coordination and consistency of approaches among the individual participants and documents their efforts in annual reports that are submitted to the Regional Water Quality Control Board.

St. Helena Municipal Code

The St. Helena Municipal Code contains provisions for stormwater and runoff pollution control, flood damage protection, and drainage.

The following provisions of the St. Helena Municipal Code are relevant to hydrology and water quality issues.

Title 13, "Public Services," includes Chapter 13.32, "Stormwater and Runoff Pollution Control Ordinance," which details requirements that consist of:

- 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 calls for minimization of public and private losses from flood conditions in specific areas through provisions designed to:

- Protect human life and health;
- Minimize expenditure of public money for costly flood-control projects;

- Minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public;

- Minimize prolonged business interruptions;

- Minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in areas of special flood hazard;

- Help maintain a stable tax base by providing for the sound use and development of areas of special flood hazard so as to minimize future blighted areas caused by flood damage; and

- Ensure that potential buyers are notified that property is in an area of special flood hazard; and ensure that those who occupy the areas of special flood hazard assume responsibility for their actions. (Ordinance 06-8, Section 3 [part]: prior code Section 5B.3)

Title 16, "Subdivisions," includes Chapter 16.32, "Design Standards and Improvements" and includes the following provisions:

- Section 16.32.070, "Drainage," which requires stormwater runoff from the subdivision 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 17.88.040, "Utilities," which requires that new or replacement water supply systems and/or sanitary sewer systems be designed to minimize or eliminate infiltration of floodwaters into the systems and discharges from the systems into flood waters, and on-site waste disposal systems shall be located so as to avoid impairment of them or contamination from them during flooding. (Prior code Section 27.168).

- 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 Federal Emergency Management Agency (FEMA). (Prior code Section 27.169).

City of St. Helena Stormwater Management Standards (Construction and Post-Construction Standards)

The City of St. Helena has developed stormwater management standards that apply to discretionary and ministerial projects requiring a use permit, building permit, and/or grading permit.

The City of St. Helena has developed stormwater management standards to comply with the Phase II General Permit that apply to discretionary and ministerial projects submitting an application for a use permit, building permit, and/or grading permit after September 13, 2005 (City of St. Helena, 2005a). The standards include both a construction and post-construction phase review and permitting process implemented by the St. Helena Public Works Department.

Construction-Phase Erosion Control Plans and Storm Water Pollution Prevention Plans

If a project is subject to construction-phase requirements, the applicant must prepare an Erosion Control Plan (ECP) for sites of less than one acre and a Storm Water Pollution Prevention Plan (SWPPP) for sites of one acre or more. The plans must depict BMPs that will be implemented during construction to eliminate or minimize the discharge of pollutants.

For projects with slopes of less than 15 percent, any person may prepare ECPs or SWPPPs. For projects with steeper slopes, however, only persons specified in the standards (e.g., a licensed civil engineer, a certified erosion and sediment control specialist) may prepare the documents. Prior to obtaining a building or grading permit, applicants with projects disturbing one or more acres must provide a copy of the Waste Discharge Identification Number issued for coverage under the Construction General Permit.

Grading deadlines in the standards mandate that clearing of vegetation, grading, and/or any other soil-disturbing activities shall only occur between April 15th and October 15th of any given year. Erosion and sediment control measures shall be fully implemented by October 15th of each year and maintained through April 15th. In addition, when the ECP/SWPPP requires installation of sediment retention devices, these devices must be installed and functional no later than October 1st of that year.

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 offsite must not be greater than pre-construction levels.

Post-Construction Stormwater Runoff Management Plans

If a project is subject to post-construction requirements, the applicant must submit a Stormwater Runoff Management Plan to the Public Works Department. The Stormwater Runoff Management Plan must include (1) a description of the project's conditions of concern; (2) a site map showing the locations and types of post-construction BMPs that will be incorporated into the project design, including site design, source control, and treatment control BMPs; and (3) a maintenance agreement for the long-term operation of BMPs. For projects with 10,000 or more square feet of impervious area, the applicant must also prepare a Treatment Control BMP Drainage Study consistent with the volume- and flow-based BMP sizing criteria specified in the Standards, which are consistent with the Phase II General Permit.

Volume-based treatment control BMPs (such as detention basins) must be designed to treat the following flows:

(a) The 85th percentile 24-hour runoff event determined as the maximized capture storm water volume for the area, from the formula recommended in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ ASCE Manual of Practice No. 87, (1998); or

(b) The volume of annual runoff based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/ Commercial, (2003); or

(c) The volume of runoff produced from a historical-record based reference 24-hour rainfall criterion for "treatment" that achieves approximately the same reduction in pollutant loads achieved by the 85th percentile 24-hour runoff event.

Flow-based treatment control BMPs (such as vegetated swales) must be designed to treat the following flows:

(a) The flow of runoff produced from a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the area; or

(b) The flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

The City of St. Helena has prepared a Development Manual to assist project applicants with local post-construction requirements (City of St. Helena, 2005b).

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions for hydrology and water quality.

The proposed project analyzed in this EIR is the St. Helena General Plan Update, which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Impacts and Mitigation Measures

Significance Criteria

Based on Appendix G of the CEQA Guidelines, implementation of the proposed General Plan Update would have a significant effect on hydrology and water quality if it would:

- Violate any water quality standards or waste discharge requirements;
- Interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or planned uses for which permits have been granted);
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on site or off site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site;
- Create or contribute runoff water that would exceed the capacity of existing or planned storm sewer systems or provide substantial additional sources of polluted runoff;

- Otherwise substantially degrade water quality;
- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to inundation by seiche, tsunami, or mudflow.

This issue of depletion of groundwater supplies is addressed in Section 4.R, Utilities and Service Systems, of this EIR.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address hydrology and water quality:[10]

> *CD1.5*. Require stormwater management techniques that minimize surface water runoff in public and private developments. Utilize low impact development techniques such as bioswales and other best management practices to manage stormwater.
>
> *CD1.B*. Adopt a Green Building and Landscaping Ordinance that establishes green building and landscaping site design standards customized to meet the unique climatic context of the community. Partner with third party agencies, such as PG&E, to encourage the inclusion of energy-efficient systems in remodels and retrofits of existing buildings and residences. Offer incentives for improving energy-efficiency in existing buildings. Landscaping standards should limit impervious paving and identify standards and incentives that encourage the use of locally-propagated native, low-water, drought-tolerant planting and integrated pest management practices.
>
> *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 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.

[10] When portions of policies are relevant to policies and implementing actions, only those portions are shown.

CD3.B. Revise the ordinance language to limit lot coverage according to parcel size in residential areas in order to preserve neighborhood character, reduce adverse view and shade impacts on existing homes, improve groundwater infiltration, and avoid overbuilt conditions.

CD3.C. Encourage property owners to install landscaping and tree plantings in front setbacks as a buffer between the sidewalk and residential uses.

CD4.2. Integrate open space, including parks, community gardens, natural areas and agriculture into the community to strengthen the connection to St. Helena's agricultural heritage and provide a sense of openness.

CD4.A. Require private development to incorporate public open space into new projects.

LU1.1. Require new development to occur in a logical and orderly manner 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, while minimizing affects on sewer, water and energy resources.

LU1.2. Allow urban development to occur only within the Urban Limit Line. Urban services, such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line.

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

OS1.A. Develop and adopt an ordinance for the protection, restoration and enhancement of creek corridors. The ordinance should consider the following:

- Establish development setbacks to allow for limited recreational uses, access for maintenance and flood control;
- Encourage the proper use of herbicides and insecticides in areas near and adjacent to creeks, and ensure best management practices for all developments and industries;
- Provide access for creek maintenance and public use through easements and cooperative agreements with landowners;
- Establish sufficient buffer width adjacent to waterways to allow for wildlife habitats, trails and greenbelts;
- Adhere to Living River Principles that allow the river to meander, reconnect to its historic floodplain and retain natural channel features to support continuous fish migration and the health of riparian corridors; and
- Encourage the use of bioswales, off-stream detention ponds and other green best practices for stormwater management.

OS1.B. Restrict development on open space-designated parcels along Sulphur Springs Creek west of the Crane Avenue Bridge. All development must be outside the stream corridor and structures must be set back from the creek's edge, consistent with California Department of Fish and Game standards.

OS1.C. Coordinate with the California Department of Fish and Game, the Living Rivers Council and other regional agencies to develop standards and implement a program to restore and maintain creek corridors.

OS1.D. Coordinate with the County, the California Department of Fish and Game and other regional agencies to augment water flow in the Napa River and its tributaries in order to enhance year-round fish habitat and minimize stagnation and pollution.

OS1.H. Require all proposed projects adjacent to a creek corridor or located in the City's hillside areas to submit a management plan for protecting natural habitats, 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.

OS1.I. Require new development to be sited to maximize the protection of native tree species, riparian vegetation, important concentrations of natural plants and sensitive wildlife habitat.

OS1.L. Discourage removal of trees for agricultural or other development in hillside areas.

OS1.N. Conduct a study to determine the most appropriate method for managing and mitigating the build-up of gravel in Sulphur Springs Creek to avoid the risk of flooding. Ensure that implementation measures contribute positively to the preservation of the creek and its corridor.

OS2.6. Support floodplain management strategies that ensure adequate open space for flood management consistent with Living River Principles, FEMA and State requirements.

OS3.1. Promote stormwater management techniques that minimize surface water runoff in public and private developments. Utilize low impact development techniques to best manage stormwater through conservation, on-site filtration and water recycling, and ensure compliance with the National Pollution Discharge Elimination System (NPDES) permit.

OS3.2. Reduce stormwater runoff in developed areas to protect water quality in creeks. Utilize sustainable and "green" infrastructure that facilitates natural drainage.

OS3.A. Continue to implement the stormwater management program to ensure compliance with the City's NPDES permit.

OS3.B. Prevent water pollution from point and non-point sources, including runoff from agriculture.

OS3.C. Minimize stormwater runoff and pollution by encouraging low impact design features, such as pervious parking surfaces, bioswales and filter strips in new development projects. The City should be a model for incorporating low impact design elements as it implements streetscape and landscape improvements. In addition, The City should retrofit the existing public landscape with natural vegetative coverings that can help detain stormwater and reduce pollution attributable to runoff. (Also see the Community Design Element, Topic Area 1)

OS3.D. Create a program for implementing water conservation efforts for households, businesses, industries, public infrastructure and agricultural activities. This program should include the following measures: …

- Encourage the use of drought tolerant and native vegetation in landscaping; …

OS3.E. Promote household and business participation in the City's efforts to increase the installation of drought tolerant and native plants in landscaping throughout the City. Potential measures include: …

- Working with local nurseries to encourage sales of drought tolerant and native plants, and water-wise irrigation systems.

OS4.D. Create a citywide program for residents, businesses, industries and agricultural uses that provides information on pollution prevention, disposal of hazardous waste and chemicals, liability and clean-up.

PF2.A. Require all new units on parcels less than two acres, except those in Woodlands and Watershed Districts, to connect to the City sewer. All existing units within 200 feet of an existing sewer shall connect to the City sewer whenever feasible. Many of the residential units cannot expand without abandoning on-site septic systems and connecting to the sewer which may, in some cases, require an extension of the sewer.

PF2.D. Urban services such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line. Exceptions will be permitted when undue hardship can be demonstrated, and when proposed improvements are not found to induce growth.

PF3.1. Ensure that new developments provide adequate drainage improvements to mitigate stormwater runoff attributable to the development.

PF3.2. Prohibit grading and earth filling within the designated 100-year floodplain, except for public streets, bridges, parks, open space improvements and recreation uses. Prohibit creation of new parcels and building sites in the 100-year floodplain.

PF3.3. Ensure that encroachments into the 100-year floodplain do not result in any increase in flood levels during the occurrence of the base flood discharge.

PF3.4. Improve York Creek channel capacity in flood-prone areas through removal of channel-obstructing gravel bars and vegetation.

PF3.5. Protect structures and property along Sulphur Creek with flood protection measures where appropriate.

PF3.A. Require developers to provide adequate drainage improvements to mitigate storm runoff from the site to the nearest major waterway. Drainage improvements can include measures such as creating settling basins, bio-swales and the use of pervious materials for driveways and parking areas. Key waterways include York Creek, Sulphur Creek and the Napa River.

PF3.B. Require developers to finance and pay for the extension of existing downstream drains to ensure adequate capacity to accommodate new development. The City may provide future reimbursement for oversizing costs at the time of connection by others.

PF3.C. Restrict new development in the 100-year floodplain to reduce the potential for flood risks to life and property. New development proposals in floodplain areas are subject to discretionary review by the City and must identify flood hazard areas and mitigate all impacts to base flood levels and potential flood damage through proper drainage and utilities.

PF3.D. Update the City's Stormwater Master Plan to include changes and upgrades since the last plan and to help streamline the approval process.

PF3.E. At the time of development review, require that post-project runoff be limited to pre-project peak volumes as a condition of approval.

PS5.1. Minimize the risk to people, property and the environment caused by flooding hazards. Ensure that new development is sited to minimize potential damage from a 100-year flood. Continue to require that any new development that is allowed within the floodplain is constructed so that the lowest floor elevation adheres to current FEMA standards. Prohibit the siting of uses within Flood Hazard Areas that could result in health and safety hazards due to the release of chemicals or other substances as a result of inundation or erosion.

PS5.2. Ensure that new development within the 100-year floodplain is properly graded to mitigate flood effects and does not cause increases or expansion of the flood area.

PS5.3. Within the 100-year floodplain, encourage open space uses, such as parks or natural areas.

PS5.4. Ensure that construction of flood barriers does not adversely affect natural floodplains, stream channels and natural barriers that help accommodate or channel flood waters.

PS5.5. Prohibit new development within areas designated as Floodway in the current FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM).

PS5.A. Coordinate with the County Flood Control District to ensure that stream channels are routinely cleared of vegetation and debris which could impede stormwater flows, while protecting riparian habitat.

PS5.B. Require developers with land adjacent to the Napa River to construct or contribute a fair share toward the construction of necessary flood control improvements.

PS5.C. Strengthen and enforce regulations that prohibit the dumping of litter, fill and waste materials into creeks and waterways. Educate the public about flooding and health hazards associated with these activities.

PS5.D. Require that sewer and water lines in areas subject to flooding are sited to avoid contamination and flooding when pipelines break.

PS5.E. Prohibit the introduction of intensive urban development in designated Flood Hazard Areas.

PS5.F. Review Municipal Code Chapter 15.52, Flood Damage Prevention, to ensure that regulations reflect best practices.

PS6.1. Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.

PS6.A. Maintain and periodically update the City's Emergency Response Plan.

PS6.C. Continue to collaborate with regional agencies and neighboring jurisdictions to develop and implement a regional emergency coordination plan and agreement for police, fire and emergency medical services.

Impact Analysis

Less-than-Significant Impacts

Interference with Groundwater Recharge

New development occurring under the proposed General Plan Update (primarily at the Key Housing Opportunity Sites) would add new impervious surfaces that could affect the ability for rain and surface runoff to infiltrate into the groundwater aquifer. Policies CD3.1 and CD4.2 and Implementing Actions CD3.B, CD3.C, and CD4.A would limit building envelope sizes and lot coverage and promote open space and landscaped buffers, which would

reduce the amount of impervious area associated with new development that could adversely affect groundwater recharge. Policy OS3.1 and other policies and implementing actions (discussed under Impact HYDROLOGY-1 below) that would promote open space conservation and low impact development (in accordance with the NPDES stormwater municipal permit) would also help to maintain groundwater recharge. Adverse impacts on groundwater recharge associated with the proposed General Plan Update would therefore be less than significant.

Construction-Phase Water Quality Impacts

Construction of the residential, commercial, industrial, and related Pipeline Projects under the General Plan Update would include various activities that could impair water quality, if not properly controlled. These activities include, but are not limited to, removing vegetation; grading; excavating; dewatering; cutting and filling; constructing buildings, roads, and other paved areas; and installing utilities. Potential pollutants that could be discharged into receiving waters include sediment, pollutants attached to sediment (such as metals or oil and grease), trash, paint, solvents, sanitary waste from portable restrooms, and concrete curing compounds. Stormwater runoff impacts associated with construction activities occurring under the General Plan Update would be reduced to a less-than-significant level through compliance with the Construction General Permit. The Construction General Permit requires development and implementation of a SWPPP that includes minimum BMPs for the following activities: erosion and sediment control; site management/housekeeping/waste management; management of non-stormwater discharges; run-on and runoff controls; and BMP inspection, maintenance, and repair activities. The BMPs must meet the performance standard specified in the permit, and certain discharges are subject to numeric action levels and numeric effluent limits. BMPs must be implemented and maintained by personnel that meet the specific qualifications in the Construction General Permit. The Construction General Permit also has a monitoring and reporting program that requires submittal of the SWPPP, BMP inspections and corrective actions, monitoring data, and staff training records to the State Water Resources Control Board.

General Plan Update projects must also comply with the City’s Stormwater Management Standards for construction site runoff, and would be subject to the City’s dry season grading requirements (unless approved by the Public Works Director), which would significantly reduce the amount of on-site erosion and sediment discharge. In addition, the City’s Public Works Department would conduct inspections of construction sites to evaluate the effectiveness of the site stormwater management practices for preventing erosion and controlling the discharge of pollutants. Through compliance with the Construction General Permit, the City’s Stormwater Management

Standards for construction, and the City's grading requirements, adverse water quality impacts caused by proposed General Plan Update construction activities would be less than significant.

Erosion and Siltation

Erosion and siltation could be caused by the construction and operation of Key Housing Opportunity Sites, Change Areas, and Pipeline Projects occurring under the proposed General Plan Update. As discussed under Construction-Phase Water Quality Impacts, adverse impacts from erosion or siltation during construction would be reduced to a less-than-significant level by complying with the Construction General Permit, the City's Stormwater Management Standards for construction activity, and the City's grading requirements.

For the operational phase of the General Plan Update projects, drainage improvements required under Implementing Action PF3.A would adequately mitigate for erosion and siltation. The additional following policies and implementing actions would also apply: Policies CD1.5, OS3.1, and OS3.2; elements of Implementing Actions OS1.A and OS1.H; and Implementing Actions OS1.B, OS1.I, OS1.L, OS3.A, OS3.B, and OS3.C. Such policies and implementing actions include incorporating low impact development and other stormwater BMPs into development projects, requiring infrastructure that facilitates natural drainage, preserving open space, requiring development setbacks, and maintaining adequate vegetation adjacent to creek corridors, all of which would reduce or prevent substantial erosion or siltation. Therefore, adverse impacts associated with erosion or siltation would be less than significant.

Dam Failure Risks

A very small portion of the potential growth areas identified in the proposed General Plan Update are within dam failure inundation areas. The potential for dams to fail and inundate the city is low, due to oversight from the DOSD. Levees that could cause flooding within the city if a failure occurred are inspected and maintained by the Napa County Flood Control and Water Conservation District. The DOSD has several programs that ensure dam safety. When a new dam is proposed, DOSD engineers and geologists inspect the site and review the subsurface exploration information to understand the geologic conditions. Upon submittal of an application to construct a dam, the DOSD reviews the plans and specifications prepared by the owner to ensure that the dam is designed to meet minimum requirements, and that the design is appropriate for the known geologic conditions. After approval of the application, the DOSD oversees the dam construction to ensure the work is being done in accordance with the approved plans and specifications. Following construction, the DOSD inspects each dam annually to ensure the

dam is safe, performing as intended, and is not developing problems. Roughly a third of these inspections include in-depth instrumentation reviews of the dam surveillance network data. Finally, the DOSD periodically reviews the stability of dams and their major appurtenances in light of improved design approaches and requirements, as well as new findings regarding earthquake hazards and hydrologic estimates in California.

When unsafe conditions develop, the DOSD works with dam owners and their consultants to address and remedy the condition in a timely manner. To minimize risk, the DOSD may impose a reservoir restriction limiting the water surface to a level that is judged safe. The DOSD may request that the owner develop an emergency action plan in coordination with local authorities. General Plan Update Policy PS6.1 and Implementing Actions PS6.A and PS6.C would ensure that adequate emergency response procedures are in place in the case of a dam failure that requires evacuation. Consequently, the flooding impact associated with the failure of a dam or levee would be less than significant.

Seiche and Tsunami

As discussed in under Setting above, the City of St. Helena's elevation above mean sea level and its distance away from coast and San Francisco/San Pablo Bay preclude the potential for inundation by a seiche or tsunami. General Plan Update Policy PS6.1 and Implementing Actions PS6.A and PS6.C would ensure that adequate emergency response procedures are in place in the case of a natural disaster that requires evacuation.

Groundwater Quality Impacts from Septic Systems

Operation of septic systems can adversely impair groundwater quality. Septic systems are a source of nitrate and other dissolved inorganic compounds (such as chlorides), pathogens, and dissolved organic compounds (such as pesticides, pharmaceuticals, and solvents) (SWRCB, 2010).

General Plan Update Implementing Action PF2.A would reduce groundwater impacts from new septic systems to less-than-significant levels by requiring all new developments on less than two acres (except those in Woodlands and Watershed districts) that require sanitary facilities to discharge to the City's sanitary sewer system. Implementing Action PF2.A would also reduce adverse water quality impacts from existing septic systems by requiring some existing parcels with septic systems to discontinue use of the system and to instead discharge to the sanitary sewer system. Water quality impacts from septic systems would therefore be less than significant.

Potentially Significant Impacts

The following impacts could be potentially significant and thus would warrant mitigation measures.

Impact HYDROLOGY-1: Operation of development in accordance with the General Plan Update could violate water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality. (Potentially Significant)

New development or redevelopment that would occur under the General Plan Update would add or replace impervious surfaces, which could increase the volume of stormwater runoff and pollutant loading into local receiving waters. Pollutants associated with the land uses allowed under the General Plan Update include sediment, heavy metals, pathogens, nutrients, pesticides, petroleum hydrocarbons, oil and grease and other organic compounds, and trash and debris. In addition, soil erosion and management of agricultural land uses could introduce pollutants such as sediment (and pollutants associated with sediment), pathogens, nutrients, dissolved solids and pesticides. Of particular concern are pollutants that have adopted TMDLs or are on the 303(d) list for the Napa River and/or the San Pablo Bay, for which urban or agricultural stormwater runoff is a potential pollutant source. Examples of these pollutants include nutrients, pathogens, mercury, and sediment. (Refer to Regulatory Framework above for a summary of all pollutants associated with the 303(d) list/TMDLs.)

General Plan Update Policies LU1.1, CD1.5, OS3.1, and OS3.2 and Implementing Actions OS1.A, OS3.A, and OS3.C would reduce water quality impacts resulting from the operational phase of development by complying with Napa County's NPDES stormwater municipal permit, which requires implementation of stormwater BMPs to reduce pollutants in stormwater runoff to the maximum extent practicable; this includes implementing Low Impact Development practices for new development and redevelopment. However, specific policy language changes are recommended below as mitigation measures to improve specificity.

Policies CD4.2 and OS1.1 and Implementing Actions CD1.B, CD4.A, OS1.B, OS1.H, OS1.L, OS3.D, and OS3.E would promote preservation of open space and existing vegetation and require development setbacks, use of drought-tolerant and native plants, and proper use of pesticides and herbicides. Open space conservation reduces impervious area, which may reduce stormwater pollutants. Use of native plants would improve water quality by reducing pesticide and fertilizer use and reducing irrigation requirements, which would reduce the volume of dry weather nuisance flows

into the stormwater drainage system and/or receiving waters. Dry weather nuisance flows would also be reduced by increasing the use of non-native drought-tolerant plants, which is also promoted by the General Plan policies and implementing actions.

Implementing Action OS1.D would require coordination with various agencies to augment the flow in the Napa River to minimize pollution. Implementing Action OS4.D would provide outreach to residents, businesses, industries, and agricultural uses on water quality pollution prevention. Implementing Action OS3.B would require the City to prevent water pollution from both point sources (such as stormwater runoff from developments) and non-point sources including agricultural runoff.

These General Plan Update policies and implementing actions, along with continued participation in the Napa County Stormwater Management Program, compliance with the City's Stormwater Management Standards (for construction and post-construction) and Development Manual for post-construction stormwater runoff requirements, and compliance with the General Industrial Permit for industrial facilities, would reduce the potential adverse surface water quality impacts. However, policy and implementing action changes are recommended below to ensure that no significant water quality impacts would occur from implementation of the proposed General Plan Update.

Mitigation Measure

Mitigation Measure HYDROLOGY-1: General Plan Update Policies OS1.3 and OS3.2 and Implementing Actions OS3.A, OS1.A, and OS3.B shall be revised as follows (new text underlined and deleted text shown in strike-out):

OS3.A *<u>Manage stormwater runoff in compliance with the City's Stormwater and Runoff Pollution Control Ordinance, Stormwater Management Standards for Construction and Post-Construction, and the Development Manual Stormwater Standards, to ensure compliance with the City's NPDES permit. Implement a surface water quality monitoring program to evaluate the effectiveness of stormwater management program activities in reducing the discharge of pollutants to receiving waters to the maximum extent practicable.</u>*

OS1.3 *Protect and enhance contiguous corridors of riparian vegetation along the Napa River and its tributaries in order to support regional wildlife movement <u>and enhance aquatic habitat</u>.*

OS1.A Develop and adopt an ordinance for the protection, restoration and enhancement of creek corridors. The ordinance should consider the following:

- *Establish ~~development~~ setbacks for all new development projects and replanted agricultural land to protect stream function and riparian habitat, while ~~to~~ allowing for limited recreational uses, and access of the stream corridor for maintenance and flood control;*

- *~~Encourage the proper~~ Restrict use of herbicides and insecticides associated with aquatic toxicity in areas near and adjacent to creeks, and ensure best management practices for all developments and industries;*

- *Implement an Integrated Pest Management ordinance that includes provisions to minimize the reliance on pesticides that threaten water quality and to require the use of integrated pest management in municipal operations.*

- *Incorporate relevant actions and performance standards in TMDL implementation strategies for the Napa River to control discharges of pathogens and sediment.*

OS3.B Prevent water pollution from point and non-point sources, including runoff from agriculture, through implementation of required Best Management Practices in applicable permits, TMDLs, and the Plan for California's Nonpoint Source Pollution Control Program.

OS3.2 Reduce stormwater runoff in developed areas to protect water quality in creeks. ~~Utilize~~ Incorporate sustainable low impact design features in ~~and "green"~~ the design of infrastructure ~~that facilitates natural drainage~~.

In addition, the following new implementing action shall be added to the Open Space and Conservation Element of the General Plan Update:

- Provide appropriate permitting documents for project applicants requiring coverage under the Statewide National Pollutant Discharge Elimination System (NPDES) General Construction and Industrial Permits.

With the inclusion of the above changes, this impact would be reduced to a less-than-significant level. (Less than Significant)

Impact HYDROLOGY-2: Construction and operation of development in accordance with the General Plan Update could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site, or create or contribute runoff water that would exceed the capacity of existing or planned storm sewer systems. (Potentially Significant)

Development allowed under the General Plan Update would add new impervious surfaces that could increase the flow rate and volume of runoff that leaves a site. Policies CD1.5, LU1.1, OS1.1, PF3.1, and PF3.4 and Implementing Actions OS1.A, OS1.B, PF3.A, and PF3.E would require new development to provide adequate drainage improvements and development setbacks and to incorporate stormwater BMPs, which would reduce peak flow rates and stormwater runoff volumes from smaller, more frequently occurring storms. Extending stormwater drainage system utilities to the Urban Limit Line and updating the City's Stormwater Master Plan, as required by Policy LU1.2 and Implementing Actions PF2.D and PF3.D, would ensure that the storm drain system has adequate capacity to convey storm flows without flooding, accounting for existing and future land uses and development. Maintaining creek corridors and adhering to Living River Principles as required by Implementing Actions OS1.A, OS1.C, and OS1.N would help to maintain the natural hydrologic function of creeks, which would reduce the potential for flood flows to inundate developed or agricultural areas.

In addition, new inputs to the stormwater drainage system must comply with Title 16 of the Municipal Code, which requires a new stormwater drainage system to be designed by a registered civil engineer for ultimate development of the watershed, to convey runoff generated by the ten-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. In addition, under Title 16, retention ponds, drainage swales, and/or check dams may be required to reduce the off-site peak storm flow that projects contribute to the historic flow.

Mitigation Measure HYDROLOGY-2 is recommended to reduce the impact to a less-than-significant level and to provide a greater degree of specificity.

Mitigation Measure

Mitigation Measure HYDROLOGY-2: General Plan Update Implementing Actions PF3.E and OS1.C shall be revised as follows (new text underlined and deleted text shown in strike-out):

PF3.E At the time of development review, require that post-project runoff be limited to pre-project peak flow rates ~~volumes~~ for the five-year and ten-year storms as a condition of approval.

OS1.C Coordinate with the California Department of Fish and Game, the Living Rivers Council, the Regional Water Quality Control Board and other federal, state and local ~~regional~~ agencies with regulatory authority for water quality, protected plant and animal species, and streams and wetlands, to develop standards and implement a program to restore and maintain creek corridors.

With the inclusion of the above changes, this impact would be reduced to a less-than-significant level. (Less than Significant)

Impact HYDROLOGY-3: Development in accordance with the General Plan Update could place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place structures within a 100-year flood hazard area that would impede or redirect flood flows. (Potentially Significant)

Development allowed under the General Plan Update could occur within a Special Flood Hazard Area, which could exacerbate existing flooding problems, create additional flood risks due to expansion of the 100-year floodplain, and expose additional people to flood hazards. Portions of Change Areas 2, 4, and 5, as well as the Key Housing Opportunity Site closest to the Napa River along Adams Street (see Figure 3-4 in Chapter 3, Project Description) are located within the 100-year floodplain. Regulatory requirements for flood damage prevention are contained in Chapter 15.52 of the St. Helena Municipal Code, and General Plan Update Implementing Action PS5.F would require review of the Municipal Code to ensure that regulations are consistent with FEMA requirements and reflect best practices.

General Plan Update Policies PF3.2, PF3.3, PS5.2, PS5.4, PS5.5, and OS2.6 and Implementing Actions PS5.A and PS5.C would mitigate against actions that could impede or redirect flood flows by ensuring that base flood elevations do not increase and that development activities do not expand the floodplain. Policies PF3.5, PS5.1, and PS5.3 and Implementing Actions PF3.C and PS5.E would limit the placement of new housing within a Special Flood Hazard Area and ensure that any new development complies with FEMA standards.

Policy PS5.1 and Implementing Action PS5.D would prevent injury to people and adverse impacts on surface waters by prohibiting siting of land uses in Special Flood Hazard Areas that could release chemicals or other

substances, and by requiring water and sewer lines to be sited to avoid contamination and flooding if pipelines break.

Policies PS5.3 and OS2.6 would support flood management by encouraging open space uses within Special Flood Hazard Areas consistent with Living River Principles. The flood management objectives of Living River Principles include maintaining or restoring geomorphic equilibrium, maintaining natural slopes and channel widths, maintaining the connection of the river or creek to its floodplain, and providing adequate development setbacks to allow the river or creek to meander.

Policy PF3.5 and Implementing Action PS5.B would provide for flood protection measures for lands adjacent to Sulphur Creek and the Napa River.

The impacts associated with placing housing or structures within a Special Flood Hazard Area would nonetheless be significant unless Mitigation Measure HYDROLOGY-3 is implemented. The mitigation measure recommends specific language changes for policies and implementing actions to provide specificity and eliminate conflicts among policies.

Mitigation Measure

Mitigation Measure HYDROLOGY-3: General Plan Update Policies PF3.1, PF3.2, PS5.1, PS5.2, PS5.3 and Implementing Actions PF3.A, PF3.C, PF3.E, and PS5.F shall be revised as follows (new text underlined and deleted text shown in strike-out):

PF3.1 Ensure that new developments provide adequate drainage improvements and detention to mitigate flooding from increased stormwater runoff attributable to the development.

~~*PF3.2 Prohibit grading and earth filling within the designated 100-year floodplain, except for public streets, bridges, parks, open space improvements and recreation uses. Prohibit creation of new parcels and building sites in the 100-year floodplain.*~~

PF3.A Require developers to provide adequate drainage improvements and detention to mitigate storm runoff from the site to the nearest major waterway. Drainage improvements can include measures such as creating settling basins, bio-swales and the use of pervious materials for driveways and parking areas. Key waterways include York Creek, Sulphur Creek and the Napa River.

PF3.C Prohibit creation of new lots ~~Restrict new development~~ in the 100-year floodplain to reduce the potential for flood risks to life and property. New development proposals in the 100-year floodplain ~~areas~~ on existing lots of record are subject to

discretionary review by the City and 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.

PF3.E At the time of development review, require that post-project runoff be limited to pre-project peak flow rates ~~volumes~~ for the five-year and ten-year storms as a condition of approval.

PS5.1 Minimize the risk to people, property and the environment caused by flooding hazards. Ensure that new development is sited to minimize potential damage from a 100-year flood. Continue to require that any new development that is allowed within the floodplain (on existing lots of record only) is constructed ~~so that the lowest floor elevation~~ to adhere~~s~~ to current FEMA standards and Municipal Code Chapter 15.52, Flood Damage Prevention. Prohibit the siting of uses within Flood Hazard Areas that could result in health and safety hazards due to the release of chemicals or other substances as a result of inundation or erosion.

PS5.2 Ensure that new development on existing lots of record within the 100-year floodplain is properly graded, sited, and constructed to mitigate flood effects and does not cause increases or expansion of the flood area.

PS5.F Review Municipal Code Chapter 15.52, Flood Damage Prevention, to ensure that regulations reflect best practices. Periodically update the City's flood hazard regulations in accordance with FEMA/NFIP regulations.

In addition, the following new implementing actions shall be included in the Public Facilities and Services Element of the General Plan Update:

- Implement the requirements of FEMA relating to construction in Special Flood Hazards Areas as illustrated on Flood Insurance Rate Maps.

- Implement low impact development practices for new development and redevelopment projects to reduce stormwater peak flow rates and volumes from smaller, more frequently occurring storm events.

With the inclusion of the above changes, this impact would be reduced to a less-than-significant level. (Less than Significant)

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4.N Mineral Resources

Introduction

View of Sulphur Creek

This section addresses the presence of known mineral resources within the city limits of St. Helena and the likely impact on such resources from the projected growth associated with the proposed General Plan.

Setting

No aggregate mineral resources or other significant mineral resources have been mapped within the City of St. Helena (http://www.consrv.ca.gov/cgs/information/publications/ms/Documents/MS_52_map.pdf, April 20, 2010). No Mineral Resource Zone maps exist for the bulk of Napa County, including the City of St. Helena (Napa County, 2008).

There is one known site for gravel mining in St. Helena, the Sulphur Creek historic gravel mining reach. This mining site has ceased operation, and a reclamation plan is in place.

Regulatory Framework

The California Surface Mining and Reclamation Act of 1975 (SMARA) identified mineral resources within California regions. These maps identify and classify mineral resources as to their relative value for extraction, and the California Environmental Quality Act (CEQA) requires that potential impacts to known mineral resources that would be of value to the region or the residents of the State be assessed. The potential loss of locally-important mineral resource recovery sites identified in a local general plan or other applicable plan is also to be identified as part of the CEQA process.

Impacts and Mitigation Measures

Significance Criteria

Significant impacts to mineral resources would occur if implementation of the St. Helena General Plan Update:

- Results in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or
- Results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

Relevant Policies

The following relevant policy of the General Plan Update addresses mineral resources:

> *OS2.2*. Preserve open space for mineral resources. Ensure compliance with State requirements in the preservation of known locations of mineral resources.

Impact Analysis

Less-than-Significant Impacts

The "Likely Buildout" scenario and the "Full Buildout" scenario of the General Plan could result in impacts to mineral resources that are not yet mapped within the City. No known mineral resources have been mapped within the City of St. Helena. However, over the course of the 20-year planning horizon, the State of California may update its SMARA maps and may identify such resources. Compliance with Policy OS2.2 of the General Plan would ensure that the project would not result in the loss of known, important mineral resources assuming that such resources are mapped on open space lands that can be protected from development. No mitigation measures would be necessary.

Potentially Significant Impacts

No potentially-significant impacts related to mineral resources would occur.

References – Mineral Resources

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4.O Population and Housing

Introduction

This section of the EIR describes existing and projected population, housing, and employment in St. Helena and potential effects of the General Plan Update related to changes in population.

Setting

Population

Napa County

In 2010, Napa County had a population of approximately 138,800 (ABAG, 2009). As shown in Table 4.O-1, Napa County's population was the smallest among the nine Bay Area counties in 2010. By 2035, ABAG estimates that Napa County will have a population of approximately 148,800, an increase of approximately 10,000 from 2010.

The City of St. Helena had an estimated 2010 population of 6,100, making it the third largest city in Napa County.

City of St. Helena

As shown in Table 4.O-2, the City of St. Helena had an estimated 2010 population of 6,100, making it the third largest city in Napa County. This estimate represents an approximately three-percent (150-person) increase from 2000, when the city's population was 5,950 (ABAG, 2009).
St. Helena's three-percent population growth rate was much slower than the approximately 12-percent growth rate of Napa County as a whole during the 2000-2010 period.

TABLE 4.O-1
EXISTING AND PROJECTED BAY AREA POPULATION BY COUNTY, 2010-2035

	Population						
County	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**% Change 2010-2035**
Alameda	1,549,800	1,626,100	1,705,900	1,787,300	1,874,600	1,966,600	+27%
Contra Costa	1,090,300	1,130,700	1,177,400	1,225,500	1,273,700	1,322,900	+21%
Marin	256,500	260,300	264,000	267,300	270,900	274,300	+7%
Napa	**138,800**	**142,300**	**144,600**	**146,300**	**147,500**	**148,800**	**+7%**
San Francisco	810,000	837,500	867,100	900,500	934,800	969,000	+20%
San Mateo	733,300	766,900	801,300	832,400	862,800	893,000	+22%
Santa Clara	1,822,000	1,945,300	2,063,100	2,185,800	2,310,800	2,431,400	+34%
Solano	443,100	458,500	472,100	484,600	495,800	506,500	+14%
Sonoma	497,900	509,900	522,500	535,200	548,400	561,500	+13%
Bay Area	7,341,700	7,677,500	8,018,000	8,364,900	8,719,300	9,073,700	+24%

SOURCES: ABAG, 2009; ESA, 2010

TABLE 4.O-2
EXISTING AND PROJECTED POPULATION, ST. HELENA AND NAPA COUNTY, 2010-2035

Jurisdictional Boundary	Population						% Change 2010-2035
	2010	2015	2020	2025	2030	2035	
St. Helena	**6,100**	**6,100**	**6,200**	**6,200**	**6,200**	**6,300**	**+3%**
Napa	77,800	80,300	81,800	82,800	83,700	84,600	+9%
American Canyon	17,400	17,700	18,000	18,400	18,600	18,800	+8%
Calistoga	5,300	5,400	5,400	5,400	5,400	5,400	+2%
Yountville	3,400	3,500	3,600	3,600	3,600	3,600	+6%
Unincorporated	28,800	29,300	29,600	29,900	30,000	30,100	+5%
Napa County Total	**138,800**	**142,300**	**144,600**	**146,300**	**147,500**	**148,800**	**+7%**

SOURCES: ABAG, 2009; ESA, 2010

According to ABAG projections, summarized below in Table 4.O-2, St. Helena's population is anticipated to be approximately 6,300 (an increase of approximately three percent) by 2035. St. Helena's status as the third largest city in Napa County is expected to continue through 2035. ABAG projects a higher growth rate of about seven percent for Napa County as a whole during the same 2010-2035 time period (2005-2035) (ABAG, 2009).

Housing

Napa County

Between 2000 and 2010, the number of housing units increased throughout the Bay Area by approximately eight percent. During this period, Napa County experienced an approximate 12-percent growth in the housing stock, adding about 5,794 units (California Department of Finance, 2010). In percentage terms, this increase ranked third among Bay Area counties. Table 4.O-3 compares the number of housing units in 2000 and 2010 in each of the nine Bay Area counties.

City of St. Helena

The City of St. Helena contained approximately 2,751 housing units in 2010, with single-family housing accounting for 70 percent, multi-family housing accounting for 25 percent, and mobile homes accounting for 5 percent of the total.

The City of St. Helena contained approximately 2,751 housing units in 2010 (California Department of Finance, 2010), with single-family housing accounting for 70 percent, multi-family housing accounting for 25 percent, and mobile homes accounting for 5 percent of the total. Compared to Napa County as a whole, the city has a slightly lower proportion of single-family housing and a slightly higher proportion of multi-family housing. Table 4.O-4 presents the range of housing types currently provided in St. Helena and in Napa County as a whole.

TABLE 4.O-3
NUMBER OF HOUSING UNITS BY COUNTY FOR THE BAY AREA, 2000-2010

County	Number of Housing Units 2000	Number of Housing Units 2010	% Change 2000–2010
Alameda	540,183	575,465	+7%
Contra Costa	354,577	400,268	+13%
Marin	104,990	108,850	+4%
Napa	**48,554**	**54,348**	**+12%**
San Francisco	346,527	368,136	+6%
San Mateo	260,578	269,491	+3%
Santa Clara	579,329	629,508	+9%
Solano	134,513	153,280	+14%
Sonoma	183,153	200,332	+9%
Bay Area Total	**2,552,404**	**2,759,678**	**+8%**

SOURCES: California Department of Finance, 2010; ESA, 2010

TABLE 4.O-4
EXISTING HOUSING TYPES, ST. HELENA AND NAPA COUNTY, 2010

	Number of Housing Units	Distribution Percentage	
Housing Type	**City of St. Helena**	**City of St. Helena**	**Napa County**
Single-Family			
Detached	1,697	62%	67%
Attached	215	8%	7%
Multi-Family			
2-4 Units in Structure	216	8%	7%
5 Units or More in Structure	478	17%	12%
Mobile Homes	145	5%	7%
Total	2,751	100%	100%

SOURCE: California Department of Finance, 2010

The average household size in St. Helena is approximately 2.43 people (Bay Area Economics, 2010), which is slightly lower than Napa County's average of approximately 2.62 people (California Department of Finance, 2010). ABAG projects that the average household size in St. Helena will decrease to approximately 2.45 people by 2035. The average household size in the county as a whole is expected to remain at approximately 2.62 people (ABAG, 2009).

Employment

Napa County

As shown in Table 4.O-5, the total number of jobs in Napa County was about 70,770 in 2010. By 2035, the county is projected to have approximately 91,480 jobs, representing an increase of about 29 percent between 2010 and 2035 (ABAG, 2009).

TABLE 4.O-5
EXISTING AND PROJECTED EMPLOYMENT, ST. HELENA AND NAPA COUNTY, 2010–2035

Jurisdictional Boundary	Number of Jobs						
	2010	2015	2020	2025	2030	2035	% Change 2010 -2035
St. Helena	**5,810**	**5,830**	**5,910**	**6,000**	**6,090**	**6,170**	**+6%**
Napa	34,590	35,650	36,650	37,740	40,870	43,980	+27%
American Canyon	2,250	3,320	4,580	5,830	6,820	7,810	+247%
Calistoga	2,770	2,790	2,900	3,020	3,160	3,300	+19%
Yountville	2,120	2,200	2,300	2,430	2,560	2,690	+27%
Unincorporated	23,230	24,390	25,580	26,850	27,270	27,530	+19%
Napa County Total	**70,770**	**74,180**	**77,920**	**81,870**	**86,770**	**91,480**	**+29%**

SOURCES: ABAG, 2009; ESA, 2010

By 2035, the number of jobs in St. Helena is expected to increase by approximately 6 percent to a total of about 6,170 jobs.

City of St. Helena

As shown in Table 4.O-5, there were approximately 5,810 jobs in St. Helena in 2010. By 2035, the number of jobs in St. Helena is expected to increase by approximately 6 percent to a total of about 6,170 jobs (ABAG, 2009).

Regulatory Framework

State Assembly Bill 2853 (Regional Housing Needs Allocation)

Assembly Bill 2853 (AB 2853), enacted in 1980, requires all cities to address their regional “fair share allocation” of housing needs by income group in their General Plan Housing Elements. The City of St. Helena must therefore evaluate “regional fair share” as projected by ABAG, which is the council of governments for the nine-county San Francisco Bay region. ABAG’s determination of the local share of regional housing takes into consideration factors such as: market demand for housing; employment opportunities; availability of suitable sites and public facilities based on local plans; commuting patterns as they relate to the differences between job creation and labor supply; type and tenure of housing; and housing needs of farmworkers.

ABAG allocates housing needs for each city and county in the region according to four specified income levels, so that each jurisdiction can make plans to provide for its "fair share" of regional housing needs by income group. To describe these housing needs, ABAG uses the income categories of *very low* for household incomes of up to 50 percent of the median income for the region (i.e., the county), *low* for 51 to 80 percent of the regional median income, *moderate* for 81 to 120 percent of the regional median income, and *above moderate* for household incomes greater than 120 percent of the regional median income.

ABAG's most recent projected housing needs are for the period 2007 to 2014. ABAG has determined that a total of 121 housing units would be needed in St. Helena during this seven-year period, consisting of 30 units affordable to *very low-income* households, 21 units affordable to *low-income* households, 25 units affordable to *moderate-income* households, and 45 units affordable to *above moderate-income* households (ABAG, 2008). These "fair-share" totals represent the ABAG-projected number of units that would need to be added to St. Helena's housing stock over the period 2007 to 2014 in order to achieve an equitable distribution of housing opportunities.

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions related to population and housing.

The proposed project analyzed in this EIR is the St. Helena General Plan Update (General Plan), which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

St. Helena Residential Growth Management System

The St. Helena Residential Growth Management System (Municipal Code Section 17.152) limits the residential growth rate in the city to approximately two percent per year, while providing for development of both market-rate and affordable housing units.

The St. Helena Residential Growth Management System (Municipal Code Section 17.152) limits the residential growth rate in the city to approximately two percent per year, while providing for development of both market-rate and affordable housing units. Under this system, no more than nine building permits for market-rate housing may be issued each year. Permits remaining unused at the end of the year are carried over into the subsequent year but are only available for allocation for the construction of market-rate units in development projects that include a minimum of 40 percent affordable units.

The number of affordable housing units constructed is determined by the city council through the discretionary review process. The affordability agreements contain guarantees that the dwelling units would continue to be affordable to people of very low, low, or moderate income for an agreed-upon period of time (City of St. Helena, 2010).

Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant population or housing impact if it would:

- Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or
- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

Relevant Policies

The following policies and implementing actions of the General Plan Update are relevant to population and housing impacts as defined by the significance criteria above (i.e., growth inducement and displacement of existing housing or residents):

> *LU1.5*. Limit the approval of new market rate residential development to a maximum rate of nine dwelling units per year. Regulated affordable units, guest cottages, accessory units or second units are exempt from this limitation.
>
> *LU1.6*. Restrict residential development to 2,840 total dwelling units citywide by the year 2015. The total dwelling units do not represent a goal, but rather represent the maximum allowable number that should not be exceeded when meeting the goals of the 2009-2014 Housing Element. The total does not include regulated affordable units, guest cottages, accessory dwelling units or second units. Further revision may include projections to 2030 at the time of the next Housing Element Update.
>
> *LU1.A*. Allow the construction of second units – also known as “granny flats” or accessory dwelling units – and the division of single family homes into two or more units, in order to increase residential density and housing availability without requiring an extension of the Urban Limit Line. Particular emphasis should be placed on those neighborhoods located within walking and bicycling distance to recreation and commercial areas.

LU1.C. Adjust the Residential Growth Management System that regulates the issuance of building permits to ensure the dwelling unit count does not exceed 2,840 units in 2015, not including regulated affordable units, guest cottages, accessory dwelling units or second units. This number shall not be construed as a goal, but as a maximum number of units. When 2010 United States Census data is available, reevaluate the total number of units allowed within the Growth Management System. (Also see the Housing Element, Topic Area 1)

LU1.D. Continue to update the City's housing inventory to track the status of residential growth by unit type and affordability level.

LU1.E. Review the City's housing needs every five years in conjunction with updates to the Housing Element to reassess housing priorities for the future years.

LU1.F. Prohibit the use of housing units as short-term rentals in order to preserve housing for full-time residents.

LU3.C. Establish an inventory of all non-residential uses in the City and a program for monitoring future non-residential development. Combine this inventory with efforts to balance jobs and housing.

ES1.4. Encourage the creation of workforce housing to reduce the negative impacts of the City's jobs-housing imbalance and support the local employment base. (Also see the Housing Element, Topic Area 1)

CC1.2. Promote land use decisions that support the County's goals to maintain and improve the County's overall balance of jobs and housing, by locating jobs and housing in proximity to each other and improving the match between wages and housing cost. [Draft Napa Countywide Community Climate Action Plan Framework, Action T2]

HE1.1. Ensure that the General Plan's Growth Management Policies do not limit our ability to meet regional housing needs.

HE1.2. Focus on key opportunity sites and work with property owners and developers to facilitate development of new affordable housing.

HE1.4. Address workforce housing needs by supporting an improved jobs/housing "match." (Also see the Economic Sustainability Element, Topic Area: 1)

HE1.A. Continue to exempt permits for regulated affordable units as well as second units from the Growth Management System. The objective is to accommodate production to meet the Regional Housing Needs Allocation (RHNA) of 121 housing units (30 units for very low-income households, 21 for low-income households, 25 for moderate-income households, and 45 for above moderate income households). Developers shall be encouraged to propose projects that meet this need.

HE1.B. Review and possibly amend the Growth Management System to encourage the production of regulated affordable and workforce housing

units. Review the Growth Management System (GMS) to make sure that it is not disproportionately affecting the development of affordable housing. Exemptions for restricted "workforce" housing units should be explored, in addition to current exemptions for affordable housing units. Continue to allow a maximum of 9 market rate units per year and priority allocation of annual building permit allocations and carryover permits to market rate units in development projects that include a minimum of 40 percent affordable units.

HE1.C. Amend the Residential Growth Management System Section 17.152.030 to read:

> "The 2000 Census found that the City had 2,708 total dwelling units. With a limitation of 9 building permits for market rate housing per year, issued over 15 years, the number of dwelling units will be approximately 2,840 by the year 2015, not including regulated affordable units, guest cottages, accessory dwelling units or second units. This number shall not be construed as a goal, but as a maximum number of units." (Also see the Land Use and Growth Management Element, Topic Area: 1)

HE1.E. Revise the permitting process to streamline the review of affordable housing and market rate multifamily projects.

HE2.1. Encourage higher density development where appropriate.

HE2.2. Ensure that higher density housing opportunity sites are not lost to lower density uses.

HE2.3. Be more aggressive in promoting mixed-use developments.

HE2.4. Promote second unit production more aggressively.

HE2.5. Allow conversion of single-family homes to multi-unit dwellings.

HE2.A. Provide incentives for higher density housing. Explore possible incentives for building attached market rate housing units for rent and for sale. Incentives to be explored include, but are not restricted to, fast tracking development applications, deferred development fees, reduced parking and/or other City standards, and density bonuses.

HE2.B. Study potential modifications to the Zoning Ordinance to facilitate higher density housing [and discourage construction of oversize homes]. Modify the Zoning Ordinance to encourage higher density developments [and restrict construction of large single-family units], including current floor area ratios and yard and setback requirements.

HE2.C. Amend regulations to discourage exemptions from the minimum density requirements. The City shall discourage exemptions for minimum density requirements and establish mitigation measures for exemptions in the Zoning Ordinance.

HE2.D. Modify section 17.100 of the Zoning Ordinance to rename the Mobilehome Park Overlay District to "Manufactured Housing Overlay District." Develop policies to streamline the review process for this overlay district on residential land for projects that create land-ownership opportunities for residents. Support giving residents the right of first refusal if an existing park is to be sold.

HE2.E. Amend the "Subdivisions" section of the Municipal Code. The City will amend Title 16 of the Municipal Code to prevent subdivision activity from effectively resulting in lower densities and a loss of potential housing units on the site.

HE2.H. Explore the possibility of allowing mixed use and live/work units in nonresidential zoning districts.

- Explore modifications to non-residential Zones that would permit, either as of right or as a conditional use, residential uses including integrated live/work units.
- Analyze requirements that commercial projects provide housing for a portion of the employment that will be generated on site. The City will study and determine what portion of employment generated will require housing, whether housing will be required on-site or allowed off-site, if pricing for the non-inclusionary units will be tied to anticipated salaries for employees in the commercial portion of the project, and if in-lieu fees will be permitted for smaller sized projects.
- Explore development incentives such as higher density and height allowances and a streamlined design review process.

HE2.I. Review and revise development standards pertaining to second units. Ensure that the development of second units is physically and financially feasible in targeted areas. Give particular attention to parking standards, setbacks, and impact fees.

HE2.J. Provide financial incentives for second unit development. Incentives might include low interest loans or fee waivers.

HE2.K. Target specific areas for second unit incentives. Create incentives to construct second units in the medium density areas near downtown. Incentives to be explored include, but are not restricted to, fast tracking development applications, deferred development fees, and reduced parking and/or other City standards.

HE2.O. Identify appropriate "target" areas for conversion of single-family homes to multi-unit dwellings. Identify areas, zoning districts or specific sites where conversion would be appropriate or desirable.

HE2.P. Develop criteria and standards and provide public information regarding conversions of single-family homes to multi-unit dwellings. Identify criteria for reviewing potential conversion opportunities and standards, including parking requirements, to ensure that conversions are carried out in a manner consistent with the character and use of adjacent

properties. Develop a guide for property owners explaining the conversion program and procedures.

HE2.Q. Develop a program to encourage affordable housing in clusters of 4-6 units on Infill parcels on west side of town. The City will post an inventory of potential sites on the City's web site. In addition the City will explore incentives to encourage affordable housing clusters, including, but not limited to priority permit processing, reduced or waived development fees, reduced parking and/or other City standards, and an additional density bonus.

HE3.1. Protect the existing stock of affordable and market rate housing.

HE3.2. Monitor housing conditions.

HE3.A. Restrict the conversion of rental units to condominiums. Current policy allows conversion to condominiums under certain circumstances when the vacancy rate is high. The presence of second homes within the community results in an inflated vacancy rate. The policy should be further studied and revised to reflect a general guiding principal of preserving the affordable housing stock while eliminating the current linkage to vacancy rates.

HE3.B. Charge an affordable housing impact fee whenever housing units are converted to other uses. Exempt conversion projects that create affordable for sale housing from this impact fee.

HE3.C. Address the potential loss of assisted units. Identify assisted properties at risk of conversion to market rates and work with the property owners and/or other parties to ensure that they are conserved as affordable housing. Monitor the Woodbridge Apartments and establish a funding plan in anticipation of either preserving or replacing the 50 units of affordable housing in 2018 when the Section 8 contract for Woodbridge expires.

HE3.D. Continue to prohibit the conversion of market rate housing to vacation rentals. Abate the use of illegal vacation rentals, including time shares and fractional interests.

Impact Analysis

Less-than-Significant Impacts

Inducement of Population Growth

The Likely Buildout Scenario could induce population growth in the area. As discussed in Chapter 3, Project Description, the Likely Buildout Scenario would allow for residential development that would add an estimated 921 residents and 379 new housing units in the city by 2030. The 921-person population increase would exceed the ABAG-projected population increase of 100 people for the 20-year time period between 2010 and 2030 (see Table 4.O-2). The ABAG projection is based on past trends and economic/

market constraints; St. Helena experienced relatively little residential growth in the past decade, and therefore the projection is low (Poole, 2010). Policies and implementing actions included in the General Plan Update would limit the rate of residential development in the short term (Policies LU1.5 and LU1.6, Implementing Action LU1.C), provide for development of affordable housing (Implementing Actions LU1.D and LU1.E, Policies HE1.1 and HE1.2), and seek to achieve a balance of jobs and housing (Implementing Action LU3.C, Policy ES1.4, Policy CC1.2, Policy HE1.4, and Implementing Actions HE1.A, HE1.B, HE1.C, HE1.E, and HE2.Q), thus helping to reduce the environmental impacts of population growth.

Population growth, in and of itself, is not considered a significant environmental impact. Instead, population growth constitutes an adverse environmental impact only to the extent that it would result in other physical environmental impacts (e.g., traffic, air quality, noise, etc). These potential environmental impacts of the General Plan Update are analyzed throughout Chapter 4 of this EIR.

Displacement of Existing Housing and Residents

Development under the Likely Buildout Scenario could result in the displacement of existing residents or housing units. However, the General Plan Update contains provisions that would mitigate these potential impacts, including policies and implementing actions that would encourage development of second units (Implementing Action LU1.A, Policy HE2.4, and Implementing Actions HE2.I, HE2.J, and HE2.K), mixed-use development (Policy HE2.3 and Implementing Action HE2.H), development at higher densities (Policies HE2.1, HE.2.2, and HE2.5, and Implementing Actions HE2.A, HE2.B, HE2.C, HE2.E, HE2.O, and HE2.P), and protection of the existing housing stock, including affordable housing and mobile homes (Implementing Action HE2.D, Policy HE3.1, Policy HE3.2, and Implementing Actions HE.3.A, HE3.B, HE3.C, and HE3.D). With implementation of these provisions, no *net* population or housing displacement would be expected, and any potential displacement of existing residents and housing units would be reduced to a less-than-significant level.

Potentially Significant Impacts

The General Plan Update would not result in any potentially significant impacts related to population and housing.

References – Population and Housing

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California Department of Finance. 2010. *E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2010, with 2000 Benchmark*. May. Available at http://www.dof.ca.gov/research/demographic/reports/estimates/e-5/2001-10/.

City of St. Helena. 2010. Municipal Code, Section 17.152, "Residential Growth Management System."

Poole, Carol, City of St. Helena. 2010. E-mail communication. June 24.

4.P Public Services

Introduction

This section of the EIR describes existing fire protection, police, school, and library facilities and services within the City of St. Helena and the potential impacts on these facilities and services that may result from development allowed by the proposed General Plan Update.

Setting

Fire Protection

The St. Helena Fire Department provides fire suppression, prevention, education, emergency medical and rescue services, and response to hazardous materials incidents.

The City of St. Helena 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.

Staffing

The Fire Department is based at 1480 Main Street in St. Helena. The Fire Department is authorized to maintain a roster of a maximum of 30 paid-call volunteer firefighters. Currently the staff consists 25 paid call firefighters; however, there are 2 qualified applicants in the process of joining the department and 3 additional recruits in the process of completing the requirements for application to the department. The department has a part-time administrative assistant (32 hours weekly) and a part-time paid Fire Chief. Currently the Fire Department is adequately staffed to accomplish its missions and goals (Sorenson, 2010).

The firefighters are trained to provide emergency medical services at various levels. Presently, half of the firefighters are trained to the First Responder level the other half are certified as EMT-1s. One firefighter is trained to the EMT-P (Paramedic) level. The Fire Department responds concurrently with the ambulance dispatch and generally arrives on scene concurrently with the ambulance company (Sorenson, 2010).

Equipment

Equipment includes two Type 1 engine trucks, one Type 1 85-foot aerial ladder truck, one Type 1 water-tender truck, one Type 3 engine, and one Type 2 rescue vehicle (City of St. Helena, 2007). The Type 3 engine is past its life expectancy of 15 years but remains serviceable. The Fire Department also has a command vehicle, a utility vehicle, and a battalion coverage vehicle (Sorenson, 2010).

Service Calls and Response Times

The Fire Department has a response time of 5.5 minutes.

The Fire Department has a response time of 5.5 minutes and responds to each call with a minimum of 14 firefighters. The department has set a goal for a maximum response time of 8 minutes within the St. Helena city limits (City of St. Helena, 2007; Sorenson, 2010).

In 2009, the Fire Department received a total of 710 calls. Of these calls, 60 percent were for emergency medical services, 6 percent were for fire services, and the remaining 34 percent were other types of calls (e.g., false alarms, hazardous conditions, and other types of service calls) (Sorenson, 2010).

The St. Helena Fire Department is part of the Napa County mutual aid automatic aid agreement. Depending on the needs of the incident, all departments in the county will respond as requested or required. Napa County Station 26 (St. Helena) and Napa County Station 12 (Yountville) provide automatic aid on all commercial or Highway 29/Silverado Trail incidents (Sorenson, 2010).

Emergency Access Issues

Traffic congestion on Highway 29 and other city streets can interfere with Fire Department response to fires.

Traffic congestion on Highway 29 and other city streets can interfere with Fire Department response to fires. Traffic congestion can also pose challenges for the City's collaboration with neighboring municipalities and agencies seeking to establish and implement regionally coordinated disaster planning for fire, emergency medical, and police services (City of St. Helena, 2010b).

Wildland Fire Issues

The heavily wooded and frequently dry hillside areas of the city pose special firefighting challenges due to limited access, narrow roads, steep terrain, and flammable vegetation.

The St. Helena Fire Department coordinates its wildland firefighting efforts with the Napa County Fire Department and the California Department of Forestry and Fire Protection (CAL FIRE), as necessary. Most wildland fire suppression efforts are dispatched as automatic aid mutual aid dispatches (Sorenson, 2010).

Emergency Water

Fire hydrant placement is dictated by National Fire Protection Association (NFPA) standards, which the St. Helena Fire Department enforces in all new construction. Many residential areas of the city have low emergency water flows ("fire flows") or water pressure. Fire flows in these areas, while below

standard, would be adequate for a single residential fire. However, they would be insufficient for multiple residential fires (i.e., a major conflagration) (Sorenson, 2010).

Hazardous Materials Remediation

The St. Helena Fire Department is the first responder to hazardous materials incidents in the city. The Fire Department's procedure is to call in the Napa County Hazardous Response Team, as Napa County maintains the equipment, supplies, and trained personnel to mitigate hazardous spills (Sorenson, 2010). Hazardous materials issues are discussed in more detail in Section 4.L, Hazards and Hazardous Materials, of this EIR.

Development Review Procedures

The St. Helena Fire Department routinely reviews development applications to address requirements for fire sprinklers, emergency access, and other fire-related concerns (Sorenson, 2010).

Police

The St. Helena Police Department maintains 24-hour security patrol throughout the community.

The St. Helena Police Department provides police services within the city limits. The Police Department maintains 24-hour security patrol throughout the community (City of St. Helena, 2007).

Staffing

The Police Department is based at 1480 Main Street in St. Helena. The Police Department consists of 18 full-time employees (including the Chief of Police and sworn officers) and one part-time employee. The Police Department maintains a staffing ratio of approximately two police officers for every 1,000 residents and is not understaffed (Castillo, 2010).

Equipment

The Police Department maintains five patrol cars, a motorcycle unit, bike patrol, and a canine unit (City of St. Helena, 2007).

Service Calls and Response Times

In 2008, the Police Department had an average response time of 2 minutes, 45 seconds.

In 2008, the Police Department had an average response time of 2 minutes, 45 seconds. The Police Department's goal is to maintain an average response time of three minutes or less. In 2009, the Police Department handled 4,234 calls for service (Castillo, 2010).

Emergency Access Issues

In addition to the emergency access issues described under "Fire Protection" above, the Police Department has noted that the 2300 block to the 2600 block of Vallejo Street is a dirt road that can pose problems for emergency vehicle access during inclement weather (Castillo, 2010).

Schools

The St. Helena Unified School District maintains a primary school, elementary school, middle school, high school, and alternative high school.

The St. Helena Unified School District provides public school service in St. Helena. Students from two nearby elementary districts also attend the district's schools.

The district maintains five schools: a primary school, an elementary school, a middle school, a high school, and an alternative high school (see Figure 4.P-1 and Table 4P-1).

TABLE 4.P-1
EXISTING ST. HELENA UNIFIED SCHOOL DISTRICT SCHOOLS, GRADES SERVED, AND ATTENDANCE

School	Grades Served	Attendance
St. Helena Primary School	Kindergarten-2nd grade	277
St. Helena Elementary School	3rd-5th grade	280
Robert Louis Stevenson Middle School	6th-8th grade	313
St. Helena High School	9th-12th grade	504
Madrone Alternative High School	9th-12th grade	22
Total		**1,396**

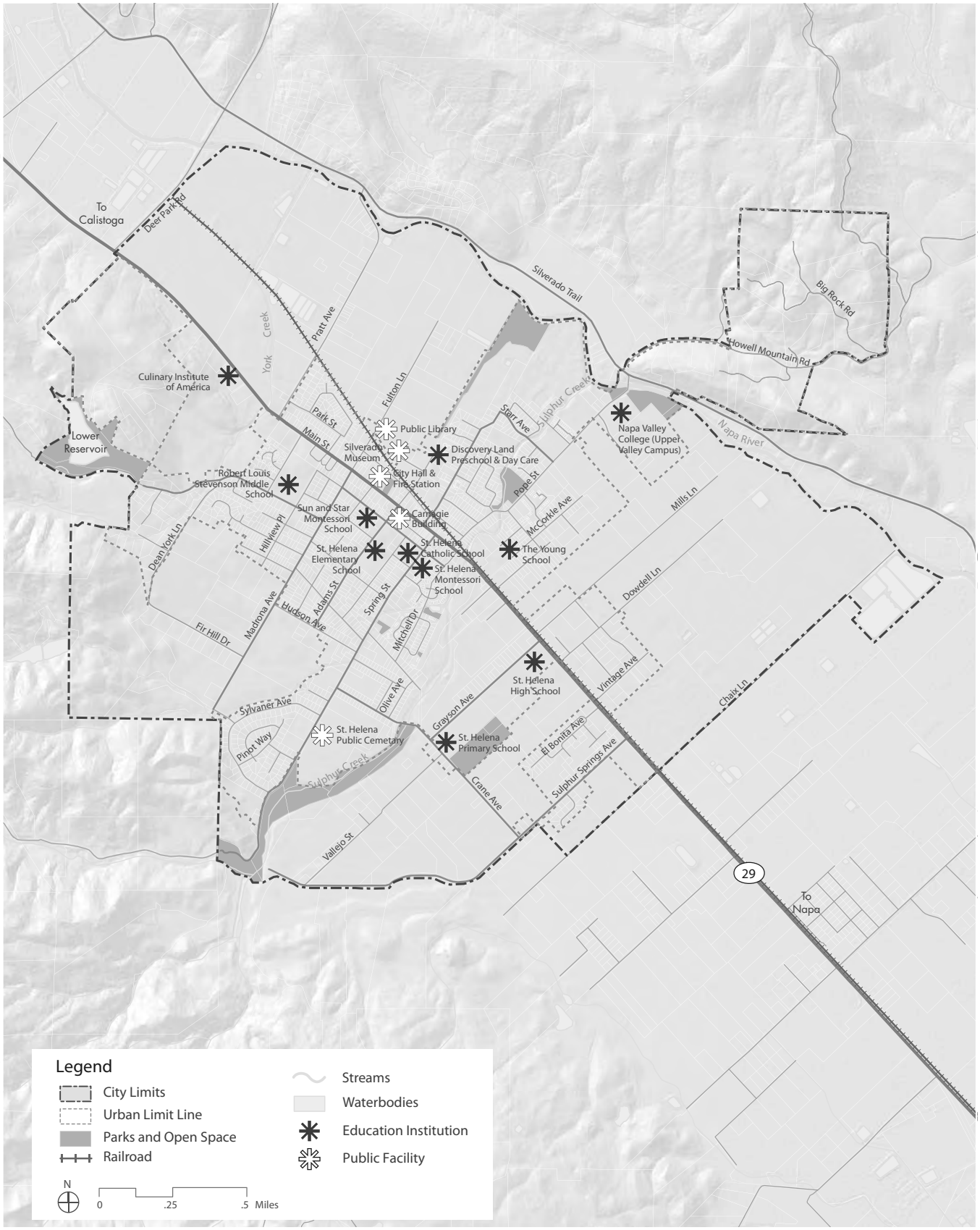
SOURCE: City of St. Helena, 2007

As of 2005, the district's schools served a total of 1,396 students in Kindergarten through 12th grade (see Table 4P-1). With a total capacity of 1,785 students and declining enrollment in recent years, the district anticipates adequate capacity in the near term (City of St. Helena, 2010a).

The district is currently undertaking facility improvements that include a new high school performing arts facility, multi-purpose facilities, nature trail and outdoor learning center, track and field improvements, elementary school fitness center, elementary school media center, and ongoing grounds improvements (St. Helena Unified School District, 2010).

Libraries

The George and Elsie Wood Public Library is the St. Helena's single public library. The library houses approximately 96,000 books, videos, albums, newspapers, magazines and other media. The library also houses the papers



SOURCE: City of St. Helena; Napa County; MIG, Inc., 2010
Map Revised: January 2010

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Figure 4.P-1
Exisitng Schools and Other Public Facilities

of the Napa Valley Wine Library Association and the St. Helena Historical Society. The Robert Louis Stevenson Museum is also located on the library site (see Figure 4.P-1).

St. Helena's library consistently ranks as one of the top public libraries in the state.

St. Helena's library consistently ranks as one of the top public libraries in the state and offers a wide variety of services for residents of all ages. Per capita, the library enjoys the highest circulation and percentage of cardholders in the state.

The library receives public funds and is also sustained by the fundraising efforts of the Friends of the St. Helena Library, a "library foundation" group that has subsidized programming enhancements and a major library expansion (City of St. Helena, 2010a).

The existing library facility and staffing are not adequate to serve current use, which averages approximately 125 people per hour. The building is too small to accommodate this level of use, and some facilities in the building (e.g., the HVAC system) are inadequate (Baker, 2010).

Regulatory Framework

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions for public services and facilities.

The proposed project analyzed in this EIR is the St. Helena General Plan Update (General Plan), which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

Napa County Local Hazard Mitigation Plan

The Napa County Local Hazard Mitigation Plan sets forth goals and strategies for addressing flooding, earthquakes, wildland fire, and other hazards.

As a condition for receiving certain types of non-emergency disaster assistance, state, tribal, and local governments are required to develop a hazard mitigation plan. Napa County, in cooperation with the cities of St. Helena, Napa, American Canyon, Yountville, and special districts, prepared a Local Hazard Mitigation Plan (LHMP) in 2007. The Napa County LHMP sets forth goals, mitigation strategies, and mitigation action items for

addressing flooding, earthquakes, wildland fire interfaces and terrorism and technological hazards (City of St. Helena, 2010b).

City of St. Helena Public Safety Impact Fees

The City of St. Helena collects public safety impact fees to provide for police and fire protection facilities.

In accordance with Municipal Code Section 3.32.050, the City of St. Helena collects public safety impact fees to provide for adequate police and fire protection facilities. The fees are currently set at $1.04 per square foot of new development or conversions. The same impact fee rate applies to both residential and non-residential construction.

City of St. Helena Civic Improvement Impact Fees

In accordance with Municipal Code Section 3.32.060, the City of St. Helena collects civic improvement impact fees to provide for adequate civic improvements, including the city's library and administrative facilities. The fees are currently set at $2.50 per square foot of new residential development and conversions, $1.55 per square foot of new commercial/retail development and conversions, $2.09 per square foot of new office development and conversions, and $1.45 per square foot of new industrial development and conversions.

School Impact Fees

Pursuant to California Education Code Section 17620(a)(1), the governing board at any school district is authorized to levy a fee, charge, dedication, or other requirement against any construction within the boundaries of the district, for the purpose of funding the construction or reconstruction of school facilities. The standard fees are $1.93 per square foot of residential development and $0.31 per square foot of commercial or industrial development, as specified in California Government Code Section 65995(b). As provided in California Government Code Section 65996, the payment of such fees is deemed to fully mitigate the impacts of new development on school services.

Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant impact on public services if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in

order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

- Fire protection;
- Police protection;
- Schools; or
- Other public facilities.

For fire protection/emergency medical and police services, Appendix G further provides that a project would have a significant impact if it would:

- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Relevant Policies

Fire Protection

The following relevant policies and implementing actions of the General Plan Update address fire protection services:

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

LU6.1. Provide a wide-range of high-quality public facilities, including parks, multi-use trails, schools, fire and police services and community centers.

LU6.A. Pursue sites for future public facilities consistent with projected growth.

LU6.B. Explore the feasibility and desirability of moving public facilities to the Adams Street property.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

PS4.1. Maintain a transitional zone around industrial areas to protect the health and safety of residential neighborhoods.

PS4.2. Limit development in hillside areas where wildfire hazard is high…intensity, or maintain them as open space in order to prevent the loss of lives, injuries and property damage due to wildfires.

PS4.3. Protect St. Helena residents from health and safety impacts related to the use, storage, manufacture and transport of hazardous materials.

PS4.4. Discourage new uses that rely extensively on the use of hazardous materials.

PS4.5. Facilitate communication and education about fire safety, non-point source pollution, household hazardous waste disposal and recycling opportunities.

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.

PS4.A. Designate areas in St. Helena that are prone to fire hazards and make this information available to the community.

PS4.B. Develop an ordinance to regulate development and building methods and materials used in fire-prone areas. Integrate best practices in fire resistance for all new and remodeled structures. Continue to require fire-resistant building materials and automatic sprinkler systems to be used in all new structures located in these areas.

PS4.C. Require all structures in high wildfire hazard areas to maintain a clearance of flammable vegetation away from structures, and to use fire-resistant ground covers. The minimum clearance distance should be 30 feet.

PS4.D. Require all new development to meet the minimum fire flow rates specified by the City's Fire Code.

PS4.E. Require all new development plans to be approved by the Fire Department prior to the issuance of building permits, grading permits or final map approval.

PS4.F. Develop a program to inform and educate the community about potential risks, resources and roles and responsibilities for addressing fire safety in St. Helena. Inform residents of homes adjacent to public lands of their responsibility to provide fire breaks adjacent to their homes.

PS4.G. 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 materials.

PS4.H. Develop a Hazardous Materials Response Plan that includes guidelines, protocols and strategies to respond to a local hazardous materials spill.

PS4.I. Strengthen regulations for the safe production, transport, handling, use and disposal of hazardous materials that may cause air, water or soil contamination. Require buffers for operations which handle substantial

amounts of hazardous materials. When siting new facilities or expanding existing facilities, require buffer zones between hazardous materials facilities and residential uses, parkland, trails and open space facilities.

PS6.1. Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.

PS6.A. Maintain and periodically update the City's Emergency Response Plan.

PS6.B. Conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.

PS6.C. Continue to collaborate with regional agencies and neighboring jurisdictions to develop and implement a regional emergency coordination plan and agreement for police, fire and emergency medical services.

Police

The following relevant policies and implementing actions of the General Plan Update address police services:

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

LU6.1. Provide a wide-range of high-quality public facilities, including parks, multi-use trails, schools, fire and police services and community centers.

LU6.A. Pursue sites for future public facilities consistent with projected growth.

LU6.B. Explore the feasibility and desirability of moving public facilities to the Adams Street property.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

PS6.1. Ensure that City emergency procedures are adequate in the event of potential natural or man-made disasters.

PS6.A. Maintain and periodically update the City's Emergency Response Plan.

PS6.B. Conduct periodic emergency response exercises to test the effectiveness of City emergency response procedures.

PS6.C. Continue to collaborate with regional agencies and neighboring jurisdictions to develop and implement a regional emergency coordination plan and agreement for police, fire and emergency medical services.

Schools

The following relevant policies and implementing actions of the General Plan Update address school services:

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

LU6.1. Provide a wide-range of high-quality public facilities, including parks, multi-use trails, schools, fire and police services and community centers.

LU6.A. Pursue sites for future public facilities consistent with projected growth.

LU6.B. Explore the feasibility and desirability of moving public facilities to the Adams Street property.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

PF5.1. Support and cooperate with the St. Helena Unified School District in maintaining high quality education as a community priority.

PF5.2. Promote the efficient use of school facilities for before and after-hour programs that benefit both school-age children and the community at large.

PF5.3. Ensure that children have access to safe routes to school, especially by bicycle and walking.

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.

PF5.A. Assist the School District in collecting school facility development fees generated by new development. Partner with the District to identify, establish and implement additional measures to ensure that the highest quality of education is provided.

PF5.B. Develop a Safe Routes to School Program to improve walking and bicycling access to schools and after-school programs. The program

can promote bicycling and walking to benefit students' health, decrease automobile traffic near schools, and support local efforts to improve the environment. Align this program with the City's bicycle and pedestrian trail systems.

PF5.C. Develop a City-sponsored internship program for St. Helena Unified School District students in order to provide high-quality job skills training and support the School District's educational goals.

Libraries

The following relevant policies and implementing actions of the General Plan Update address library services:

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

LU6.1. Provide a wide-range of high-quality public facilities, including parks, multi-use trails, schools, fire and police services and community centers.

LU6.A. Pursue sites for future public facilities consistent with projected growth.

LU6.B. Explore the feasibility and desirability of moving public facilities to the Adams Street property.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

PF5.5. Encourage continued support for the St. Helena public library and the library foundation to ensure that it maintains high-quality services for all St. Helenans.

Impact Analysis

Less-than-Significant Impacts

Need for New or Expanded Fire Protection Facilities

As discussed in Chapter 3, Project Description, the Likely Buildout Scenario would allow for development that would add an estimated 921 residents and 560 jobs in the city by 2030. This increase in resident and employee population would increase demands for fire protection services but is not currently expected to create a need for new or expanded fire protection facilities. The General Plan Update contains policies and implementing actions for monitoring the need for additional public facilities, pursuing sites

for future facilities consistent with projected growth, and ensuring that new development contributes toward the provision of community facilities and services (Policies LU6.1 and ES1.3 and Implementing Actions LU2.D, LU6.A, and LU6.B). In addition, individual development projects would be subject to Fire Department review and approval and would be required to pay the City's standard public safety impact fees. The effect of the Likely Buildout Scenario on the need for new or expanded fire protection facilities is therefore considered a less-than-significant impact.

Need for New or Expanded Police Facilities

The increase in resident and employee population associated with the Likely Buildout Scenario would increase demands for police services but is not currently expected to create a need for new or expanded police facilities (Desmond, 2010). The General Plan Update contains policies and implementing actions for monitoring the need for additional public facilities, pursuing sites for future facilities consistent with projected growth, and ensuring that new development contributes toward the provision of community facilities and services (Policies LU6.1 and ES1.3 and Implementing Actions LU2.D, LU6.A, and LU6.B). In addition, individual development projects would be subject to Police Department review and approval and would be required to pay the City's standard public safety impact fees. The effect of the Likely Buildout Scenario on the need for new or expanded police facilities is therefore considered a less-than-significant impact.

Need for New or Expanded School Facilities

While development in accordance with the General Plan Update may increase enrollment in public schools, developer payment of standard school impact fees would cover a fair share of any need for new or altered school facilities. The effect of the General Plan Update on the school services would therefore be considered a less-than-significant impact.

As discussed in Chapter 3, Project Description, approximately 379 housing units would be developed under the Likely Buildout Scenario. These units would likely house school-aged children who may attend St. Helena Unified School District schools. Based on typical student generation rates (0.4 elementary school student, 0.1 middle school student, and 0.2 high school student per single-family housing unit), the 379 housing units would generate a total of approximately 266 students (approximately 152 elementary school students, 38 middle school students, and 76 high school students). These estimates might be high, however, since some of the housing units would likely be smaller than a standard single-family unit and therefore may house fewer students.

St. Helena Unified School District schools currently have capacity to serve additional students and are experiencing declining enrollment. The increased student population associated with the Likely Buildout Scenario is not currently expected to create a need for new or expanded school facilities. The General Plan Update contains policies and implementing actions for monitoring the need for additional public facilities, pursuing sites for future facilities consistent with projected growth, and ensuring that new development contributes toward the provision of community facilities and services (Policies LU6.1 and ES1.3 and Implementing Actions LU2.D, LU6.A, and LU6.B). The General Plan Update also contains provisions for tying development approvals to mitigation of impacts on schools, collecting school impact fees, and identifying other measures as necessary (Policy PF5.4 and Implementing Action PF5.A).

Developers would be required to pay the school impact fees that are in effect at the time that building permits are issued. As provided by California Government Code Section 65996, the payment of such fees is deemed to fully mitigate the impacts of new development on schools services.

For these reasons, the effect of the Likely Buildout Scenario on the need for new or expanded school facilities is considered a less-than-significant impact.

Need for New or Expanded Library Facilities

The increase in resident and employee population associated with the Likely Buildout Scenario would increase demands for library services and could create a need for new or expanded library facilities (Baker, 2010). The General Plan Update contains policies and implementing actions for monitoring the need for additional public facilities, pursuing sites for future facilities consistent with projected growth, and ensuring that new development contributes toward the provision of community facilities and services (Policies LU6.1 and ES1.3 and Implementing Actions LU2.D, LU6.A, and LU6.B). In addition, individual development projects would be subject to the City’s standard civic improvement impact fees, which help to fund library facilities. The effect of the Likely Buildout Scenario on the need for new or expanded library facilities is therefore considered a less-than-significant impact.

Exposure to Wildland Fire Hazards

Development in accordance with the Likely Buildout Scenario, especially at the western and eastern edges of the city, has the potential to expose people or structures to wildland fire risks. However, the General Plan Update contains provisions for limiting development in hillside areas where wildfire hazard is high, imposing requirements to reduce fire hazards in buildings in

fire-prone areas, requiring Fire Department approval of all new development plans, and informing the community of fire hazards in these areas (Policy PS4.2 and Implementing Actions PS4.A, PS4.B, PS4.C, PS4.E, and PS4.5). These provisions would effectively reduce wildland fire risks. Exposure to wildland fire hazards under the Likely Buildout Scenario is therefore considered a less-than-significant impact.

Potentially Significant Impacts

The following impact would be potentially significant and thus would warrant mitigation measures.

Impact SERVICES-1: Development in accordance with the General Plan Update could interfere with emergency response or evacuation, particularly due to traffic increases on Highway 29. (Potentially Significant)

As noted in the Setting subsection above, traffic congestion on Highway 29 and other city streets can interfere with Fire Department response to fires. The General Plan Update contains provisions for ensuring that streets are adequate for fire access and requiring developers to contribute toward transportation facilities and services (Policy PS4.6 and Implementing Action LU2.D). For detailed discussion of traffic issues, see Section 4.C, Transportation, of this EIR.

Mitigation Measure

Mitigation Measure SERVICES-1: Implement mitigation measures recommended in Section 4.C, Transportation. These measures would reduce the potential for traffic interference with emergency response and evacuation to a less-than-significant level. (Less than Significant)

References – Public Services

Baker, Jennifer, Library Director, City of St. Helena. 2010. E-mail communication. May 5.

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Sorenson, John, Fire Chief, City of St. Helena. 2010. E-mail communication. June 29.

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4.Q Recreation

Introduction

This section of the EIR describes park and recreation facilities within the City of St. Helena and the potential impacts on these facilities that may result from development allowed by the proposed General Plan Update.

Setting

City of St. Helena Parks

Existing Parks

As shown in Table 4.Q-1 and Figure 4.Q-1, the City of St. Helena maintains eight public parks:

- Crane Park, a 12-acre park located on Crane Avenue 500 feet south of the Crane Avenue/Grayson Avenue intersection and containing 6 lighted tennis courts, 6 lighted bocce ball courts, 2 Little League baseball fields, horse shoe pits, a children's playground, individual and group picnic areas, 2 restrooms, and a skate park;
- Jacob Meily Park, a 4-acre park located on Pope Street and containing a play field, heritage orchard, picnic area, children's playground, and restroom;
- 6.2-acre Wappo Park, which is currently in the design phase and slated for development in Fiscal Year 2010-2011;
- 1.0-acre Lyman Park, located in the 1300 block of Main Street between Pine and Adams streets;
- Mary Fryer Park, a 1-acre park located on Mitchell Drive between Voorhees Circle and St. James Drive and containing picnic tables and play equipment;
- Baldwin Park, a 1-acre park located on 1591 Spring Street between St. James Drive and North Crane Avenue that is predominantly grass and has 2 picnic tables;
- Stonebridge Park, a park of less than a quarter-acre located on Pope Street along the Napa River; and
- Lewis Station, a "pocket park" located on the corner of Church Street and Hunt Avenue.

View of Jacob Meily Park

The parks provide a total of approximately 25.6 acres of parkland, or approximately 19.4 acres of parkland if the currently undeveloped Wappo Park is excluded from the total (City of St. Helena, 2010).

TABLE 4.Q-1
EXISTING CITY OF ST. HELENA PARKS

Category	Park	Number of Acres	Characteristics
Mini	Baldwin Park	1.00	Mowed grass; picnic tables; handicapped-accessible from Voorhees Circle
	Lewis Station	0.13	"Pocket park" with picnic tables, benches, and restroom
	Lyman Park	1.00	Picnic tables; grassy areas; children's play area; gazebo for events; one restroom
	Mary Fryer Park	1.00	Picnic tables; play equipment designed for pre-school-aged children
	Stonebridge Park	0.25	Located on the Napa River; grassy areas with limited parking
Neighborhood	Jacob Meily Park	4.00	Play field; heritage orchard; picnic area; children's playground; restroom
	Wappo Park	6.20	Undeveloped
Community	Crane Park	12.00	Six lighted tennis courts; six lighted bocce courts; two Little League baseball fields; horseshoe pits; children's playground; two restrooms; picnic areas; Farmer's Market; skate park
Total		25.58	

SOURCE: City of St. Helena, 2010

Possible Future Parks

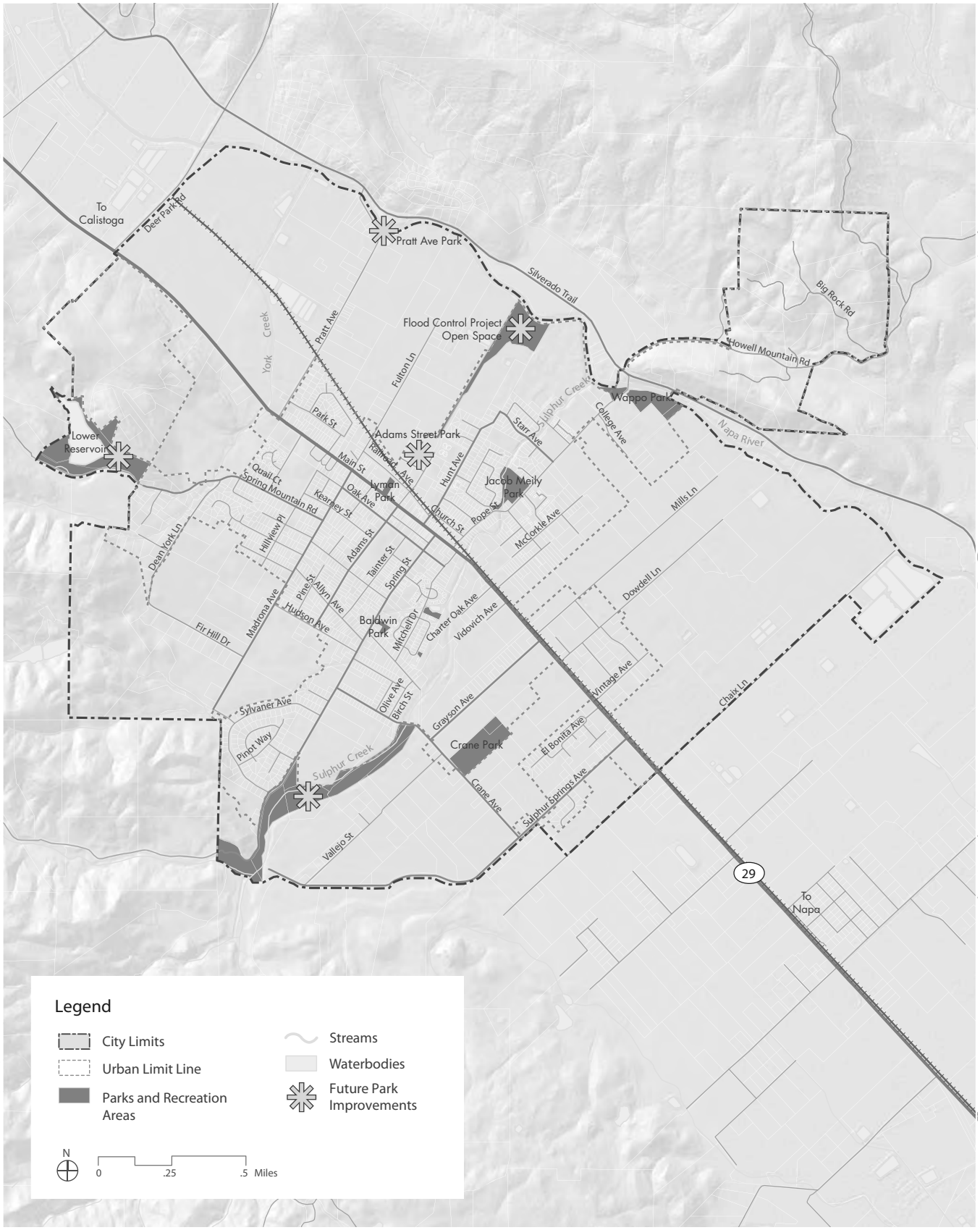
As shown in Figure 4.Q-1, sites identified by the City of St. Helena for future park improvements include the following: (1) the 5.6-acre, City-owned Adams Street parcel at the corner of Adams Street and Library Lane; (2) the 21.65-acre, City-owned "Lower Reservoir" property; and (3) a 15-acre flood control project site that is envisioned to include provisions for passive open space use, such as pathways and interpretive trails.

Compliance with Municipal Park Standards

St. Helena's public park acreage does not meet applicable standards for the amount of parkland provided per 1,000 residents.

Currently, St. Helena's public park acreage does not meet applicable standards for the amount of parkland provided per 1,000 residents. Assuming a current population of 6,100 residents, the City's total developed park acreage (19.4 acres) translates to 3.18 acres per 1,000 residents (or 3.86 acres per 1,000 residents if the undeveloped 6.2-acre Wappo Park is included).

This ratio is below both (1) the National Park and Recreation Association municipal parklands standard of 6.0 to 10.5 acres per 1,000 residents, and (2) the City of St. Helena's slightly lower standard of 5.0 acres per 1,000 residents, as provided in the 1993 St. Helena General Plan.



SOURCE: City of St. Helena; Napa County; MIG, Inc., 2010
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 4.Q-1
Existing Park Facilities

To meet the City standard of 5.0 acres per 1,000 residents, the City would need 30.5 total acres, or approximately 11.1 additional acres of parkland. To meet the national standard of 6.0 to 10.5 acres per 1,000 residents, the City would need 36.6 to 64.1 total acres, or approximately 17.2 to 44.7 additional acres. Future development of Wappo Park would reduce these park needs by approximately 6.2 acres.

State Parks

State parks in the vicinity include the 1,900-acre Bothe-Napa Valley State Park and the adjoining Bale Grist Mill State Historic Park.

Other parks in the vicinity include two state parks located on the west side of Highway 29 north of the city: the 1,900-acre Bothe-Napa Valley State Park, which offers camping, picnicking, swimming, and hiking trails; and the adjoining 0.75-acre Bale Grist Mill State Historic Park, the site of a water-powered grist mill that was built in 1846 (California State Parks, 2010).

Regulatory Framework

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions for parks and recreational facilities.

The proposed project analyzed in this EIR is the St. Helena General Plan Update (proposed General Plan Update), which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

City of St. Helena Civic Improvement Impact Fees

In accordance with Municipal Code Section 3.32.060, the City of St. Helena collects civic improvement impact fees to provide for adequate civic improvements, including parks and recreation facilities, to serve new development. The fees are currently set as: $2.50 per square foot of new residential development and conversions; $1.55 per square foot of new commercial/retail development and conversions; $2.09 per square foot of new office development and conversions; and $1.45 per square foot of new industrial development and conversions.

Municipal Park Standards

As discussed in the Setting subsection above, the National Park and Recreation Association recommends a municipal parklands standard of 6.0 to 10.5 acres per 1,000 residents. The 1993 St. Helena General Plan provides for a slightly lower standard of 5.0 acres per 1,000 residents.

Impacts and Mitigation Measures

Significance Criteria

Appendix G of the CEQA Guidelines provides that a project would have a significant impact on parks and recreational facilities if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:
  - Parks;
- Increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

Relevant Policies

The following relevant policies and implementing actions of the General Plan Update address park and recreation facilities and services:

(NOTE: See Section 4.C, Transportation and Traffic, of this EIR for General Plan policies and implementing actions for pedestrian and bicycle trails.)

> *LU2.D*. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.
>
> *LU6.1*. Provide a wide-range of high-quality public facilities, including parks, multi-use trails, schools, fire and police services and community centers.

LU6.A. Pursue sites for future public facilities consistent with projected growth.

LU6.B. Explore the feasibility and desirability of moving public facilities to the Adams Street property.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element).

CD4.1. Encourage the development of public spaces for formal and informal gatherings, such as plazas, seating and small performance areas.

CD4.2. Integrate open space, including parks, community gardens, natural areas and agriculture into the community to strengthen the connection to St. Helena's agricultural heritage and provide a sense of openness.

CD4.A. Require private development to incorporate public open space into new projects.

OS2.3. Preserve open space for recreational uses, including a bicycle and pedestrian trail system along creek corridors when compatible with riparian vegetation and wildlife habitat. Where possible, integrate stream corridors with trails and other recreational open space, provided that the vegetation, habitat value and water quality is not significantly impacted.

OS2.B. Adopt a land dedication ordinance that requires developers to provide land and improvements, such as trails and revegetation, along both sides of creek corridors as a condition of subdivision approval. The width of dedicated corridors should be established in consultation with the California Department of Fish and Game.

OS 2.C. Pursue easements to open space areas that do not have adequate access for maintenance and management purposes.

OS2.D. Provide for open space opportunities by including passive and active recreation areas within projects as they develop.

OS2.E. Explore the possibility of public use of the wastewater treatment plant spray field in the form of trails and passive open space.

CC1.L. Develop parks and open spaces in support of efforts to create walkable, bikeable mixed-use neighborhoods, especially to complement higher-density land uses.

PR1.1. Increase the City's park land standard to at least six acres per 1,000 persons.

PR1.2. Enhance the community's quality of life and ensure a widely accessible environment through the provision of a citywide system of parks and open spaces. Identify and develop linkages, corridors and other

connections to provide an aesthetically pleasing and functional network of parks, open space areas and bike paths throughout the City.

PR1.3. Identify park land opportunity sites to ensure that the City can meet or exceed its park land standard of six acres per 1,000 residents. Locate new parks to ensure that City park facilities are equitably distributed throughout all areas of the City and residents can access them safely and conveniently.

PR1.4. Require either park land dedications or in-lieu park development fees on all new commercial, industrial and residential developments sufficient to fund citywide park improvements.

PR1.5. Ensure adequate funding to acquire new park lands as they become available.

PR1.6. Develop new parks only after existing parks have received adequate funding and maintenance.

PR1.A. Develop a comprehensive, long-range Parks and Recreation Master Plan to aid the City in creating an integrated system of parks. The plan should be updated periodically to address changing recreation interests, trends, needs and priorities. The Parks and Recreation Master Plan should:

- Identify long-term goals for the Parks and Recreation Department and the community;
- Describe current and future needs, interests and community preferences for improving new parks and community facilities, and expanding or initiating new programs and services;
- Present a long-range plan for physical park and community facility improvements;
- Refine performance standards and further develop park design guidelines and criteria;
- Prioritize projects;
- Identify the proportion of Civic Improvement Fees that will be contributed to the development and maintenance of parks and recreational facilities; and
- Outline funding mechanisms and strategies for managing the City's commitments, so that new requests and initiative are considered in light of existing commitments.

Subsequent actions in this Element may be included in the Parks and Recreation Master Plan.

PR1.B. Create opportunities to develop additional parks at the following locations:

- The City-owned land along the Napa River and Pratt Avenue for passive recreational uses;

- Land adjacent to York and Sulphur Creeks, as well as the Napa River levee;
- The water treatment plant site; and
- The Lower Reservoir area for a water-oriented community recreation facility.

Ensure that new parks are developed to include bicycle and pedestrian trails that connect to other parks as part of a larger interconnected park system.

PR1.C. Identify a variety of funding sources for new parks and park improvements, including in-lieu fees, and regional, state and federal programs, as well as other City funding sources.

PR1.D. Acquire additional park land to meet or exceed the City's six acres of developed park land per 1,000 residents standard.

PR1.E. Develop a comprehensive network of bicycle and pedestrian trails that links the City's parks and enhances bicycle and pedestrian connectivity throughout the City and the region.

PR1.F. Increase City park land dedication requirements for new developments. Include specific park acreage and use requirements according to the type and scale of new development.

PR1.G. Develop a dog park with high-quality amenities, such as shade structures, benches, a water source and waste receptacles.

PR2.1. Distribute parks and recreational facilities throughout the City to ensure that all residents have convenient access to parks and recreational programs and facilities.

PR2.2. Construct new parks and recreation facilities to accommodate community needs.

PR2.3. Ensure that parks and recreation programs have safe and convenient access.

PR2.A. Prioritize the construction of new parks and recreation facilities to ensure that they are distributed equitably to all areas of the City. Conduct studies to ensure that the development of new parks focuses on underutilized land or City-owned properties. Park and recreation facility development studies should include the potential impacts of development on surrounding natural resources and agricultural areas.

PR2.B. Encourage the inclusion of pocket parks that include amenities, such as picnic tables, restrooms, shade and recreation spaces near retail, commercial and industrial areas.

PR2.C. Locate parks and recreation facilities in areas that are easily accessible by public transportation, as well as cars, bicycles and pedestrians.

PR2.D. Where possible, ensure that recreation programs and access to facilities are provided at costs affordable to all St. Helena residents.

PR2.E. Develop and implement a list of planned parks and recreation facilities.

PR2.F. Identify community locations that are not within a 10-minute walk of a park or recreation facility. Develop parks in the identified areas to ensure an equitable distribution of parks citywide.

PR3.1. Ensure that the design and development of parks and recreation facilities preserves viewsheds and creates a buffer between urban and agricultural uses, where necessary.

PR3.2. Protect sensitive habitat, agricultural land and open space when planning and maintaining City park lands.

PR3.3. Support local wildlife conservation efforts by incorporating habitat elements in urban/agricultural interface areas and ensuring the protection of migration corridors.

PR3.A. Develop design guidelines for recreational facilities that preserve viewsheds and maintain a transition buffer between urban and agricultural uses. Include specific design criteria regarding recreational trails and picnic areas adjacent to agricultural uses.

PR3.B. Identify locations where new recreational programs and facilities may be constructed.

PR3.C. Design and locate new parks to minimize noise and activity impacts on nearby agricultural and residential uses. This includes requiring context-sensitive site designs that minimize negative impacts on surrounding uses, such as pathway and picnic area locations, ball field usage and park lighting.

PR3.D. Provide habitat elements in urban/agricultural interface areas. Habitat elements may include roosting trees and nesting boxes for birds, bats and other wildlife, as appropriate.

PR4.1. Develop systematic and comprehensive plans to guide the development and operation of City parks and recreational programs.

PR4.2. Balance between preservation, education, recreation and public health and safety in park and open space planning.

PR4.3. Provide park areas for residents to meet a variety of needs, including: formal, active uses; passive uses that allow for interaction with natural landscapes; and interpretive programs that highlight geomorphology, ecology, cultural resources, agricultural heritage and historic preservation.

PR4.4. Ensure that all parks and recreational facilities are attractive, safe and well-maintained with adequate lighting.

PR4.5. Prioritize park acquisitions and improvements that expand and enhance St. Helena's active recreation facilities and programs to accommodate diverse community needs and interests.

PR4.A. Conduct a needs assessment to revise and update the City's recreation program in order to enhance existing programs and/or develop new programs. Update the assessment at least once every five years to determine needed improvements. Incorporate a survey or other formal outreach process to gather community input on parks and facility needs.

PR4.B. Establish design guidelines for the development of parks and recreation facilities. Design parks and recreation facilities that are attractive, safe and easy to maintain. This action may be included in a Parks and Recreation Master Plan.

PR4.C. Identify locations to accommodate active recreational uses to meet citywide needs. Potential locations include:

- Bicycle and pedestrian trails, interpretive areas, trail heads, and comfort stations along York and Sulphur creeks and the Napa River; and
- A community park at the City-owned Lower Reservoir area.

PR4.F. Provide multi-purpose event spaces for cultural events in the park system, where possible.

PR4.H. Develop soccer fields, multi-sport facilities and a new community pool to meet citywide athletic needs.

PR4.I. Identify key improvements to existing parks, such as parking, picnic facilities, restrooms, tot lots with play structures and multi-modal access points. This action may be included in a Parks and Recreation Master Plan.

PR5.1. Encourage partnerships with local organizations and the private sector to provide, develop and maintain parks, recreation facilities and programs.

PR5.2. Ensure that a broad cross-section of St. Helena stakeholders participates in the planning, design and maintenance of parks and recreational amenities.

PR5.3. Encourage volunteerism, mutual responsibility and community spirit to set the tone that St. Helena's public parks and open spaces belong to everyone.

PR5.A. Emphasize joint planning and cooperation with all public agencies as the preferred approach to meeting St. Helena's parks, facilities and program needs.

PR5.B. Require the dedication of land and/or payment of Civic Improvement Fees to be used for parks and recreation purposes as a condition of approval for new development.

PR5.C. Provide local organizations, the St. Helena Unified School District and the private sector with opportunities and support for creating and implementing solutions to meet the City's parks and recreation facilities needs.

PR5.D. Cooperate with local groups in designing and constructing recreation facilities. Where possible, coordinate recreation and child care programs and facilities with school district programs.

PR5.E. Negotiate joint-use agreements for recreation facilities with the St. Helena Unified School District.

PR5.F. Involve the private sector in providing and maintaining parks and recreation facilities through formal agreements with the City and in sponsoring increased volunteerism.

PR5.G. Investigate the feasibility of creating a non-profit foundation to seek and receive funds for the support of parks and recreation programs. Look to St. Helena's successful library foundation as a local model.

PR5.H. Foster neighborhood park planning committees, including neighborhood residents, business owners and representatives from local groups to help plan, design and maintain parks and recreational facilities.

PR5.I. Work with community members and representatives of local sports organizations to define facilities needs as community needs change with time.

PR5.J. Develop a public outreach program to involve community members in park maintenance and upkeep, and in mitigating vandalism. Create park signage to encourage responsible use of parks, and partner with the police force to support enforcement efforts.

Impact Analysis

Less-than-Significant Impacts

The proposed General Plan Update provides for new parks and recreational facilities, the construction of which could have adverse environmental effects. Numerous proposed General Plan Update policies and implementing actions provide for development of new parks, recreational facilities, and other recreational opportunities (see Relevant Policies subsection above). Potential new park sites specifically identified in the General Plan Update (Implementing Actions and LU6.B and PR1.B) include the 5.6-acre, City-owned Adams Street parcel and the 21.65-acre, City-owed "Lower Reservoir" property (see Figure 4.Q-1). Change Area 1 (Adams Street)

identified by the proposed General Plan Update includes provisions for park development (see Chapter 3, Project Description).

The potential environmental impacts of the park development provisions of the General Plan Update are analyzed throughout Chapter 4 of this EIR. The proposed General Plan Update contains policies and implementing actions that would ensure that the design and development of parks and recreational facilities would avoid noise and other impacts on nearby agricultural and residential uses (Implementing Action PR3.C); protect viewsheds (Policy PR3.1 and Implementing Action PR3.A), agricultural lands (Policies PR3.1 and PR3.2 and Implementing Action PR3.A), and sensitive habitat and open space (Policies PR3.2 and PR3.3 and Implementing Action PR3.D); and address preservation, public health and safety issues (Policies PR4.2 and PR4.4 and Implementing Action PR4.B) (see Relevant Policies subsection above). These General Plan Update provisions would ensure that the environmental impacts of park development would be reduced to a less-than-significant level.

Potentially Significant Impacts

The following impact would be potentially significant and thus would warrant mitigation measures.

Impact RECREATION-1: Development in accordance with the proposed General Plan Update could increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, particularly since the City's existing parkland inventory does not meet applicable standards for the amount of parkland per 1,000 residents. (Potentially Significant)

As discussed in Chapter 3, Project Description, the Likely Buildout Scenario would allow for residential development that would add an estimated 921 residents in the city by 2030. This increase in population could increase demands on existing parks and recreational facilities. The increased demand could lead to physical deterioration of these facilities, particularly since the city's existing public park acreage does not meet applicable standards for the amount of parkland provided per 1,000 residents (see Setting subsection above).

Based on the 1993 St. Helena General Plan standard of 5.0 acres of parkland per 1,000 residents, the 921 additional residents anticipated under the Likely Buildout Scenario would create a need for approximately 4.6 acres of parkland. Based on the standard of 6.0 acres per 1,000 residents proposed by the General Plan Update (see Policies PR1.1 and PR1.3 and Implementing Action PR1.D),

the 921 additional residents would create a need for approximately 5.5 acres of parkland. Based on the National Park and Recreation Association standard of 10.5 acres per 1,000 residents, the 921 additional residents would create a need for approximately 9.7 acres of parkland. These parkland needs would be in addition to the existing needs (ranging from 10.2 to 42.8 additional acres) identified in the Setting subsection above.

Potential impacts on existing facilities would be offset by the extensive list of General Plan Update policies and implementing actions providing for maintenance and improvement of existing parks and development of new parks, recreational facilities, and other recreational opportunities (see Relevant Policies subsection above). Potential new park sites specifically identified in the General Plan Update (Implementing Actions and LU6.B and PR1.B) include the 5.6-acre, City-owned Adams Street parcel and the 21.65-acre, City-owed "Lower Reservoir" property (see Figure 4.Q-1). Change Area 1 (Adams Street) identified by the General Plan Update includes provisions for park development (see Chapter 3, Project Description). These parkland opportunities (totaling approximately 30 acres) may not be sufficient to offset existing plus projected parkland needs, which could range from 14.8 to 52.5 acres.

Mitigation Measure

Mitigation Measure RECREATION-1: Policies PR1.1 and PR1.3 and Implementing Action PR1.D shall be revised to increase the parkland standard from six acres of developed parkland per 1,000 residents (the minimum National Park and Recreation Association standard) to 10.5 acres per 1,000 residents (the maximum National Park and Recreation Association standard). This change would help to ensure that adequate parkland is provided to meet existing and future needs and would reduce the potential for deterioration of existing parkland to a less-than-significant level. (Less than Significant)

References – Recreation

City of St. Helena. 2007. Infrastructure, Community Services and Facilities General Plan Update Working Paper. November.

City of St. Helena. 2010. St. Helena General Plan Update 2030, Chapter Twelve, Parks and Recreation, Public Draft. February.

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4.R Utilities and Service Systems

Introduction

This section of the EIR describes existing water, wastewater, and solid waste disposal facilities and services within the City of St. Helena and the potential impacts on these facilities and services that may result from development allowed by the proposed General Plan Update.

The water and wastewater facility analysis in this section is based on a technical memorandum and a draft City of St. Helena Water Supply Plan prepared by West Yost Associates, Consulting Engineers, for the City of St. Helena (West Yost Associates, 2010a, 2010b). These documents are available for review at the City of St. Helena Planning Department, 1480 Main Street, St. Helena.

Setting

Water

The City of St. Helena provides water service within and outside the city limits. The City's water infrastructure includes two reservoirs, three groundwater wells, three pump stations, six storage tanks, and a network of 18- and 24-inch distribution lines (City of St. Helena, 2007).

Water Supply

The City receives water from four sources: Bell Canyon Reservoir, Lower York Creek Reservoir (Lower Reservoir)[1], groundwater wells, and purchased water through a contract with the City of Napa (City of St. Helena, 2010). Table 4.R-1 summarizes potable water production from these sources for the period 1990-2009, and Table 4.R-2 shows estimated current potable water supply.

The following discussion provides an overview of the City's water supply system. Additional detail is provided in the draft City of St. Helena Water Supply Plan (West Yost Associates, 2010b) available for review at the City of St. Helena Planning Department.

Bell Canyon Reservoir

Bell Canyon Reservoir is the City's primary water supply source.

Bell Canyon Reservoir is the City's primary water supply source. The City currently has the right to divert and store 3,800 acre-feet at Bell Canyon Reservoir, but the reservoir's actual storage capacity is approximately 2,500 acre-feet.

[1] Water from Lower Reservoir is for non-potable water only.

TABLE 4.R-1
POTABLE WATER SUPPLY, 1990-2009

Calendar Year	Bell Canyon Reservoir (acre-feet)	Stonebridge Wells (acre-feet)	City of Napa Water (acre-feet)[1]	Total Water Supplied (acre-feet)	Percent Groundwater
1990	1,632	---	299	1,931	0%
1991	1,353	---	77	1,430	0%
1992	1,466	270	---	1,736	16%
1993	1,528	105	---	1,634	6%
1994	1,086	292	87	1,465	20%
1995	1,285	205	11	1,501	14%
1996	1,511	195	---	1,706	11%
1997	1,517	262	---	1,779	15%
1998	1,411	237	---	1,647	14%
1999	1,592	264	---	1,857	14%
2000	1,524	373	---	1,897	20%
2001	1,647	467	---	2,114	22%
2002	1,942	349	---	2,290	15%
2003	1,681	476	---	2,157	22%
2004	1,741	499	---	2,240	22%
2005	1,617	382	---	1,998	19%
2006	1,647	410	---	2,057	20%
2007	1,008	521	452	1,980	26%
2008	1,022	479	326	1,828	26%
2009	992	508	314	1,814	28%

[1] Before 2007, use of City of Napa water was for emergency water purposes. In 2007 and after, use of City of Napa water was through the City of Napa water agreement.

SOURCE: West Yost Associates, 2010b

TABLE 4.R-2
ESTIMATED CURRENT POTABLE WATER SUPPLY

Water Supply Source[1]	Wet Year Supply (acre-feet)	Normal Year Supply (acre-feet)	Below Normal Year Supply (acre-feet)	Dry Year Supply (acre-feet)	Critical Dry Year Supply (acre-feet)
Bell Canyon Reservoir	1,100	1,000	800	600	500
Napa Water Agreement[2]	800	600	600	400	400
Groundwater	475	400	350	429	386
Total	**2,375**	**2,000**	**1,750**	**1,429**	**1,286**

[1] Assumes groundwater will be 20 percent of total supply in most years and 30 percent of total supply in Dry and Critical Dry Years.
[2] The assumptions listed here are used because 800 acre-feet of supply from the Napa water agreement is not guaranteed in any given year.

SOURCE: West Yost Associates, 2010b; City of St. Helena Water & Sewer Subcommittee, 2010

The City has the right to divert 1 cubic foot per second (cfs) from the reservoir for immediate use between November 15 and April 15 (150 days) of each year. The 1 cfs diverted for immediate use does not count against the 3,800-acre-foot storage limit and could add up to almost 300 additional acre-feet (West Yost Associates, 2010b).

Average historical yield from the reservoir is 1,500 acre-feet per year, but actual yields have been as high as 1,942 acre-feet in 2002 (see Table 4.R-1). Sustainable yield (i.e., the maximum amount of water that the City could withdraw from the reservoir each year and be confident that it could withdraw the same amount every year) ranges from approximately 500 acre-feet in critically dry years to approximately 1,100 acre-feet in wet years (West Yost Associates, 2010b).

The Bell Canyon Reservoir water supply is treated at the Louis Stralla Treatment Plant. The plant has a treatment capacity of 4.3 million gallons per day (mgd). Typically, the plant operates at 3.5 mgd (City of St. Helena, 2010).[2]

Groundwater Wells

The City has three groundwater wells.

The City has three groundwater wells. Two of them produce potable water, and the remaining well provides non-potable water for irrigation. The wells are located near the Napa River, south of Pope Street. The wells have a combined capacity of approximately 650 gallons per minute. The City only operates one well at a time and maintains a groundwater level monitoring program in the area. Local groundwater is used to supply about 20 percent of the annual water demand, but this can be increased to 30 percent in the event of water shortages (City of St. Helena, 2010; West Yost Associates, 2010b).

City of Napa Water

The City of St. Helena is under contract with the City of Napa for additional water supply.

The City of St. Helena is under contract with the City of Napa for additional water supply. The water supply agreement provides for up to 800 acre-feet of water per year (City of St. Helena, 2010; West Yost Associates, 2010b). Before 2007, the City of St. Helena used this additional supply for emergency water purposes. Since 2007, the City of St. Helena has used between 314 and 452 acre-feet of water per year of this additional water supply (see Table 4.R-1).

The water is received from the City of Napa water transmission system at the City of St. Helena's Rutherford Pump Station. The maximum delivery rate allowed is 1 million gallons per day (mgd) (700 gpm).

[2] At 3.5 mgd, this equates to the capacity to treat 3,924 acre-feet per year (running continuously). The treatment plant has capacity to treat the summertime maximum day demand, which is greater than the annual average (West Yost Associates, 2010c).

Lower Reservoir

Lower Reservoir has a capacity of approximately 200 to 225 acre-feet. The City has a pre-1913 claim to store up to 160 acre-feet at this reservoir.

Lower Reservoir is a source of non-potable water only.

Lower Reservoir is a source of non-potable water only. Up to 50 acre-feet per year of untreated water from Lower Reservoir is used for irrigation at Robert Louis Stevenson Middle School and at the Spring Mountain Winery. Untreated water is also provided to local contractors for construction purposes (City of St. Helena, 2010; West Yost Associates, 2010b). Lower Reservoir is also an important source of water in case of a major fire; water may be pumped directly from the reservoir or helicopters may airlift water from the reservoir in the event of a local wildland fire (City of St. Helena Water & Sewer Subcommittee, 2010). (See also "Emergency Water" below.)

Significant expansion of the reservoir's capacity is not considered feasible because of the reservoir's small size and the age of the dam. To be potable, water from Lower Reservoir would require treatment, which would involve significant capital costs (City of St. Helena Water & Sewer Subcommittee, 2010).

Water Distribution System

The existing water distribution network covers a large area within and outside the city limits.

The existing water distribution network covers a large area within and outside the city limits. The network extends from Lodi Lane, two miles north of the city, to Niebaum Lane, three miles south. The City has approximately 1,964 water connections within the city limits, serving approximately 6,000 people. The City also serves about 348 connections outside the city limits, providing water to an additional estimated population of 770 people (City of St. Helena, 2010).

The City has implemented an aggressive leak detection and repair program in its water distribution system. The City has a low rate of "unaccounted-for" water[3] (City of St. Helena, 2010).

Water Recycling Project

The City of St. Helena has considered a recycled water project that would involve upgrading and expanding the existing wastewater treatment facilities to provide up to 1,200 acre-feet of recycled water, meeting Title 22 tertiary, unrestricted reuse standards by the year 2025. The 1,200 acre-feet of recycled water would be used to offset the current use of potable water for irrigation

[3] "Unaccounted-for water" is the difference between the amount of water produced or purchased by the City and the amount of water sold to all City customers. This water is a resource that has been consumed but not metered due to leaks, unauthorized use, firefighting, system maintenance, inaccurate meters, and other unmetered consumptions.

of school grounds, parks, other City properties, and vineyards. This water would also be used to enhance drought and fire protection supplies.

To date, the City has not implemented its recycled water project due to logistical and financial constraints. Key issues include inadequacies in the City's distribution system that limit options for returning recycled water to users; insufficient demand for use of recycled water for irrigation purposes, particularly among wineries; and lack of storage capacity for the water (City of St. Helena, 2010).

Emergency Water

The City's emergency water supply sources are the same as the City's regular supply. The water agreement with the City of Napa indicates that Napa will provide emergency water supply to St. Helena if Napa has water available. This emergency water provision does not include providing water to St. Helena during droughts.

Water Demand

Total existing demand for potable water averages about 1,874 acre-feet per year.

Total existing metered potable water demand averages about 1,874 acre-feet per year. Table 4.R-3 lists average annual water demand for land uses within the city limits. These land uses accounted for an average metered potable water demand of approximately 1,483 acre-feet per year for fiscal years 2002-2008. For land uses outside the city limits, metered potable water demand averaged 307 acre-feet per year for fiscal years 2002-2008. Over the same time period, metered potable water demand for landscape irrigation (not including Lower Reservoir non-potable water use) averaged 84 acre-feet per year (West Yost Associates, 2010b).

TABLE 4.R-3
ESTIMATED ANNUAL WATER DEMAND BY LAND USE WITHIN CITY LIMITS

Land Use	Total Existing Units[1]	Average Annual Metered Water Demand (acre-feet)[2]	Annual Unit Water Demand (acre-feet per unit)
Residential	2,402.0	958	0.40
Commercial, Retail, Institutional	1,186.3	371	0.31
Industrial	518.9	154	0.30

1 "Units" are occupied dwelling units for residential land use areas and thousand square feet of floor space for commercial, retail, institutional, and industrial land use areas. The quantity of units was provided by the City and represents the average values for 2002-2008. These numbers differ from those in Table 3-10 in Chapter 3 because they consider only occupied (not total) residential units and non-residential floor space is considered rather than parcel size.

2 Average water demand for fiscal years 2002-2008.

SOURCE: West Yost Associates, 2010b

Wastewater

The City of St. Helena provides wastewater collection and treatment service in St. Helena. The City's wastewater infrastructure includes a wastewater treatment plant, a wastewater collection system that uses 8- and 24-inch pipe and trunk lines, and one wastewater lift station (City of St. Helena, 2007).

Existing Wastewater Generation

Table 4.R-4 lists average, minimum, and maximum wastewater flows in St. Helena for the period 1995-2009. The average dry weather flow is used to project wastewater flow rates because it most truly represents the flow contribution from customers, without excessive dilution from inflow and infiltration, although some groundwater infiltration into the collection system persists throughout the summer. As shown in the table, average annual dry weather flow was 0.43 million gallons per day (mgd) over the 1995-2009 period. Minimum average annual dry weather flow was 0.34 mgd, and the maximum average annual dry weather flow was 0.51 mgd (West Yost Associates, 2010a).

TABLE 4.R-4
WASTEWATER FLOWS, 1995-2009

Year	Average Annual Flow (million gallons per day)	Average Dry Weather Flow (million gallons per day)	Average Wet Weather Flow (million gallons per day)	Maximum Wet Weather Flow (million gallons per day)
1995	0.68	0.34	1.18	2.50
1996	0.66	0.39	1.02	3.95
1997	0.54	0.38	1.13	3.74
1998	0.72	0.43	1.41	3.10
1999	0.56	0.41	0.86	2.58
2000	0.56	0.43	0.75	2.73
2001	0.61	0.45	0.64	1.82
2002	0.60	0.45	1.02	2.91
2003	0.67	0.51	1.07	3.25
2004	0.65	0.46	1.12	3.26
2005	0.70	0.49	0.97	2.00
2006	0.72	0.48	1.12	3.28
2007	0.49	0.42	0.62	1.05
2008	0.53	0.41	0.84	1.75
2009	0.49	0.40	0.58	1.15
Average	**0.61**	**0.43**	**0.96**	**2.60**
Maximum	**0.72**	**0.51**	**1.41**	**3.95**
Minimum	**0.49**	**0.34**	**0.58**	**1.05**

SOURCE: West Yost Associates, 2010a

Wastewater Collection System

More than 2,000 customers are served by the City's sewer system within the present city limits.

More than 2,000 customers are served by the City's sewer system within the present city limits. About 300 dwelling units and three wineries are on individual disposal systems, most of them too remote to reach the City's sewer system.

With the exception of the original town site, which has four-inch sewer lines, most of the city is served by pipes adequately sized for dry weather flows. During the winter rainy season, surface water and groundwater infiltration increases flows by eight times. In several areas of the city, the sewer system suffers from defects that prevent free flow of sewage, resulting in backwater in the system.

One lift station exists at the Crinella development in the northeast quadrant east of Main Street. The rest of the sewer system operates by gravity (City of St. Helena, 2010).

Wastewater Treatment Plant

The City's wastewater treatment plant, located at the southeast end of the city, is a low maintenance, integrated pond system that stores treated effluent and disposes effluent by spray irrigation onto a 90-acre grass field. Wastewater is treated to a secondary level. When pond storage capacity is exceeded during the winter rains, treated effluent may be discharged into the Napa River, under strict regulation. Because the Napa River fluctuates with the rains, the discharge periods are limited.

The National Pollutant Discharge Elimination System (NPDES) permit currently limits the wastewater treatment plant capacity to 0.5 million gallons per day.

The National Pollutant Discharge Elimination System (NPDES) permit currently limits the treatment plant's average dry weather influent flow to 0.5 million gallons per day (mgd) until the year 2010. The plant is currently operating near its maximum permitted capacity. Inflow and infiltration of stormwater appear to be a large portion of the wet season sewage flow. The City is currently working with the San Francisco Bay Regional Water Quality Control Board (RWQCB) to extend the wastewater treatment plant permit (City of St. Helena, 2007; West Yost Associates, 2010a).

The City is evaluating potential expansion of the treatment plant's capacity, along with potential sewer repair and replacement projects. The City has identified a proposed timeline for upgrade of the treatment plant to provide a total capacity of approximately 0.8 mgd. The currently anticipated timeline indicates that the City will complete construction of the proposed upgrades by December 1, 2013, with performance verification by December 1, 2014 (City of St. Helena, 2010; West Yost Associates, 2010a; RWQCB, 2010). The City and its consultants are beginning the engineering studies necessary to add tertiary-level treatment to the plant.

Solid Waste Disposal

Upper Valley Disposal provides solid waste services to residents and businesses in the City of St. Helena. The agency provides an extensive recycling program and a variety of waste reduction programs. 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. In 2006, the agency diverted approximately 67 percent of collected waste away from landfills (City of St. Helena, 2010; Abreu, 2010).

Solid waste is disposed of at the Clover Flat Landfill, located on the Silverado Trail north of St. Helena.

Solid waste is disposed of at the Clover Flat Landfill, located on the Silverado Trail north of St. Helena. The existing and projected amount of solid waste received at the landfill is 50,000 tons per year. The landfill has a permitted capacity of 5.1 million cubic yards. In 2009, the landfill had a remaining capacity of approximately 3.33 million cubic yards. The landfill's estimated closure date is 2047 (City of St. Helena, 2010; Abreu, 2010).

The Clover Flat Landfill expects to revise its Solid Waste Facility Permit in 2010 to comply with provisions of the State of California's *Climate Change Scoping Plan* (see "Regulatory Framework" below). The changes will provide for mandated commercial recycling processing services, production of organic feedstocks for composting, and renewable energy generation (Abreu, 2010).

Regulatory Framework

Existing St. Helena General Plan

The existing St. Helena General Plan, adopted in 1993, outlines policies, standards, and programs that together provide a comprehensive, long-term plan for physical development within the city. Individual development projects proposed within the city must demonstrate general consistency with the goals and policies outlined within the General Plan, which articulates and implements the city's long-term vision, including provisions for utilities and service systems.

The proposed project analyzed in this EIR is the St. Helena General Plan Update (General Plan Update), which is an update of the existing General Plan. Once the General Plan Update is adopted, future developments within the city will be subject to policies outlined in the updated document.

City of St. Helena Water Impact Fees

In accordance with Municipal Code Section 3.32.070, the City of St. Helena collects water impact fees to provide for adequate water facilities and services. The fees are currently set at $5.33 per square foot of single-family residential development, $2.32 per square foot of multi-family residential development, $8.82 per square foot of commercial development, $4.56 per square foot of office development, and $6.05 per square foot of industrial development. These fees are collected at the time of new construction or conversions of development from one use to a new use.

City of St. Helena Sewer Impact Fees

The City of St. Helena collects water and sewer impact fees to provide for adequate facilities and services.

In accordance with Municipal Code Section 3.32.080, the City of St. Helena collects sewer impact fees to provide for adequate wastewater facilities and services. The fees are currently set at $4.30 per square foot of single-family residential development, $3.42 per square foot of multi-family residential development, $7.02 per square foot of commercial development, $3.63 per square foot of office development, and $4.82 per square foot of industrial development.

Other Municipal Code Provisions

Municipal Code Chapter 13.04 establishes City of St. Helena requirements for water service connections, water main extensions, water rates, procedures during water shortages, and other water-related requirements. Chapter 13.12 establishes water use efficiency guidelines, including water conservation measures required in new development.

Chapter 13.20 establishes requirements for sewer main connections, sewer charges, and other wastewater-related requirements.

State Integrated Waste Management Act

The California Integrated Waste Management Act requires cities and counties to promote source reduction, recycling, and safe disposal or transformation.

The California Integrated Waste Management Act of 1989 (Assembly Bill [AB] 939) was enacted to reduce, recycle, and reuse solid waste generated in the state to the maximum extent feasible. Specifically, AB 939 required city and county jurisdictions to identify an implementation schedule to divert 50 percent of the total waste stream from landfill disposal by the year 2000. AB 939 also requires each city and county to promote source reduction, recycling, and safe disposal or transformation. California cities and counties are required to submit annual reports to the California Integrated Waste Management Board (CIWMB) on their progress toward AB 939 goals.

State Climate Change Scoping Plan

In accordance with the California Global Solutions Act of 2006 (AB 32), the California Air Resources Board prepared the 2008 *Climate Change Scoping Plan*, which includes a series of recommendations regarding recycling and waste. Key recommendations include reducing methane emissions at landfills; increasing waste diversion, composting, and other beneficial uses of organic materials; and mandating commercial recycling (California Air Resources Board, 2008).

Draft Napa Countywide Community Climate Action Plan Framework

The Napa Countywide Community Climate Action Plan Framework (Napa County Transportation & Planning Agency, 2009) is a draft document prepared with the participation of city and county staff from all Napa County jurisdictions. The document is intended to guide and foster effective collaboration among government, business, and community organizations in achieving state greenhouse gas reduction targets.

The draft document identifies the following objective and actions for reducing solid waste:

Objective SW1: Achieve overall waste diversion of 75% to 90% by 2020.

ACTION SW1.1: Enact ordinances and create incentives to increase construction and demolition debris waste diversion from 75% to 90% by 2020.

ACTION SW1.2: Enact ordinances and create incentives to achieve organic (food and green) waste diversion of 75% by 2020, including waste diversion from restaurants and special events.

ACTION SW1.3: Create and support other programs, such as the Napa County Green Business Program, that help achieve the 75% to 90% overall waste diversion goal.

ACTION SW1.4: Adopt environmentally preferable purchasing policies and explore joint purchasing agreements with partner agencies, and local jurisdictions and businesses.

ACTION SW1.5: Establish collection services in all cities for segregated food waste from commercial sources and establish a local food composting facility.

ACTION SW1.6: Encourage home composting of organic waste.

Impacts and Mitigation Measures

Significance Criteria

Water

Appendix G of the CEQA Guidelines provides that a project would have a significant impact on water facilities if it would:

- Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or require new or expanded entitlements.

Wastewater

Appendix G provides that a project would have a significant impact on wastewater facilities if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments.

Solid Waste Disposal

Appendix G provides that a project would have a significant impact on solid waste disposal facilities if it would:

- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs; or
- Not comply with federal, state, or local statutes and regulations related to solid waste.

Relevant Policies

Water

The following relevant policies and implementing actions of the General Plan Update address water facilities and services:

LU1.2. Allow urban development to occur only within the Urban Limit Line. Urban services, such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line.

The Urban Limit Line may only expand when the amount of developable land within the Urban Limit Line is insufficient to implement the General Plan policies. Expansion outside the Urban Limit Line should first be considered in Urban Reserve Areas. Expansion into other areas outside the Urban Limit Line should be considered only when the proposed land use is found to further the goals and long-term objectives of the City and does not result in adverse impacts to adjacent uses in either the urban or rural areas.

LU2.6. 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.

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

ES3.B. Develop a revised design review and/or form-based code process for commercial and industrial uses that establishes objective design guidelines and restrictions, including guidelines and restrictions for landscaping and water use. Guidelines for non-residential water use should be commensurate with water conservation measures imposed on residential development. (Also see the following elements: Community Design, Topic Areas: 2; Land Use and Growth Management, Topic Area 3; and Economic Sustainability, Topic Area 3)

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.

PF1.2. Adopt and implement equitable water conservation measures for both residential and non-residential users as a means of extending the capabilities of the City's water supply.

PF1.3. Prohibit water service to new customers outside the City limits unless a potential threat to health and safety can be demonstrated.

PF1.4. Proactively reduce the City's commitment to provide water to uses outside the City limits.

PF1.A. Develop a long-term water management plan to identify deficiencies in the City's water supply, to determine the safe yield of the

groundwater basin and to develop and adopt measures to solve the projected deficiencies.

PF1.B. Prepare a water conservation plan that strengthens policies to reduce per capita water consumption. Potential measures include increasing equitable enforcement, such as implementing aggressive water rate tiers, water rationing and supply caps on households and businesses. In addition, offer incentives to property owners to install rainwater collection barrels and require water-efficient irrigation systems and drought-tolerant landscaping.

PF1.C. Conduct research into the potential impacts of climate change on the City's water supply, and develop a city-wide response plan.

PF1.D. Implement the following water system improvements:

- Replace obsolete, undersized water mains to provide more efficient circulation, higher pressures and lower pipe losses during heavy demand periods.
- Continue service of water mains to reduce unaccounted-for water losses.

PF1.E. Explore the possibility of using Lower Reservoir water to supplement the supply of groundwater wells and Bell Canyon Reservoir. Current use of the Lower Reservoir water is for non-potable uses only.

PF1.F. Continue to look for new water supply sources adequate to serve St. Helena's population into the future.

CD1.4. Strengthen water conservation measures that result in significant reductions in local water use and the protection of local water resources. Conservation measures may include on-site water reuse, water efficient landscaping and use of low-flow appliances, among others. (Also see the Climate Change Element, Topic Area 4)

CD1.B. Adopt a Green Building and Landscaping Ordinance that establishes green building and landscaping site design standards customized to meet the unique climatic context of the community. Partner with third party agencies, such as PG&E, to encourage the inclusion of energy-efficient systems in remodels and retrofits of existing buildings and residences. Offer incentives for improving energy-efficiency in existing buildings. Landscaping standards should limit impervious paving and identify standards and incentives that encourage the use of locally-propagated native, low-water, drought-tolerant planting and integrated pest management practices.

OS3.3. Promote water conservation by encouraging residents, business and industry to reduce water use.

OS3.D. Create a program for implementing water conservation efforts for households, businesses, industries, public infrastructure and agricultural activities. This program should include the following measures:

- Identify building, plumbing and landscaping standards and technologies that conserve water;
- Restrict water usage through metering or establishing designated watering days for the City's residences and businesses;
- Implement standards that require low-flow appliances and fixtures in all new developments;
- Encourage the use of drought tolerant and native vegetation in landscaping; and
- Regularly monitor and enforce water use restrictions through the use of fines and penalties for noncompliance.

OS3.E. Promote household and business participation in the City's efforts to increase the installation of drought tolerant and native plants in landscaping throughout the City. Potential measures include:

- Launching a citywide publicity program that details water conservation measures for use in local landscaping;
- Creating a City-sponsored demonstration garden that highlights water-wise landscaping and plant selections and sustainable gardening practices; and
- Working with local nurseries to encourage sales of drought tolerant and native plants, and water-wise irrigation systems.

(Also see the Public Facilities and Services Element for additional policies and implementing actions relating to water conservation).

CC4.3. Strengthen water conservation measures that result in significant reductions in local water use and the protection of local water resources. (Also see the Community Design Element, Topic Area 1) [Draft Napa Countywide Community Climate Action Plan Framework]

CC4.H. Adopt landscape ordinances that promote drought resistant plants, and limit or restrict lawns and other high-water-demand plants unless irrigated with reclaimed or grey water systems. [Draft Napa Countywide Community Climate Action Plan Framework, AN7]

CC4.I. Develop and adopt energy-saving and environmentally-sound domestic water conservation plans. [Draft Napa Countywide Community Climate Action Plan Framework, AN8]

HE5.2. Encourage energy and resource conservation.

HE5.H. Continue to apply Municipal Code provisions pertaining to water resources. The City will continue to require water-efficient landscaping for new residential and commercial construction, as well as implementing the Water Use Efficiency and Use Guidelines.

HE5.J. Explore feasibility of incorporating efficient on-site alternative wastewater facilities. The City will study options for on-site alternative wastewater facilities, including graywater reuse, recycling, and/or on-site

treatment. The City will then ensure that the local Municipal Code does not include regulations that may unnecessarily present barriers to implementing these technologies, amending the Municipal Code as appropriate. The City will explore establishing a local AB-811 program that will include water conservation technologies which contribute to energy conservation efforts (see HE5.E).

Wastewater

The following relevant policies and implementing actions of the General Plan Update address wastewater facilities and services:

LU1.2. Allow urban development to occur only within the Urban Limit Line. Urban services, such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line.

The Urban Limit Line may only expand when the amount of developable land within the Urban Limit Line is insufficient to implement the General Plan policies. Expansion outside the Urban Limit Line should first be considered in Urban Reserve Areas. Expansion into other areas outside the Urban Limit Line should be considered only when the proposed land use is found to further the goals and long-term objectives of the City and does not result in adverse impacts to adjacent uses in either the urban or rural areas.

LU2.6. 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.

LU2.D. Continue to require residential developers to contribute toward the provision of community facilities and services (e.g. recreation facilities and programs, education facilities, traffic and transportation facilities and services), consistent with State law requiring a nexus between project impacts and required mitigation.

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

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.

PF2.2. Require the extension of the City sewer to areas that are dependent upon septic systems prior to approval of future growth in these areas.

PF2.3. Reduce pumping costs and increase plant capacity by mitigating sewer system infiltration problems.

PF2.4. Increase sewer collection system efficiency by ensuring proper maintenance of sewer pipes.

PF2.A. Require all new units on parcels less than two acres, except those in Woodlands and Watershed Districts, to connect to the City sewer. All existing units within 200 feet of an existing sewer shall connect to the City sewer whenever feasible. Many of the residential units cannot expand without abandoning on-site septic systems and connecting to the sewer which may, in some cases, require an extension of the sewer.

PF2.B. Implement improvements to the sewer system that can reduce the frequency of system overloads, particularly during the rainy season. Improvements can include system upgrades and expansions to accommodate projected high volume flows during wet months.

PF2.C. Continue wastewater treatment system upgrades to reduce the number and scale of implementation constraints on the recycled water program. This can ensure that the system is ready for investment when funding for implementation becomes available.

PF2.D. Urban services such as sewer, water and storm drainage will only be extended to development within the Urban Limit Line. Exceptions will be permitted when undue hardship can be demonstrated, and when proposed improvements are not found to induce growth.

HE5.2. Encourage energy and resource conservation.

HE5.J. Explore feasibility of incorporating efficient on-site alternative wastewater facilities. The City will study options for on-site alternative wastewater facilities, including graywater reuse, recycling, and/or on-site treatment. The City will then ensure that the local Municipal Code does not include regulations that may unnecessarily present barriers to implementing these technologies, amending the Municipal Code as appropriate. The City will explore establishing a local AB-811 program that will include water conservation technologies which contribute to energy conservation efforts (see HE5.E).

Solid Waste Disposal

The following relevant policies and implementing actions of the General Plan Update address solid waste disposal facilities and services:

ES1.3. Ensure the long-term infrastructure needs and priorities of the community are met as part of an economic approach to economic vitality and sustainability. (Also see the Public Facilities and Services Element)

PF4.1. Increase recycling and composting as part of a coordinated waste reduction and management program.

PF4.A. Develop and adopt a Waste Management Master Plan to enhance existing waste management services and systems. Assess the system's capacity to serve current and future residents, recommend improvements and identify funding mechanisms and implementation partners. The plan should include landfill space plans and a food waste composting program that incorporates approaches for on-site food waste composting for

residences and businesses. Update the plan regularly to address changing needs and priorities.

PF4.B. Install recycling receptacles downtown and in all public parks and major streets. Ensure that the design and appearance of the receptacles fosters high quality community design, aesthetics and character.

CC3.1. Enhance recycling, composting and source reduction services for residential and commercial uses to support Napa County's countywide waste reduction goal to achieve overall waste diversion of 75 percent to 90 percent by 2020. (Also see the Public Facilities and Services Element, Topic Area 4) [Draft Napa Countywide Community Climate Action Plan Framework]

CC3.A. Establish programs and create incentives to achieve a 75 to 90 percent citywide construction and demolition debris waste diversion level by 2020. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW1]

CC3.B. Establish programs and create incentives to achieve a 75 percent organic (food and green) waste diversion level by 2020. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW2]

CC3.C. Establish citywide collection services for segregated food waste from commercial sources. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW3]

CC3.D. Encourage home composting of organic waste. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW4]

CC3.E. Create and support other programs, such as the Napa County Green Business Program and the green restaurant program, that help achieve the 75 to 90 percent overall waste diversion goal. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW5]

CC3.F. Adopt environmentally-preferable purchasing measures and explore joint-purchasing agreements with partner agencies and businesses. [Draft Napa Countywide Community Climate Action Plan Framework, Action SW6]

CC6.1. Ensure that the City leads by example in managing its local government operations while implementing the following policy directions:…

- Reducing solid waste from City and County operations and facilities. [Draft Napa Countywide Community Climate Action Plan Framework]

CC6.H. Establish a comprehensive, user-friendly recycling program that involves all City departments and facilities. Recover 70 to 85 percent of all waste generated in City operations. [Draft Napa Countywide Community Climate Action Plan Framework, LG8]

Impact Analysis

Less-than-Significant Impacts

Impacts of New or Expanded Water Facilities

Development projects allowed by the General Plan Update would include water lines and possibly other water facilities (pumping stations, etc.). In addition, the General Plan Update includes an implementing action (PF1.D) calling for continued service of existing water mains and replacement of obsolete, undersized water mains. The potential environmental impacts of development allowed by the General Plan Update are analyzed throughout Chapter 4 of this EIR. Installation of new or expanded water facilities (e.g., water mains) as part of this development would not result in specific environmental impacts beyond those identified in Chapter 4 that can be analyzed at the program level of detail provided in this EIR. Routine maintenance would not be subject to environmental review, but replacement of water mains would be subject to environmental review at the time that specific projects are proposed.

Impacts of New or Expanded Wastewater Facilities

Development projects allowed by the General Plan Update would include sewer lines and possibly other wastewater facilities (on-site wastewater treatment, etc.). In addition, the General Plan Update includes policies and implementing actions calling for:

- Extension of City sewer service to areas that currently depend on septic systems prior to approval of future growth in these areas (Policy PF2.2 and Implementing Action PF2.A). (These areas may include various locations within the Urban Limit Line, such as Main Street between Crinella Drive and Pratt Avenue, El Bonita Avenue, Mills Lane, the Vidovich property, Arrowhead Drive, Dean York Lane, and Palmer Drive.)

- Sewer system improvements (upgrades, expansions) to reduce the frequency of system overloads, particularly during the rainy season, and to facilitate the recycled water program (Policy PF2.3 and Implementing Actions PF2.B and PF2.C).

- Maintenance of sewer pipes (Policy PF2.4).

The potential environmental impacts of development allowed by the General Plan Update are analyzed throughout Chapter 4 of this EIR. Installation of new or expanded wastewater facilities (e.g., sewer lines) as part of this development would not result in specific environmental impacts beyond those identified in Chapter 4 that can be analyzed at the program level of detail provided in this EIR. Routine maintenance would not be subject to environmental review, but sewer system upgrades and any sewer extensions to areas currently using septic systems would be subject to environmental

review at the time that specific projects are proposed. The currently planned expansion of the wastewater treatment plant is proceeding separately from and during the planning period of the General Plan Update.

Impact on Landfill Capacity

Development allowed by the General Plan Update would increase the amount of solid waste generated, but this increase would not exceed the capacity of the Clover Flat Landfill. The Likely Buildout Scenario is expected to generate approximately 591 tons per year, or 2.3 tons per day, of solid waste. This amount of solid waste would not create any capacity problems at the Clover Flat Landfill (Abreu, 2010). The impact on landfill capacity would therefore be less than significant.

Compliance with Solid Waste Statutes and Regulations

The General Plan Update would not create any inconsistencies with federal, state, or local statutes or regulations related to solid waste. The General Plan Update contains numerous policies and implementing actions promoting recycling, composting, and other methods of managing and reducing waste, including development of a Waste Management Master Plan (Policies PF4.1, CC3.1, and CC6.1, and Implementing Actions PF4.A, PF4.B, CC3.A, CC3.B, CC3.C, CC3.D, CC3.E, CC3.F, and CC6.H). These provisions would help ensure that the city meets AB 939, *Climate Change Scoping Plan*, and related Napa County waste reduction targets. The impact in relation to solid waste statutes and regulations would therefore be less than significant.

Potentially Significant Impacts

The following impacts would be potentially significant and thus would warrant mitigation measures.

Impact UTILITIES-1: Development in accordance with the General Plan Update would increase the demand for water, creating the potential for insufficient water supplies. (Potentially Significant)

Under the Likely Buildout Scenario without water conservation measures, metered water demand is projected to increase from approximately 1,874 acre-feet per year to approximately 2,116 acre-feet per year by 2030, an increase of approximately 242 acre-feet per year. With the addition of “unaccounted-for water,” this increase in metered water demand would require a water supply of approximately 2,350 acre-feet per year by 2030, as shown in Table 4.R-5.

The total projected water use of 2,350 acre-feet per year would exceed the City’s existing “Normal Year” supply (2,000 acre-feet per year) by approximately 350 acre-feet per year. Development under the Likely Buildout Scenario therefore has the potential to result in insufficient water supplies.

TABLE 4.R-5
TOTAL PROJECTED WATER USE AT MILESTONE YEARS – LIKELY BUILDOUT SCENARIO

	Projected Water Use (acre-feet per year)			
Land Use	**2008**	**2010**	**2020**	**2030**
Residential	958	973	1,045	1,117
Commercial, Retail, Institutional	371	378	416	454
Industrial	154	154	154	154
Landscaping	84	84	84	84
Outside City Limits	307	307	307	307
Total Projected Metered Water Demand	**1,874**	**1,896**	**2,006**	**2,116**
Unaccounted-For Water (10%)	208	211	223	235
Total Projected Water Use (rounded)	**2,080**	**2,110**	**2,230**	**2,350**

SOURCE: West Yost Associates, 2010b

The General Plan Update contains policies and implementing actions for ensuring that adequate water service is available to new development (Policies ES1.3, PF1.1, PF1.3, and PF1.4, and Implementing Action PF1.F). Implementing Actions PF1.A, PF1.B, and PF1.C call for development of a long-term water management plan, a water conservation plan, and a citywide response plan for potential impacts of climate change on the city's water supply, respectively. The General Plan Update also contains provisions for promoting water conservation and water use restrictions (Policies PF1.2, CD1.4, OS3.3, CC4.3, and HE5.2, and Implementing Actions ES3.B, CD1.B, OS3.D, OS3.E, CC4.H, CC4.I, HE5.H, and HE5.J).

Mitigation Measures

Mitigation Measure UTILITIES-1a: The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update (West Yost Associates, 2010b):

- *Adopt a Water Conservation Program that includes the following actions:*
  - *Hire a full-time Water Conservation Coordinator;*
  - *Modify the water rate structure to increase high-tier rates;*
  - *Update the new construction offset program;*
  - *Fully develop the meter leak detection and monitoring program;*
  - *Establish an Irrigation Advisory Service and promote "Smart Irrigation Controllers";*
  - *Adopt new requirements for "ultra-efficient" plumbing fixtures for new development and rebates for existing users;*

- *Provide incentives for replacement of turf; and*
- *Provide incentives for roofwater catchment.*

This new implementing action could be expected to result in water savings of approximately 495 acre-feet per year, or approximately 23 percent of the projected metered water demand of 2,116 acre-feet per year (West Yost Associates, 2010b). This amount of water savings would reduce total projected water use to below the City's existing "Normal Year" supply of 2,000 acre-feet per year. This mitigation measure can be combined with Mitigation Measures UTILITIES-1b through UTILITIES-1d below to balance water supply and demand.

Mitigation Measure UTILITIES-1b: The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update:

- *The City of St. Helena shall not draw or sell any groundwater beyond that currently allowed until a safe yield has been identified through a study of the North Main Basin Aquifer by a qualified hydrogeologist.*[4]

Mitigation Measure UTILITIES-1c: The following policies and implementing actions[5] shall be included in the Public Facilities and Services Element of the General Plan Update to further water conservation efforts:

- *Adopt a Water Conservation Ordinance within two years of adoption of the General Plan Update that addresses requirements for water conservation within new developments, both residential and non-residential, and major reconstruction projects;*
- *Develop and adopt a water pricing rate structure, both residential and non-residential, that fully recovers the capital and operating costs of the systems and is specifically designed to promote conservation, with the goal of bringing the City's per resident and per employee water use to levels in line with other cities of comparable size and makeup;*
- *Develop and adopt a new approach to establishing "water conservation emergencies" that recognizes the complexity of the supply system and uses modeling of historical and future performance;*

[4] The City currently follows a practice of limiting groundwater use to 20 percent of the total water supply when the City is not in a Water Shortage Emergency Phase, or in a Phase I Water Shortage Emergency. The City also limits groundwater use to 30 percent of the total water supply during a Phase II or higher Water Shortage Emergency Phase. With this restriction removed, groundwater pumping could increase by up to 100 acre-feet per year during a Normal Water Supply Year under the Likely Buildout Scenario and up to 350 acre-feet per year under the Full Buildout Scenario. The City's current Water Shortage Emergency Phase demand reduction measures reduce potable water demands in dry years so that groundwater pumping would be less than the Normal Year groundwater pumping.

[5] Most of these were recommended by the Water and Sewer Subcommittee of the General Plan Update Steering Committee.

- *Maximize water purchases from the City of Napa until a monitoring system is in place to assess the long-term viability and recharge capability of the North Main Basin aquifer that supplies the City's wells;*

- *Limit approval of any new residential housing development requiring City water to the minimum necessary to meet State housing mandates as identified by the Regional Housing Needs Assessment (RHNA), and limit approval of market rate, single-family housing to projects that help to finance housing needed to meet State housing mandates for affordable housing;*

- *Aggressively promote adoption of "best practices" for reducing water usage in the existing housing stock;*

- *Require that all new residential housing projects incorporate "best practices" for minimizing water usage;*

- *Limit the rate of any future growth in residential and non-residential water usage to a level that can be offset by demonstrated, sustainable reductions in existing residential and/or non-residential water use;*

- *Limit any future non-residential development to projects that incorporate "best practices" for water conservation;*

- *Institute an ongoing process of mandatory audits of all existing non-residential water users to promote adoption of "best practices" for water conservation;*

- *Develop a program of low cost financing to assist existing non-residential water users to retrofit their facilities to implement "best practices" for water conservation;*

- *Provide the full-time capability in the City to implement and oversee water conservation policies and to pay for this capability out of water revenues rather than the General Fund;*

- *Collaborate with the Napa Flood Control District to establish an ongoing monitoring program to assess the long-term viability and recharge capability of the North Main Basin aquifer that supplies the City's wells;*

- *Retain a qualified hydrogeologist to evaluate the current performance of the North Main Basin Aquifer and pay for this position out of water revenues rather than the General Fund.*

Mitigation Measure UTILITIES-1d: The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update:

- *The City of St. Helena shall seek new sources of water, which may include an amended contract with the City of Napa to increase the available water supply and extend the contract beyond 2035.*

Mitigation Measures UTILITIES-1a through UTILITIES-1d would combine to balance water supply and demand, reducing the potential water demand impact to a level that would be less than significant. (Less than Significant)

Impact UTILITIES-2: Development in accordance with the General Plan Update would increase wastewater generation to a level that may exceed available wastewater treatment capacity and applicable wastewater treatment requirements. (Potentially Significant)

With development under the Likely Buildout Scenario, total estimated average dry weather flow would be approximately 0.7 million gallons per day (mgd). Average annual daily flow would be approximately 1.0 mgd, average wet weather flow would be approximately 1.5 mgd, and maximum wet weather flow would be approximately 4.2 mgd. Peak-hour wet weather flow would be approximately 5.8 mgd. Extension of City sewer service to areas that depend on septic systems prior to approval of future growth in these areas, as called for by General Plan Update Policy PF2.2 and Implementing Action PF2.A, would further increase the average dry weather flow and per capita wastewater generation rate (West Yost Associates, 2010a).

Current plans for expansion of the City's wastewater treatment plant would provide a total capacity of 0.8 mgd. This capacity would be sufficient to serve projected wastewater flows with development under the Likely Buildout Scenario. The NPDES tentative permit requires a treatment capacity expansion to 0.8 mgd by December 1, 2014. This term can be adjusted once the final permit is issued in September 2010.Based on projected wastewater flows, average dry weather flow into the wastewater treatment plant could be expected to exceed the plant's current capacity of 0.5 mgd by 2015 under the Likely Buildout Scenario (West Yost Associates, 2010a). Reduction in average dry weather flows (through water conservation and sewer improvements that reduce inflow and infiltration) would be necessary to address this potential short-term exceedance of capacity.

The General Plan Update contains policies for ensuring that adequate wastewater service is available to new development (Policies ES1.3 and PF2.1).

Mitigation Measures

Mitigation Measure UTILITIES-2a: The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update:

- *Reduce sewer system inflow and infiltration through repair and replacement of sewer pipes and removal of inflow sources.*

The inflow to the City wastewater treatment plant increases during rainfall events and during times of high groundwater levels. The City currently requires developers to mitigate the dry weather flow of proposed developments by repairing or replacing sewer lines and thereby reducing the summer infiltration. This program is only implemented when a development is proposed. The City should develop an aggressive repair and replacement program targeted on areas of inflow and infiltration concern that were identified in the sewer system master plan and previous documents.

Mitigation Measure UTILITIES-2b: The following new implementing action shall be included in the Public Facilities and Services Element of the General Plan Update:

- *Reduce average dry weather flow through development of a Water Conservation Program.*

Much of the inflow to the City wastewater treatment plant during the summer dry weather months is composed of inside potable water use. The Water Conservation Program recommended under Mitigation Measure UTILITIES-1a would also reduce average dry weather flow into the wastewater treatment plant. (Less than Significant)

References – Utilities and Service Systems

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West Yost Associates. 2010a. "Technical Memorandum No. 4, City of St. Helena Wastewater Flow Projections and Infrastructure." Memorandum from Jim Connell, West Yost Associates, to John Ferons, City of St. Helena. Draft. June 8.

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CHAPTER 5
Alternatives to the Project

5.1 Introduction

An EIR must evaluate a range of reasonable alternatives to the project that could feasibly attain most of the basic project objectives.

The State CEQA Guidelines (Section 15126.6) require that an EIR describe and evaluate the comparative merits of a range of reasonable alternatives to the project, or to the location of the project, that could feasibly attain most of the basic objectives of the project. The CEQA Guidelines further require that the discussion focus on alternatives capable of avoiding or substantially lessening any of the significant effects of the project, including the "No Project" Alternative.

The CEQA Guidelines generally define "feasible" to mean an alternative that is capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, technological, and legal factors. In addition, the following may be taken into consideration when assessing the feasibility of alternatives: site suitability, economic viability, availability of infrastructure, general plan consistency, other plans or regulatory limitations, jurisdictional boundaries, and the ability of the proponent to attain site control (CEQA Guidelines Section 15126.6(f)(1)).

The requirement that an EIR evaluate alternatives to the proposed project, or alternatives that address the location of the proposed project, is a broad one; the primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the proposed project. The description or evaluation of alternatives does not need to be exhaustive, and an EIR need not consider alternatives for which the effects cannot be reasonably determined and for which implementation is remote or speculative. An EIR need not describe or 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.

CEQA requires that an environmentally superior alternative be selected among the alternatives. In general, the environmentally superior alternative is defined as that alternative with the least adverse impacts on the project area and its surrounding environment. When the "No Project" Alternative is the

environmentally superior alternative, an EIR must also identify an environmentally superior alternative among the other alternatives (CEQA Guidelines Section 15126.6(e)(2)).

Two alternatives are evaluated in this chapter of the Draft Program EIR:

- Alternative 1: No Project
- Alternative 2: Reduced Development

CEQA requires that an environmentally superior alternative be selected among the alternatives.

The purpose of this chapter is to describe and evaluate the alternatives to the proposed General Plan Update. Alternatives are developed to reduce or eliminate the significant or potentially significant adverse environmental effects that would result from implementation of the proposed General Plan Update as identified in Chapter 4.

5.2 Factors in the Selection of Alternatives

The CEQA Guidelines recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)). The following factors were considered in identifying the reasonable range of alternatives to the project for this EIR:

- The extent to which the alternative would accomplish most of the basic goals and objectives of the project;
- The extent to which the alternative would avoid or lessen the identified significant and unavoidable environmental effects of the project;
- The feasibility of the alternative, taking into account site suitability, availability of infrastructure, general plan consistency, and consistency with other applicable plans and regulatory limitations;
- The extent to which an alternative contributes to a "reasonable range" of alternatives necessary to permit a reasoned choice; and
- The requirement of the CEQA Guidelines to consider a "No Project" Alternative and to identify an "environmentally superior" alternative in addition to the No Project Alternative (CEQA Guidelines Section 15126.6(e)).

Plan Objectives

As previously presented in Chapter 3, *Project Description*, the basic objectives of the St. Helena General Plan Update include the following:

- Identify an overall vision for the city;

- Establish a basis for judging whether specific development proposals and public projects are consistent with the vision identified in the General Plan;
- Guide City departments, other public agencies, and private developers in the design of projects that will enhance the character of the community, preserve and enhance critical environmental resources, and minimize hazards;
- Provide the basis for establishing and setting priorities for detailed plans and implementing programs, such as the City's Zoning Ordinance, specific and area plans, and the Capital Improvement Program;
- Provide estimates for projected population and employment growth to the year 2030;
- Protect the agricultural character of the city by focusing development in the developed portions of the city;
- Reduce congestion by providing alternative transportation choices, enhancing regional public transit connections, and achieving a better jobs/housing balance to reduce commuter trips;
- Promote healthy growth for the city at a rate that would not surpass infrastructure capabilities and available resources; and
- Increase the supply of affordable workforce housing to maintain St. Helena's quality of life and long-term economic sustainability.

Significant Impacts

The General Plan Update would result in the following significant and unavoidable impacts, which the selected alternatives are intended to avoid or reduce:

- Impact CULTURAL-2: Potential for disturbance to prehistoric archaeological sites that may contain human remains that have religious significance to local Native American representatives
- Impact TRANS-2: Increase in the number of vehicle miles traveled per service population
- Cumulative noise impacts
- Cumulative water impacts
- Cumulative wastewater impacts

Although not required by CEQA, the impact discussion of each alternative below also addresses each alternative's ability to avoid or reduce each of the other significant but mitigable impacts identified for the General Plan

Update. Each of these impacts and the relative effects of each alternative compared to the proposed General Plan Update are summarized in Table 5-1 at the end of this chapter.

5.3 Alternatives Selected for Consideration

With consideration given to the above factors for selection, the lead agency, the City of St. Helena, identified the following reasonable range of project alternatives to be addressed in this EIR:

- No Project Alternative
- Reduced Development Alternative

The City also thoroughly considered additional alternatives but rejected them as infeasible or not applicable. These alternatives are discussed in Section 5.6 below.

5.4 Description and Analysis of Alternatives

Throughout this section, a description of each alternative is followed by a discussion of its impacts and how they would differ from those of the proposed General Plan Update. As permitted by CEQA, the significant effects of the alternatives are discussed in less detail than are the effects of the project (CEQA Guidelines, Section 15126.6(d)). However, the analysis is conducted at a sufficient level of detail to provide decision-makers adequate information to fully evaluate the alternatives and to approve any of the alternatives without further environmental review.

Unless otherwise indicated, the impacts associated with the General Plan Update and each alternative are for year 2030 buildout conditions. Text is <u>underlined</u> where the alternative would reduce a potentially significant impact of the proposed General Plan Update.

Alternative 1 – No Project Alternative

Consideration of a No Project Alternative is required under CEQA.

Consideration of a No Project Alternative is required under CEQA. This alternative is analyzed consistent with the requirements of CEQA Guidelines Section 15126.6(e)(3)(A), which specifically states that when the project under evaluation is the revision of an existing land use or regulatory plan, the No Project Alternative will be the continuation of the existing plan.

Under this alternative, the proposed St. Helena General Plan Update would not be adopted and the existing (1993) General Plan would remain in effect. This would include General Plan amendments and amendments to the Zoning

Ordinance that have been approved by the City of St. Helena since adoption of the 1993 General Plan. Under the No Project Alternative, the city would operate under the existing General Plan, using it to guide the city's future development. Under this alternative, the proposed changes to the existing General Plan would not occur. The existing land use classifications would remain in effect (see Figure 4.A-2 in Chapter 4 of this EIR).

Buildout of the existing General Plan would result in approximately 3,810 housing units and a total population of 8,361 (ESA, 1993). With implementation of the city's Growth Management System, it was projected that the 2010 population would be 6,817 persons. Projected number of jobs under the existing General Plan is 5,620. Table 5-1 compares projected growth under the proposed General Plan Update and the existing General Plan.

TABLE 5-1
COMPARISON OF NO PROJECT ALTERNATIVE TO PROPOSED PROJECT

	Existing 2010 Conditions	Projected 2010 Conditions from 1993 General Plan	Projected Conditions of Proposed General Plan Update (Likely Buildout Scenario)
Population	6,100	8,361 (6,817 with Growth Management System)	7,021
Number of Housing Units	2,751 units	3,810 units	3,130 units
Employment	5,810 jobs	5,620 jobs	6,370 jobs

SOURCE: ESA, 1993 and 2010

As can be seen in Table 5-1, the existing General Plan would allow for increases in population and the number of housing units but a decrease in the number of jobs, compared to existing 2010 conditions.

Compliance with Project Objectives

This alternative would comply with many of the identified project objectives but would not meet the following two objectives identified for the proposed General Plan Update:

- Promote healthy growth for the city at a rate that would not surpass infrastructure capabilities and available resources; and
- Reduce congestion by providing alternative transportation choices, enhancing regional connections, and achieving a better jobs/housing balance to reduce commuter trips.

The proposed General Plan Update includes a number of policies aimed at the above objectives, while the existing General Plan does not. In addition, the existing General Plan does not include Mixed-Use designations to promote compliance with the above objectives by reducing dependency on the private automobile and increasing a mixture of land uses within the core of the city. The existing General Plan would also not comply with the objective to promote growth in balance with infrastructure capabilities, as it would include more residential development, which could affect water and wastewater demand even more significantly than the proposed General Plan Update. The existing General Plan, however, would promote a better jobs/ housing balance due to the provision of fewer jobs compared to the proposed General Plan Update, but would not necessarily provide the type of housing that would most effectively meet the needs of employees working within the City of St. Helena.

Impacts

Land Use and Planning

The proposed General Plan Update would result in less-than-significant impacts associated with potential conflicts with relevant land use planning documents within and adjacent to the City of St. Helena. Impacts of the No Project Alternative would also be less than significant given that it would retain existing consistency with relevant land use planning documents within and adjacent to the city. Like the proposed General Plan Update, the No Project Alternative would not result in significant conflicts among land uses.

Agricultural and Forestry Resources

Like the proposed General Plan Update, the existing General Plan could result in significant impacts related to the removal of important farmland that could be mitigated by new policies.

Also like the General Plan Update, the existing General Plan would allow development adjacent to farmlands that could result in conversion of farmlands to non-agricultural use.

Transportation and Circulation

Like the proposed General Plan Update, the No Project Alternative would result in significant impacts on local and regional roadway operations. However, the No Project Alternative does not include policies outlined in the General Plan Update that focus on reducing single occupancy vehicle trips, increasing multi-modal transportation, and providing infill/mixed use development; thus, it would result in more traffic congestion compared to the proposed General Plan Update.

The impacts of the existing General Plan on levels of service (LOS) at intersections and on road segments would be similar to those of the proposed General Plan Update. The General Plan Update would result in increased motor vehicle traffic that would cause unacceptable LOS at intersections and study roadway segments, using adopted significance criteria of the 1993 General Plan. The 1993 General Plan EIR also identified specific locations that would have unacceptable LOS (ESA, 1993).

Like the proposed General Plan Update, the existing General Plan would increase the number of vehicle miles traveled (VMT) per service population, but even more significantly due to the higher population of this alternative.

Air Quality

Like the proposed General Plan Update, air quality impacts of the existing General Plan would be less than significant except for the potential for odors to affect sensitive receptors. As for the proposed General Plan Update, this potential impact could be mitigated by the inclusion of a policy to address this issue. Air quality impacts associated with traffic from the existing General Plan could be more significant than the proposed General Plan Update because no new Mixed-Use designations were included in the existing General Plan.

Noise

The existing General Plan does not include some of the mixed-use sites identified in the General Plan Update and thus would result in fewer impacts associated with exposure to significant noise levels. The proposed General Plan Update would result in new noise-sensitive land uses – such as mixed-use projects along Main Street/SR 20, the Napa Valley Wine Train railroad line, and Oak Street – being exposed to unacceptable noise levels.

Traffic noise impacts of the existing General Plan would likely be similar to those of the proposed General Plan Update. The General Plan Update would result in a less-than-significant impact associated with traffic noise, except on Valley View Street between Spring Street and Olive Avenue. Like the General Plan Update, the No Project Alternative could result in increased traffic volumes that could result in some increases in traffic noise. However, based on the assumptions made in the existing General Plan, no significant noise impacts were identified in the 1993 General Plan EIR (ESA, 1993).

Aesthetics

The aesthetic impacts of the existing General Plan would be similar to those of the proposed General Plan Update. New development under the existing General Plan could result in new light or glare and extension of overhead

electrical lines and could affect visual conditions along State Route 29, as described for the General Plan Update.

Biological Resources

Like the proposed General Plan Update, the existing General Plan could result in the loss of bird nests in active use protected under the federal Migratory Bird Treaty Act and California Fish and Game Code.

Like the proposed General Plan Update, the existing General Plan could result in the loss of or modifications to wetlands and other waters and sensitive biological resources (e.g., sensitive natural communities and special-status species), requiring agency authorizations and appropriate mitigation.

Cultural and Historic Resources

Like the proposed General Plan Update, the existing General Plan could result in substantial adverse changes in the significance of historical resources.

Like the General Plan Update, the existing General Plan has the potential for disturbance to prehistoric archaeological sites that may contain human remains that have religious significance to local Native American representatives. This impact would be significant and unavoidable under both the existing General Plan and the General Plan Update.

Energy

Energy impacts of the existing General Plan could be similar to or greater than those of the proposed General Plan Update. The 1993 General Plan EIR did not evaluate energy impacts, and no significant impacts related to energy have been identified for the proposed General Plan Update. Unlike the existing General Plan, the proposed General Plan Update includes policies and implementing actions for green building and sustainability for reducing energy demands within the city; for example, the provision of mixed-use sites within the core of the city would reduce reliance on the private automobile. For this reason, the existing General Plan would have greater energy impacts than the proposed General Plan Update.

Greenhouse Gases

Like the proposed General Plan Update, the existing General Plan would be expected to result in less than significant greenhouse gas emissions. However, the existing General Plan does not include the Mixed-Use land use designations and the policies to reduce energy use and associated greenhouse gas emissions.

Geology and Soils

Like the proposed General Plan Update, the existing General Plan would allow development that would expose people or structures to substantial risk related to geologic or seismic hazards.

Hazards and Hazardous Materials

Like the proposed General Plan Update, the existing General Plan could result in development on former agricultural, commercial, or industrial properties and potential exposure to contaminants from historic hazardous materials use and release. Hazardous materials used or disposed by new development under the existing General Plan could also affect groundwater or surface water, as described for the General Plan Update.

Hydrology and Water Quality

As with the General Plan Update, operation of new development allowed under the existing General Plan could violate water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality.

As with the General Plan Update, construction and operation of development allowed under the existing General Plan could increase runoff that would result in flooding on-site or off-site, or exceed the capacity of the storm sewer systems.

Like the General Plan Update, the existing General Plan would allow housing within the 100-year flood hazard area.

Mineral Resources

Like the General Plan Update, the existing General Plan would not result in significant impacts on mineral resources.

Population and Housing

Like the General Plan Update, the existing General Plan would not result in significant impacts associated with the inducement of population growth or displacement of existing housing/residents. The No Project Alternative would result in more residential growth but less employment than the proposed General Plan Update.

Compared to the General Plan Update, the existing General Plan would contribute to a slightly reduced jobs/housing imbalance in St. Helena. By allowing less residential growth and more employment, the proposed General Plan Update has the potential to increase the imbalance between employment

and employed residents. The city has approximately two jobs for every employed resident which is almost double the jobs/resident ratio of the county (BAE, 2009). However, this is not a specific criterion of significance identified by CEQA, and is only mentioned herein because it relates to the need for commuting and associated traffic, air quality, and noise impacts.

Public Services

As with the proposed General Plan Update, development allowed by the existing General Plan could interfere with emergency response or evacuation, particularly due to traffic increases on SR 29.

Recreation

Compared to the General Plan Update, the existing General Plan could have a slightly greater impact on parks and recreational facilities because of the larger number of housing units it would allow. The city's existing parkland inventory does not meet applicable standards based on population. Like the proposed General Plan Update, the existing General Plan could result in increased use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

Utilities and Service Systems

The proposed General Plan Update would increase the demand for water and wastewater service that could place significant demands on treatment facilities if water conservation efforts were not implemented. This impact would be more significant with the existing General Plan due to the larger number of residential units as compared to the proposed General Plan Update.

Alternative 2 – Reduced Development Alternative

Under this alternative, a total of 320 housing units would be constructed at buildout of the General Plan, compared to 379 housing units under the Likely Buildout Scenario of the General Plan Update. Rather than an average of about 19 units per year, this alternative assumes an average of 16 units per year.[1] The City's Growth Management System limits residential development to 9 units per year but this does not apply to affordable housing. Thus, with this alternative, fewer units would be built and fewer affordable units per year may be developed. This alternative also does not include buildout of all pipeline projects. Commercial growth would be reduced by

[1] Specific locations of new development are assumed to be generally the same as the proposed General Plan Update but a lower density overall. No major site constraints were identified for specific sites proposed for development.

about 22 percent from that projected with the Likely Buildout Scenario, for a total of about 216,000 square feet of non-residential development over the planning period.

This alternative also assumes that all proposed policies of the General Plan Update would apply and would continue to serve as mitigation for potential impacts. Proposed roadway extensions would be the same as under the proposed General Plan Update. The policy changes recommended as mitigation measures in Chapter 4 of this EIR are also assumed to apply to this alternative.

Compliance with Project Objectives

This alternative would meet almost all of the identified project objectives. It would not meet the following objective identified for the proposed project:

- Increase the supply of affordable workforce housing to maintain St. Helena's quality of life and long-term economic sustainability.

By reducing overall residential development, and the associated provision of affordable housing within the city, this objective may be met only partially with this alternative.

Impacts

Land Use and Planning

Land use impacts of this alternative would be similar to those of the proposed General Plan Update.

Agricultural and Forestry Resources

Development under the Reduced Development Alternative could result in a reduced impact on important farmland, given that fewer units and less commercial square footage would be developed over the planning period. In addition, there may be less pressure to convert Urban Reserve Areas to urban uses with a reduced amount of growth.

Like the General Plan Update, this alternative would allow development adjacent to farmlands that could result in conversion of farmlands to non-agricultural use. This impact could be slightly reduced under the Reduced Development Alternative, but would depend on the location of new development. As with the General Plan Update, all new development would occur within the existing Urban Limit Line.

Transportation and Circulation

Like the proposed General Plan Update, the Reduced Development Alternative would result in significant impacts on local and regional roadway operations. However, the Reduced Development Alternative could result in slightly less traffic congestion compared to the proposed General Plan Update due to the reduced number of residential units and non-residential square footage under this alternative. Given that most of the impacts are associated with regional, rather than local, traffic, this impact reduction is not expected to be significant and would depend on where new development occurred.

Like the General Plan Update, this alternative would result in increased motor vehicle traffic that would result in unacceptable levels of service (LOS) at intersections and study roadway segments, using adopted significance criteria of the 1993 General Plan. Compared to the impact of the General Plan Update, the impact of this alternative on intersections and roadway segments would be similar but may be slightly reduced due to fewer residential units and less commercial square footage within the city.

Like the proposed General Plan Update, this alternative would increase the number of vehicle miles traveled (VMT) per service population. However, the proposed General Plan Update includes policies promoting multi-modal facilities and improvements for all new projects to reduce traffic.

Air Quality

As with the proposed General Plan Update, air quality impacts would be less than significant except for the need to include a policy related to potential odor-generating land uses. With reduced local traffic associated with a reduced population and reduced non-residential development, air emissions associated with vehicle use would be slightly reduced with this alternative.

Noise

Like the proposed General Plan Update, this alternative would result in new noise-sensitive land uses – such as mixed-use projects along Main Street/ State Route 29, the Napa Valley Wine Train railroad line, and Oak Street – being exposed to unacceptable noise levels.

The reduced traffic volume under this alternative could result in reductions in traffic noise, compared to the General Plan Update, but the reduction would be expected to be slight. The proposed General Plan Update would result in a less-than-significant impact associated with traffic noise except on Valley View Street between Spring Street and Olive Avenue. The Reduced Development Alternative could result in reduced traffic volumes (as compared to the proposed General Plan Update), given the reduced residential and non-residential development potential.

Aesthetics

The aesthetic impacts of this alternative would be similar to those of the proposed General Plan Update. New development under the Reduced Development Alternative could result in new light or glare and extension of overhead electrical lines and could affect visual conditions along State Route 29, as described for the General Plan Update.

Biological Resources

Like the proposed General Plan Update, the Reduced Development Alternative could result in the loss of bird nests in active use protected under the federal Migratory Bird Treaty Act and California Fish and Game Code.

Like the proposed General Plan Update, this alternative could result in the loss of or modifications to wetlands and other waters and sensitive biological resources (e.g., sensitive natural communities and special-status species), requiring agency authorizations and appropriate mitigation.

Cultural and Historic Resources

Like the proposed General Plan Update, the Reduced Development Alternative could result in substantial adverse changes in the significance of historical resources.

Like the proposed General Plan Update, this alternative has the potential for disturbance to prehistoric archaeological sites that may contain human remains that have religious significance to local Native American representatives. This impact would be significant and unavoidable under both the General Plan Update and the Reduced Development Alternative.

Energy

Energy use would be slightly reduced under the Reduced Development Alternative because of fewer residential units and less non-residential development within the city. Neither this alternative nor the proposed General Plan Update are expected to have significant impacts related to energy, however.

Greenhouse Gases

Like the proposed General Plan Update, greenhouse gas emissions associated with the Reduced Development Alternative would be less than significant. With a reduced population and fewer jobs within the city, a slight reduction in greenhouse gas emissions could be associated with this alternative.

Geology and Soils

Like the proposed General Plan Update, this alternative would allow development that would expose people or structures to substantial risk related to geologic or seismic hazards. The impact would be slightly reduced under the Reduced Development Alternative because fewer residential units and less non-residential square footage would be built under this alternative.

Hazards and Hazardous Materials

Like the proposed General Plan Update, this alternative could result in development on former agricultural, commercial, or industrial properties and potential exposure to contaminants from historic hazardous materials use and release. Hazardous materials used or disposed by new development under this alternative could also affect groundwater or surface water, as described for the General Plan Update.

Hydrology and Water Quality

As with the General Plan Update, operation of new development allowed under this alternative could violate water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality. The impact would be slightly reduced under the Reduced Development Alternative because fewer residential units and less non-residential square footage would be built within the city.

As with the General Plan Update, construction and operation of development allowed under this alternative could increase runoff that would result in flooding on-site or off-site, or exceed the capacity of the storm sewer systems. The impact would be slightly reduced under the Reduced Development Alternative because fewer residential units and less non-residential square footage would be built within the city.

Like the proposed General Plan Update, this alternative could allow housing to be constructed within the 100-year flood hazard area for lots of record. The impact could be slightly reduced under the Reduced Development Alternative due to fewer residential units within the city, depending on where new units were proposed.

Mineral Resources

No significant impacts on mineral resources would occur either under the proposed General Plan Update or the Reduced Development Alternative.

Population and Housing

Like the proposed General Plan Update, this alternative would not result in significant impacts associated with the inducement of population growth or displacement of existing housing/residents. The Reduced Development Alternative would result in less residential and non-residential growth.

With reduced non-residential growth, the jobs/housing imbalance within the city may be reduced slightly. While this is not a specific criterion of significance, it affects the need for commuting and associated traffic, air quality, and noise impacts.

Public Services

As with the proposed General Plan Update, development allowed under this alternative could interfere with emergency response or evacuation, particularly due to traffic increases on SR 29. The impact may be slightly reduced under the Reduced Development Alternative due to fewer residential units and less non-residential square footage within the city.

Recreation

Compared to the General Plan Update, this alternative could have slightly less impact on parks and recreational facilities because fewer residential units may be built. In addition, the amount of non-residential development would be reduced. The City's existing parkland inventory does not meet applicable standards based on population. Like the proposed General Plan Update, the Reduced Development Alternative could result in increased use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; however, the impact could be less significant under this alternative.

Utilities and Service Systems

Demand for water would be reduced with the Reduced Development Alternative, as compared to the proposed General Plan Update Likely Build Out, by about 300 acre-feet per year. This reduction would result in a projected water demand much more in line with the estimated water supply availability for 2030. Wastewater flows would also be reduced. As for the proposed General Plan Update, water conservation efforts would be critical as mitigation.

5.5 Environmentally Superior Alternative

Based upon the evaluation described in this section, the Reduced Development Alternative would be the environmentally superior alternative, given its reduced residential and non-residential development potential and associated environmental effects (as compared against the proposed General Plan Update). While this alternative would not eliminate the significant and unavoidable impacts of the proposed General Plan Update, the reduced development associated with this alternative would reduce some of the project-related impacts such as increased runoff, traffic, air quality, water demands, greenhouse gas emissions, and noise. However, the Reduced Development Alternative may not meet some of the key objectives and goals of the project, namely increasing the supply of affordable workforce housing to maintain St. Helena's quality of life and long-term economic sustainability. As mentioned above, the ratio of jobs to employed residents in the City of St. Helena is almost double the ratio of Napa County, resulting in many employees commuting into the city from outlying areas.

In conclusion, although the Reduced Development Alternative would result in all of the potentially significant impacts identified for the proposed General Plan Update, many of these impacts would be reduced (see Table 5-2). The Reduced Development Alternative would also reduce some of the less-than-significant impacts of the proposed General Plan Update. For these reasons, the Reduced Development Alternative is considered the environmentally superior alternative.

5.6 Alternatives Considered but Rejected

CEQA Guidelines Section 15126.6(c) requires an EIR to identify and briefly discuss any alternatives that were considered by the lead agency but were rejected as infeasible. In identifying alternatives, primary consideration was given to alternatives that would reduce significant impacts while still meeting project objectives. Alternatives that would have the same or greater impacts than the proposed project, or that would not meet most of the project objectives, were rejected from further consideration.

An off-site alternative was rejected because this would be infeasible for a general plan for a specific city. Further, this alternative would not meet the basic project objectives identified in Chapter 3, Project Description. For these reasons, an off-site alternative is considered infeasible pursuant to CEQA Guidelines 15126.6(c).

TABLE 5-2
COMPARISON OF POTENTIALLY SIGNIFICANT PROJECT IMPACTS TO IMPACTS OF ALTERNATIVES

Impact	Proposed Project (Proposed General Plan Update)	No Project Alternative (Existing General Plan)	Reduced Development Alternative
4.A Land Use and Planning			
None.			
4.B Agricultural and Forestry Resources			
AGRICULTURE-1: Development in accordance with the General Plan Update could result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.	PS	PS=	PS-
AGRICULTURE-2: By allowing urban development adjoining farmland and thereby creating the potential for land use conflicts, the General Plan Update could result in conversion of additional farmland to non-agricultural use.	PS	PS=	PS-
4.C Transportation and Traffic			
TRANS-1: Increased motor vehicle traffic would result in unacceptable level of service (LOS) at intersections and study roadway segments.	PS	PS=	PS-
TRANS-2: Buildout of the General Plan Update could increase the number of vehicle miles traveled (VMT) per service population.	SU	SU+	SU-
TRANS-3: Emergency access within St. Helena may be impacted by traffic congestion on State Route 29 and other local roads as addressed in Impact TRANS-1.	PS	PS=	PS-
4.D Air Quality			
AIR QUALITY-1: The General Plan Update does not provide adequate buffers between existing or new sources of odors and existing or new receptors.	PS	PS=	PS-
4.E Noise			
NOISE-1: New noise-sensitive land uses allowed by the General Plan Update may be exposed to unacceptable noise levels.	PS	PS-	PS=

PS: Potentially Significant Impact
SU: Significant Unavoidable Impact

=: Impact would be approximately the same as that of the proposed project
-: Impact would be less than that of the proposed project
+: Impact would be greater than that of the proposed project

TABLE 5-2 (Continued)
COMPARISON OF POTENTIALLY SIGNIFICANT PROJECT IMPACTS TO IMPACTS OF ALTERNATIVES

Impact	Proposed Project (Proposed General Plan Update)	No Project Alternative (Existing General Plan)	Reduced Development Alternative
4.E Noise (cont.)			
NOISE-2: Development in accordance with the General Plan Update would increase vehicle traffic, resulting in increases in traffic noise that would be substantial in some areas.	PS	PS=	PS-
4.F Aesthetics			
AESTHETICS-1: New development that could occur with implementation of the proposed General Plan Update could create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.	PS	PS=	PS=
AESTHETICS-2: New development could result in the extension of overhead electrical lines within the city and add to the existing "visual clutter" created by overhead electrical lines, thus degrading the visual quality of scenic areas within the city.	PS	PS=	PS=
AESTHETICS-3: While State Route 29 has not been formally designated as a Scenic Highway, the State of California has indicated that this route is eligible for such designation. Without a formal designation, new development along this important corridor of the city could affect visual conditions.	PS	PS=	PS=
4.G Biological Resources			
BIOLOGY-1: New development in accordance with the General Plan Update could inadvertently result in the loss of nests in active use protected under the federal Migratory Bird Treaty Act and California Fish and Game Code, unless appropriate construction avoidance measures are implemented.	PS	PS=	PS=
BIOLOGY-2: New development in accordance with the General Plan Update could result in loss of or modifications to wetlands and other waters, requiring agency authorizations and appropriate mitigation.	PS	PS=	PS=
BIOLOGY-3: New development in accordance with the General Plan Update could result in the loss of sensitive biological resources, including occurrences of sensitive natural communities and special-status species, requiring agency authorizations and appropriate mitigation.	PS	PS=	PS=

PS: Potentially Significant Impact
SU: Significant Unavoidable Impact

=: Impact would be approximately the same as that of the proposed project
-: Impact would be less than that of the proposed project
+: Impact would be greater than that of the proposed project

TABLE 5-2 (Continued)
COMPARISON OF POTENTIALLY SIGNIFICANT PROJECT IMPACTS TO IMPACTS OF ALTERNATIVES

Impact	Proposed Project (Proposed General Plan Update)	No Project Alternative (Existing General Plan)	Reduced Development Alternative
4.H Cultural Resources			
CULTURAL-1: Rehabilitation and adaptive reuse of significant historic buildings, and new development within historic districts or adjacent to historical resources, could result in substantial adverse changes in the significance of historical resources.	PS	PS=	PS=
CULTURAL-2: Development allowed under the General Plan Update has the potential to cause a substantial adverse change in significant archaeological and paleontological resources.	SU	SU=	SU=
4.I Energy			
None.	---	---	---
4.J Greenhouse Gases			
None.	---	---	---
4.K Geology and Soils			
GEOLOGY-1: Implementation of the General Plan Update would expose people or structures to substantial risk related to geologic or seismic hazards.	PS	PS=	PS-
4.L Hazards and Hazardous Materials			
HAZARDS-1: Development on former agricultural, commercial, or industrial properties may expose construction workers and future owners and users to contaminants from historic hazardous materials use and releases.	PS	PS=	PS=
HAZARDS-2: New development that could occur with implementation of the General Plan could affect groundwater or surface water resources through the use and disposal of hazardous materials.	PS	PS=	PS=
4.M Hydrology and Water Quality			
HYDROLOGY-1: Operation of development in accordance with the General Plan Update could violate water quality standards or waste discharge requirements, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality.	PS	PS=	PS-

PS: Potentially Significant Impact
SU: Significant Unavoidable Impact

=: Impact would be approximately the same as that of the proposed project
-: Impact would be less than that of the proposed project
+: Impact would be greater than that of the proposed project

TABLE 5-2 (Continued)
COMPARISON OF POTENTIALLY SIGNIFICANT PROJECT IMPACTS TO IMPACTS OF ALTERNATIVES

Impact	Proposed Project (Proposed General Plan Update)	No Project Alternative (Existing General Plan)	Reduced Development Alternative
4.M Hydrology and Water Quality (cont.)			
HYDROLOGY-2: Construction and operation of development in accordance with the General Plan Update could substantially alter existing drainage patterns, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on site or off site, or create or contribute runoff water that would exceed the capacity of existing or planned storm sewer systems.	PS	PS=	PS-
HYDROLOGY-3: Development in accordance with the General Plan Update could place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, or place structures within a 100-year flood hazard area that would impede or redirect flood flows.	PS	PS=	PS-
4.N Mineral Resources			
None.	---	---	---
4.O Population and Housing			
None	---	---	---
4.P Public Services			
SERVICES-1: Development in accordance with the General Plan Update could interfere with emergency response or evacuation, particularly due to traffic increases on Highway 29.	PS	PS=	PS-
4.Q Recreation			
RECREATION-1: Development in accordance with the proposed General Plan Update could increase the use of existing neighborhood or regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, particularly since the City's existing parkland inventory does not meet applicable standards for the amount of parkland per 1,000 residents.	PS	PS+	PS-

PS: Potentially Significant Impact
SU: Significant Unavoidable Impact

=: Impact would be approximately the same as that of the proposed project
-: Impact would be less than that of the proposed project
+: Impact would be greater than that of the proposed project

TABLE 5-2 (Continued)
COMPARISON OF POTENTIALLY SIGNIFICANT PROJECT IMPACTS TO IMPACTS OF ALTERNATIVES

Impact	Proposed Project (Proposed General Plan Update)	No Project Alternative (Existing General Plan)	Reduced Development Alternative
4.R Utilities and Service Systems			
UTILITIES-1: Development in accordance with the General Plan Update would increase the demand for water, creating the potential for insufficient water supplies.	PS	PS+	PS-
UTILITIES-2: Development in accordance with the General Plan Update would increase wastewater generation to a level that may exceed available wastewater treatment capacity and applicable wastewater treatment requirements.	PS	PS+	PS-

SOURCE: ESA, 2010

PS: Potentially Significant Impact
SU: Significant Unavoidable Impact

=: Impact would be approximately the same as that of the proposed project
-: Impact would be less than that of the proposed project
+: Impact would be greater than that of the proposed project

References

Bay Area Economics. 2009. *St. Helena General Plan Update Housing Element Goals, Policies, and Five-Year Action Plan (Final)*. September.

ESA. 1993. City of St. Helena General Plan Update Environmental Impact Report. March.

CHAPTER 6
Growth-Inducing and Cumulative Effects

6.1 Growth-Inducing Effects

Growth-inducing effects can occur when a project fosters economic or population growth, or construction of additional housing, either directly or indirectly in the surrounding environment. The removal of obstacles to growth can also result in growth inducement. Some of the following are examples of projects that can entail growth-inducing effects:

- Extension of water/wastewater lines across undeveloped lands;
- Significant commercial development in an area with limited housing;
- Significant residential development in an area with limited commercial uses;
- Removal of lands from existing Williamson Act contracts;
- Expansion of Urban Limit Lines or Urban Reserve Areas into undeveloped lands; and
- Expansion of major facilities that serve development such as water and wastewater treatment facilities.

Growth-inducing effects can occur when a project fosters economic or population growth or construction of additional housing.

New development that would be fostered by the proposed St. Helena General Plan Update would occur within the existing developed portion of the City of St. Helena or immediately adjacent to existing development. Thus, no major water or wastewater line extensions across undeveloped lands would be required.

The proposed General Plan Update would generally balance residential and commercial growth within the city, and existing facilities would also serve to meet the needs of future residents. Thus, significant growth inducement would not result from projected residential or employment-generating land uses.

New development would not require the removal of lands from Williamson Act contracts, which could have the indirect impact of inducing new development on acreage no longer carrying reduced tax benefits associated with such contracts. While some lands slated for new development are in agricultural use (e.g.,

vineyards), only 0.83 acres are designated or zoned for agricultural use and these lands are within the Urban Limit Line of the city and immediately adjacent to existing development. No expansion of the Urban Limit Line is proposed as part of the General Plan Update, and all new development would occur within the existing city limits. The three areas already designated in the 1993 General Plan as "Urban Reserve Areas" (see Chapter 3, Project Description, of this EIR) are all within the existing city limits but immediately adjacent to the Urban Limit Line.[1] These three areas would continue to be designated for agricultural use and would be considered for development after areas within the Urban Limit Line are developed and if additional acreage is needed for urban uses. No significant growth-inducing impacts would occur from the continued designation of these Urban Reserve Areas because of their acreage, the projected timing and limitations on the use of these lands, and the fact that they are immediately adjacent to existing development and within the city limits.

No major water or wastewater expansions are proposed as part of the General Plan Update. Thus, no growth inducement would occur in relation to such expansions. The wastewater plant expansions discussed in Section 4.R of this EIR were planned separately from the General Plan Update and are not expected to induce any growth beyond that identified for the Likely Buildout Scenario.

6.2 Significant Irreversible Changes

Significant irreversible changes can include land use changes, use of nonrenewable resources, and damage from environmental accidents.

CEQA Guidelines Section 15126.2(c) specifies that the EIR shall discuss the significant irreversible environmental changes associated with a project relevant to land use changes, nonrenewable resources, and environmental accidents.

6.2.1 Changes that Commit Future Generations to Similar Uses

By allowing specified land use development within the City of St. Helena, the proposed General Plan Update would alter some of the existing uses within the Urban Limit Line but would continue to protect agricultural areas outside of the Urban Limit Line (but within the city limits). It is reasonable to anticipate that future projects would not introduce land uses that could not be changed or "reversed" in the future. Thus, the project would not commit future generations to similar uses. However, it could be said that once areas in agricultural use within the city are converted to new development, the chances of that land reverting to agricultural use are slim. It is more likely that any

[1] The City of St. Helena includes an Urban Limit Line that is within the city limits.

changes would be in types of development or intensity of development. However, it should be noted that 48 percent of the land area within the city limits is protected by agricultural designations in the proposed General Plan Update. The Urban Limit Line, within which new development would occur, would continue to protect these agricultural areas.

6.2.2 Use of Nonrenewable Resources

The General Plan Update would allow for development that would consume natural resources (gasoline, sand and gravel, asphalt, oil, etc.) during construction activities. During operation of new developments, energy would be consumed for lighting, heating/cooling, and transportation. Neither the construction nor operation of projects associated with implementation of the proposed General Plan Update would consume nonrenewable resources in amounts substantially different from or greater than typical urban development or similar land uses.

6.2.3 Irreversible Damage from Environmental Accidents

The use, storage, handling, and transport of hazardous materials are strictly regulated by federal and state laws. Implementation of the proposed General Plan Update could result in unexpected accidents involving hazardous materials, but all developments would be required to comply fully with applicable regulations and would not be expected to result in significant impacts resulting from accidental release of hazardous materials during construction or operations.

6.3 Cumulative Impacts

"Cumulative impacts" are the incremental impacts of the General Plan Update when added to closely related past, present, and reasonably foreseeable future projects.

This section of the EIR addresses cumulative impacts associated with the incremental impact of the General Plan Update when added to closely related past, present, and reasonably foreseeable future projects.

As a Program EIR on a General Plan Update, this EIR addresses cumulative impacts of growth within the City of St. Helena. However, the main emphasis of the analysis in Chapter 4 is upon the "Likely Buildout Scenario" projected to the year 2030. As described in Chapter 3, there is also a "Full Buildout Scenario" that could be considered. For purposes of this EIR, the Full Buildout Scenario is considered the cumulative condition because, due to the City's restrictive growth management program, it is highly unlikely that all land uses allowed by the General Plan Update would be fully built out by 2030.

Under the Full Buildout Scenario, full development of the nine "Change Areas" would occur, and full buildout of the Key Housing Opportunity Sites and Pipeline Projects would also take place. This development would result in

891 new residential units and 2,165 new residents in the city, and 338,208 new square feet of commercial square footage providing 711 new jobs (see Tables 3-3 and 3-4 in Chapter 3).

The Full Buildout Scenario is evaluated in the cumulative impact analysis that follows. The cumulative analysis also assumes potential development of the Urban Reserve Areas identified in the proposed General Plan Update (see Figure 3-5).

Napa County was contacted to determine if proposed or pending projects were to be located in the vicinity of St. Helena but within the County's borders outside the city limits. The only potential projects identified were the possible redevelopment of the outlet mall located to the north of St. Helena adjacent to State Route 29 to include a new hotel, and development of the Ecovillage project in the unincorporated community of Angwin located to the northeast of St. Helena. The hotel project, should it occur, is proposed to include 50 rooms (Gitelman, 2010) and would be about 4 miles north of St. Helena. The Ecovillage project would include 380 new residential units and 13,500 new square feet of commercial uses within the community of Angwin, about 8.5 miles northeast of St. Helena. Another project is the proposed Enchanted Resorts project in the City of Calistoga. This project is about 8.5 miles north of St. Helena and would include 33 homes, 110 hotel units, and spa facilities such as pool and restaurant (City of Calistoga, 2010).

6.3.1 Land Use and Planning

The land use and planning-related impacts of the Full Buildout Scenario would be the same as those described for the Likely Buildout Scenario in Section 4.A, Land Use and Planning, of this EIR. The project would not contribute to any cumulative land use impacts associated with nearby County projects or City of Calistoga projects.

6.3.2 Agricultural and Forestry Resources

The less-than-significant impacts of the Full Buildout Scenario would be the same as those described for the Likely Buildout Scenario in Section 4.B, Agricultural and Forestry Resources, of this EIR.

The potentially significant impacts of the Full Buildout Scenario would also be the same as described for the Likely Buildout Scenario in Section 4.B. However, the Full Buildout Scenario could lead to development of the "Urban Reserve Areas" that were also identified in the 1993 General Plan. Figure 3-5 in Chapter 3, Project Description, of this EIR illustrates the locations of the three Urban Reserve Areas identified in the General Plan Update. The General Plan Update states that "Urban Reserve Areas can be

considered for urban development after urban sections within the Urban Limit Line are developed and if additional land is needed for urban uses" (City of St. Helena, 2010). The General Plan Update designates the Urban Reserve Areas as Agriculture.

The Urban Reserve Areas shown in Figure 3-5 contain Prime Farmland or Farmland of Statewide Importance ("Farmland"), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program (see Figure 4.B-2). Development of the Urban Reserve Areas could therefore increase the number of acres of "Farmland" that would be converted to non-agricultural use (see Impact AGRICULTURE-1 in Section 4.B of this EIR). Existing and proposed policies would reduce this cumulative impact to less than significant.

Removal of agricultural land would not occur for the County hotel project or the Enchanted Resorts project in Calistoga. Since there are no significant proposed or pending projects in the unincorporated area immediately surrounding St. Helena, the General Plan Update would not combine with other nearby projects elsewhere in the county to create cumulative impacts on agricultural or forestry resources. However, for the larger geographic area, the project could contribute to cumulative removal of agricultural lands associated with the Ecovillage project. The project's contribution to this cumulative impact would be mitigated by policies by the General Plan Update.

6.3.3 Transportation and Traffic

The less-than-significant impacts of the Full Buildout Scenario would be the same as or similar to those described for the Likely Buildout Scenario in Section 4.C of this EIR. The potentially significant impacts of the Full Buildout Scenario would also be the same as or similar to those described above for the Likely Buildout Scenario in Section 4.C.

In addition to land use changes within St. Helena, the traffic analysis for the Full Buildout Scenario takes into account planned development patterns set forth in the Napa County General Plan and potential future development within the surrounding communities. The traffic analysis accounts for this additional development because it would generate traffic on regional roadways – particularly on SR 29, which extends through St. Helena. Cumulative conditions would include planned transportation improvements being developed by the Napa County Transportation and Planning Agency.

Buildout of the land uses and changes to the roadway network envisioned in the St. Helena General Plan Update would contribute traffic to intersections and roadway segments that are expected to operate at unacceptable levels of service, including roadway segments on SR 29.

Full buildout of the proposed General Plan Update would increase the cumulative amount of traffic on SR 29 in the northbound and southbound directions, though most of the growth in traffic on SR 29 is due to regional travel patterns outside of the control of the city. Options for mitigating traffic impacts on SR 29 are limited, because of the constrained right-of-way, the high cost, and the lack of political inclination to provide additional capacity beyond the existing configuration.

Implementation of the policies and actions contained in the proposed General Plan Update would reduce impacts on SR 29. Specific policies and actions that would reduce impacts are CR1.4, CR1.5, CR1.11, CR1.12, CR6.2, CR1.H, CR1.I, and CR 1.K.

Additional funding, if available (e.g., from a city or countywide transportation sales tax), could also be used to pay for improvements to SR 29 that seek to manage congestion through the City of St Helena and along the SR 29 corridor. Implementation of the proposed General Plan Update, together with regional improvements to the SR 29 corridor when funding becomes available, would reduce congestion in the city, although the impact would not be reduced to a less-than-significant level. Therefore, this impact is considered cumulatively considerable and **significant and unavoidable**.

6.3.4 Air Quality

The San Francisco Bay Area is currently designated as a nonattainment area under federal and state air quality standards for ozone and $PM_{2.5}$. The region is also nonattainment for PM_{10} under state ambient air quality standards. Past, present, and future development projects contribute to regional air quality impacts on a cumulative basis. Air pollution is largely a cumulative impact. Typically, and in the case of the proposed General Plan Update, there is no single project sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts.

In developing thresholds of significance for air pollutants, the Bay Area Air Quality Management District (BAAQMD) considered the emission levels at which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions or effect on emissions would be cumulatively considerable, resulting in significant adverse air quality impacts on the region's existing air quality conditions. Thus, the evaluation in Section 4.D, Air Quality, of this EIR accounts for cumulative air emissions, and additional analysis of cumulative impacts is unnecessary. Similarly, the evaluation of community risk and hazards associated with traffic on State Route 29 accounts for cumulative traffic conditions. The predictions of community risk and hazards from air

pollution and TACs are based on cumulative conditions, and no significant hazards were identified.

6.3.5 Noise

Under the Full Buildout Scenario, cumulative noise levels in areas of St. Helena that are planned for development may be substantially increased over existing conditions. Compared to the Likely Buildout Scenario, the Full Buildout Scenario would produce an additional 512 housing units, 61,104 more square feet of commercial uses, and 151 more jobs. Additional housing, commercial land uses, and jobs would be expected to result in greater traffic volumes along roadways serving those particular sites. Additional traffic on regional roadways such as SR 29 would also contribute traffic noise.

Noise increases within the community would be a function of the existing and future traffic volumes along the roadways. The greatest increases in traffic noise would be expected in developing areas where existing traffic volumes are relatively low. Conversely, traffic noise increases resulting from cumulative development would be less along busy thoroughfares such as Main Street/SR 29.

As identified under the Likely Buildout Scenario, substantial traffic noise increases could be expected on existing low-volume roadways that would be subject to additional traffic as a result of cumulative development. Mitigation Measure NOISE-2, which would mitigate the Likely Buildout Scenario's impact on Valley View Street housing to a less-than-significant level, could also be applied to other roadway segments where substantial noise increases would occur. Given the uncertainties regarding the areas where noise increases could occur, the anticipated noise level increases, and other non-acoustic considerations, it may not be possible to mitigate substantial cumulative traffic noise increases to a less-than-significant level. The cumulative traffic noise impact would therefore be **significant and unavoidable**.

Due to the distance of the other cumulative projects in Calistoga and the County (Ecovillage and hotel project) from the City of St. Helena, cumulative noise impacts of the project in association with these projects would not be significant. Cumulative noise impacts associated with traffic passing through St. Helena have been evaluated based on the traffic data used in the analysis that accounted for cumulative projects.

6.3.6 Aesthetics

Under the Full Buildout Scenario, aesthetic impacts would be similar to those identified for the Likely Buildout Scenario. Proposed policies and the City's design review process would be adequate to mitigate cumulative aesthetic

impacts. The same recommended mitigation measures would apply to the cumulative aesthetic impacts and no additional significant impacts would occur. Due to the distance of the other cumulative projects in Calistoga and the County (Ecovillage and hotel project) from the City of St. Helena, cumulative aesthetic impacts of the project in association with these projects would not be significant.

6.3.7 Biological Resources

The overall cumulative effect of development is dependent on the degree to which significant vegetation and wildlife resources are protected or mitigated as part of individual developments. This includes preservation of areas of sensitive natural communities such as valley oak woodland, riparian woodland, and native grasslands, protection of essential habitat for special-status plant and animal species, and avoidance of wetlands. Further environmental review of any specific development proposals in St. Helena should generally serve to ensure that important biological and wetland resources are identified, protected, and properly managed, and should serve to prevent any significant adverse development-related impacts.

Cumulative development contributes to an incremental reduction in the amount and connectivity of existing natural communities and wildlife habitat. However, most of the anticipated development associated with implementation of the General Plan Update – including the Full Buildout Scenario – would occur in locations that are already urbanized or have been extensively altered by past agricultural uses, and therefore have only limited wildlife habitat values. Potential impacts on wetlands and other sensitive biological resources would be addressed through avoidance and adequate mitigation, and any future tree loss would be at least partially addressed through replacement plantings. Conformance with policies and implementation actions in the General Plan Update would serve to address any significant impacts on biological resources, and the project's contribution to potential cumulative impacts would be considered less than significant. The impacts of the Full Buildout Scenario would be similar to those described for the Likely Buildout Scenario in Section 4.G, Biological Resources, of this EIR.

Cumulative impacts to nesting raptors and other special status species created by the project in conjunction with County and City of Calistoga projects could be significant but would be mitigated, for the project, by General Plan Update policies. The same would apply to cumulative impacts related to loss of wetlands.

6.3.8 Cultural Resources

The proposed General Plan Update has the potential to contribute to cumulative impacts on cultural resources. The impacts of the Full Buildout Scenario would be similar to those described for the Likely Buildout Scenario in Section 4.H, Cultural Resources, of this EIR.

Each discretionary development proposal received by the City undergoes environmental review pursuant to CEQA. If there is a potential for significant impacts on cultural resources, the City would require an investigation to determine the nature and extent of the resources and identify appropriate mitigation measures. Development projects therefore are not expected to result in significant impacts on cultural resources, provided that appropriate evaluations are conducted on a case-by-case basis to determine whether the resources are "historical resources" or "unique archaeological resources," and appropriate mitigation measures, including but not limited to preservation in place, capping, or data recovery, are implemented prior to development. Thus, implementation of the General Plan Update and the mitigation measures identified in Section 4.H of this EIR, along with project-specific mitigation measures and application of appropriate sections of the St. Helena Municipal Code, would be expected to reduce potential cultural resources impacts to less-than-significant levels except for the potential **significant, unavoidable** impact associated with unknown discoveries of human remains that may have religious significance to Native American representatives (to be determined on a case-by-case basis).

The project is not expected to contribute to cumulative cultural resource impacts in association with County or City of Calistoga projects or to require additional mitigation measures beyond what has been recommended for the project.

6.3.9 Energy

Energy use within the city would increase with the Full Buildout Scenario and with development of the city's Urban Reserve areas. The number of new residential units would increase about 25 percent above that projected for the Likely Buildout Scenario and commercial square footage would increase about 20 percent above that projected for the Likely Buildout Scenario. Thus, overall energy use in the city could increase approximately 20 to 25 percent. As with the Likely Buildout Scenario, cumulative impacts would not be significant given the proposed policies incorporated into the General Plan Update. The project would contribute to overall cumulative increases in energy use in association with County and City of Calistoga projects, but the project's contribution to this cumulative impact would be

mitigated by policies incorporated into the General Plan Update. In addition, the County has initiated the "Community Climate Action Framework" with the ultimate goal of reducing energy use and associated greenhouse gas emissions within the entire County.

6.3.10 Greenhouse Gas Emissions

GHG emissions contribute to global climate change on a cumulative basis. No single land use project or plan could generate enough GHG emissions to noticeably (or measurably) change the global average temperature. The combination of GHG emissions from past, present, and future projects contribute substantially to the phenomenon of global climate change and its associated environmental impacts. The BAAQMD CEQA Air Quality Thresholds of Significance state that land use sector projects that comply with the GHG thresholds would not be "cumulatively considerable" because they would be helping to solve the cumulative problem as a part of the AB 32 process.

In addition, the Full Buildout scenario was evaluated for GHG emissions (see Table 4.J-3). At 2030, full buildout would produce 5.2 metric tons per capita per year, which is slightly more efficient than the Likely Buildout scenario and below the BAAQMD threshold of 6.6 metric tons of CO2e. The growth under the General Plan would be more efficient in terms of having lower GHG emissions per capita. Thus, overall emissions would become lower (although the overall emissions total for St. Helena would increase). As a result, cumulative GHG impacts would not be significant.

Cumulative GHG impacts created by County and City of Calistoga projects would add to any GHG increases created by the project. The County has initiated the "Community Climate Action Framework" with the ultimate goal of reducing energy use and associated greenhouse gas emissions within the entire County. This effort would ensure that cumulative GHG impacts are less than significant.

6.3.11 Geology and Soils

Potential cumulative impacts related to geology, soils, and seismicity do not extend far beyond a General Plan's boundaries, since geological impacts are confined to discrete spatial locations and do not generally combine to create an extensive cumulative impact condition. The exception to this would occur where a large geologic feature (e.g., fault zone, massive landslide) might affect an extensive area, or where the development effects from the project could affect the geology of an off-site location. These circumstances would not occur as a result of implementation of the St. Helena General Plan Update. The cumulative increases in population and development that would result from implementation of the Full Buildout Scenario would increase the

number of residents and employees exposed to the region's known seismic hazards; however, conformance with the California Building Code would preserve building integrity during a seismic event, and other regulatory measures would reduce geohazards impacts to a less-than-significant level. As a result, cumulative impacts would be minimized and would be less than significant.

Due to the distance of the other cumulative projects in Calistoga and the County (Ecovillage and hotel project) from the City of St. Helena, cumulative geological and soil impacts of the project in association with these projects would not be significant.

6.3.12 Hazards and Hazardous Materials

The hazardous materials and other public health and safety issues identified for the General Plan Update are generally site-specific. The impacts of the Full Buildout Scenario would be similar to those described for the Likely Buildout Scenario in Section 4.L, Hazards and Hazardous Materials, of this EIR. Due to the distance of the other cumulative projects in Calistoga and the County (Ecovillage and hotel project) from the City of St. Helena, cumulative hazardous materials impacts of the project in association with these projects would not be significant.

6.3.13 Hydrology and Water Quality

The impacts of the Full Buildout Scenario would be similar to those described for the Likely Buildout Scenario in Section 4.M, Hydrology and Water Quality, of this EIR. The increased runoff from the Ecovillage project would be largely within the watershed of the Napa River and could contribute to flood levels within the Napa River downstream of St. Helena. The same would apply to the Enchanted Resorts project in the City of Calistoga. Each of these projects would require mitigation to reduce offsite runoff during peak storm events (i.e., onsite detention basins, etc.). The project policies would reduce the project's contribution to this cumulative impact to a less-than-significant level.

6.3.14 Mineral Resources

Cumulative impacts related to mineral resources would not be significant and would be similar to those identified for the Likely Buildout Scenario in Section 4.N, Mineral Resources, of this EIR. County and City of Calistoga projects are not expected to result in cumulative impacts to mineral resources given their land use designations.

6.3.15 Population and Housing

The impacts of the Full Buildout Scenario would be similar to those described for the Likely Buildout Scenario in Section 4.O, Population and Housing, of this EIR.

The Full Buildout Scenario would induce population growth in the area by allowing for residential development that would add an estimated 2,165 residents and 891 new housing units in the city by 2030. The 2,165-person population increase would exceed the ABAG-projected population increase for the 20-year time period between 2010 and 2030 (see Table 4.O-2 in Section 4.O).[2] This impact is considered less than significant, however, for the reasons described for the Likely Buildout Scenario in Section 4.O.

Development under the Full Buildout Scenario could result in the displacement of existing residents or housing units. This impact is considered less than significant, however, for the reasons described for the Likely Buildout Scenario in Section 4.O.

County and City of Calistoga projects would not result in any displacement of residents. Some cumulative growth inducement would occur in this portion of Napa County by the combined impact of the City's General Plan Update in conjunction with nearby County and City of Calistoga projects. The City's contribution to this cumulative impact would be offset by proposed General Plan Update policies and the fact that all new growth for the project would occur within the existing city limits.

6.3.16 Public Services

Need for New or Expanded Fire Protection and Police Facilities

Increases in resident and employee population under the Full Buildout Scenario would increase demands for fire protection and police services but are not currently expected to create a need for new or expanded facilities, for the reasons discussed for the Likely Buildout Scenario in Section 4.P, Public Services, of this EIR. County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

[2] ABAG projections may be low because they are based on past trends. In the past decade. St. Helena has had very limited residential growth. The Regional Housing Needs Assessment (RHNA) is a plan for housing growth to meet the needs of employees and to correct the existing jobs/housing imbalance. The RHNA is addressed in the City's Housing Element that was approved in 2009.

Need for New or Expanded School Facilities

Based on typical student generation rates (0.4 elementary school student, 0.1 middle school student, and 0.2 high school student per single-family housing unit), the 891 housing units anticipated under the Full Buildout Scenario would generate a total of approximately 623 students (approximately 356 elementary school students, 89 middle school students, and 178 high school students). St. Helena Unified School District schools currently have capacity to serve additional students and are experiencing declining enrollment. General Plan Update provisions and school impact fees, as described in the discussion of the Likely Buildout Scenario in Section 4.P, would mitigate any impacts on school facilities. County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

Need for New or Expanded Library Facilities

The increase in resident and employee population associated with the Full Buildout Scenario would increase demands for library services and could create a need for new or expanded library facilities, but the General Plan Update provisions noted for the Likely Buildout Scenario in Section 4.P would mitigate impacts on library facilities (Baker, 2010). County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

Exposure to Wildland Fire Hazards

Wildland fire hazards under the Full Buildout Scenario would be the same as described in Section 4.P for the Likely Buildout Scenario and would be less than significant. County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

Emergency Response

Development in accordance with the Full Buildout Scenario could interfere with emergency response or evacuation, particularly due to traffic increases on Highway 29. The potentially significant impact of the Full Buildout Scenario would be the same as described for the Likely Buildout Scenario (Impact SERVICES-1) in Section 4.P. The additional development allowed under the Full Buildout Scenario would result in additional increases in traffic congestion, particularly along Highway 29. See discussion under Subsection 6.3.3, Transportation and Traffic, above. County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

6.3.17 Recreation

The less-than-significant recreation-related impacts of the Full Buildout Scenario would be the same as those described for the Likely Buildout Scenario in Section 4.Q, Recreation, of this EIR.

The potentially significant impact of the Full Buildout Scenario would also be similar to that described for the Likely Buildout Scenario (Impact RECREATION-1) in Section 4.Q. Based on the 1993 St. Helena General Plan standard of 5.0 acres of parkland per 1,000 residents, the 2,165 additional residents anticipated under the Full Buildout Scenario would create a need for approximately 10.8 acres of parkland. Based on the standard of 6.0 acres per 1,000 residents proposed by the General Plan Update (see Policies PR1.1 and PR1.3 and Implementing Action PR1.D), the 2,165 additional residents would create a need for approximately 13.0 acres of parkland. Based on the National Park and Recreation Association standard of 10.5 acres per 1,000 residents, the 2,165 additional residents would create a need for approximately 22.7 acres of parkland. These parkland needs would be in addition to existing needs (ranging from 10.2 to 42.8 additional acres). The parkland opportunities identified in the General Plan Update (totaling approximately 30 acres) may not be sufficient to offset existing plus projected parkland needs, which could range from 21.0 to 65.5 acres. The mitigation measure identified for the Likely Buildout Scenario (Mitigation Measure RECREATION-1) would reduce the impact of the Full Buildout Scenario to a less-than-significant level.

County and City of Calistoga projects would be outside of the service area of the City of St. Helena, and thus would not contribute to cumulative recreational impacts on a City-wide scale. These cumulative projects could contribute to increased demands on regional recreational facilities in conjunction with City growth. The project's contribution to this cumulative impact would be expected to be less than significant, given the availability of regional park facilities.

6.3.18 Utilities and Service Systems

Impacts of New or Expanded Water Facilities

The impact of the Full Buildout Scenario would be similar to that described for the Likely Buildout Scenario in Section 4.R, Utilities and Service Systems, of this EIR, and would be less than significant. County and City of Calistoga projects would be outside of the service area of the City of St. Helena. Water and wastewater demands are addressed below.

Impacts of New or Expanded Wastewater Facilities

The impact of the Full Buildout Scenario would be similar to that described for the Likely Buildout Scenario in Section 4.R, and would be less than significant. County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

Impact on Landfill Capacity

The Full Buildout Scenario is expected to generate approximately 1,081 tons per year, or 4.2 tons per day, of solid waste. This amount of solid waste would not create any capacity problems at the Clover Flat Landfill (Abreu, 2010). The impact on landfill capacity would therefore be less than significant. County and City of Calistoga projects would be outside of the service area of the City of St. Helena, but could contribute to region-wide demands for landfill capacity. The Full Buildout Scenario's contribution to this cumulative impact would be mitigated by General Plan Update policies aimed to reduce overall waste generation within the City of St. Helena.

Compliance with Solid Waste Statutes and Regulations

The impact of the Full Buildout Scenario would be similar to that described for the Likely Buildout Scenario in Section 4.R, and would be less than significant.

Insufficient Water Supplies

The potentially significant impact of the Full Buildout Scenario would be similar to but greater than that described for the Likely Buildout Scenario (Impact UTILITIES-1) in Section 4.R.

Under the Full Buildout Scenario without water conservation measures, metered water demand is projected to increase from approximately 1,874 acre-feet per year to approximately 2,340 acre-feet per year, an increase of approximately 466 acre-feet per year. With the addition of "unaccounted-for water," this increase in metered water demand would require a water supply of approximately 2,600 acre-feet per year by 2030, as shown in Table 6-1.

County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

The total projected water use of 2,600 acre-feet per year would exceed the City's existing "Normal Year" supply (2,000 acre-feet per year) by approximately 600 acre-feet per year. Development under the Full Buildout Scenario therefore has the potential to result in insufficient water supplies.

TABLE 6-1
TOTAL PROJECTED WATER USE AT MILESTONE YEARS – FULL BUILDOUT SCENARIO

	Projected Water Use (acre-feet per year)			
Land Use	**2008**	**2010**	**2020**	**2030**
Residential	958	991	1,157	1,322
Commercial, Retail, Institutional	371	380	426	473
Industrial	154	154	154	154
Landscaping	84	84	84	84
Outside City Limits	307	307	307	307
Total Projected Metered Water Demand	**1,874**	**1,917**	**2,128**	**2,340**
Unaccounted-For Water (10%)[1]	208	213	236	260
Total Projected Water Use (rounded)	**2,080**	**2,130**	**2,360**	**2,600**

[1] This is 10 percent of total water produced (vs. metered)

SOURCE: West Yost Associates, 2010b

Mitigation Measures UTILITIES-1a through UTILITIES-1d described in Section 4.R would reduce the impact but not to a less-than-significant level. As described in Mitigation Measure UTILITIES-1a, water conservation measures could be expected to result in water savings of approximately 495 acre-feet per year. This amount of water savings would not reduce total projected water use to below the City's existing "Normal Year" supply of 2,000 acre-feet per year under the Full Buildout Scenario. Due to the size of the potential water deficit under the Full Buildout Scenario, it is not certain that the remaining mitigation measures (UTILITIES-1b through UTILITIES-1d) would sufficiently balance water supply and demand. The impact would therefore remain **significant and unavoidable**.

Exceedance of Wastewater Treatment Capacity and Requirements

The potentially significant impact of the Full Buildout Scenario would be similar to but greater than that described for the Likely Buildout Scenario (Impact UTILITIES-2) in Section 4.R.

Under the Full Buildout Scenario, total estimated average dry weather flow would be approximately 0.8 million gallons per day (mgd). Average annual daily flow would be approximately 1.1 mgd, average wet weather flow would be approximately 1.8 mgd, and maximum wet weather flow would be approximately 4.8 mgd. Peak-hour wet weather flow would be approximately 5.8 mgd. Extension of City sewer service to areas that depend on septic systems prior to approval of future growth in these areas, as called for by

General Plan Update Policy PF2.2 and Implementing Action PF2.A, would further increase the average dry weather flow and per capita wastewater generation rate (West Yost Associates, 2010a).

Wastewater flows under the Full Buildout Scenario have the potential to exceed both the current and planned expanded capacities of the City's wastewater treatment plant. Based on projected wastewater flows, average dry weather flow into the wastewater treatment plant could be expected to exceed the plant's current capacity of 0.5 mgd by 2013 under the Full Buildout Scenario (West Yost Associates, 2010a). Current plans for expansion of the plant would provide a total capacity of 0.8 mgd. This capacity still may not be sufficient to serve projected wastewater flows under the Full Buildout Scenario. While the 0.8-mgd capacity would be the same as the average dry weather flow of 0.8 mgd estimated for the Full Buildout Scenario, both the capacity and flow estimates are based on averages and may not reflect actual conditions. Because the estimates are so close, it cannot be assumed that capacity would be adequate for the Full Buildout Scenario. Mitigation Measures UTILITIES-2a and UTILITIES-2b would address the potential exceedance of capacity through requirements for water conservation and sewer improvements that reduce inflow and infiltration. However, it is uncertain whether these measures would reduce wastewater flows to within the current and planned expanded capacities of the wastewater treatment plant. The impact would therefore remain **significant and unavoidable**.

County and City of Calistoga projects would be outside of the service area of the City of St. Helena.

6.4 Significant and Unavoidable Environmental Impacts

In accordance with CEQA Section 21083, and with CEQA Guidelines Sections 15064 and 15065, an EIR must also identify impacts that could not be eliminated or reduced to an insignificant level by mitigation measures included as part of the implementation of the proposed project, or by other mitigation measures that could be implemented, as described in Chapter 4, Environmental Setting, Impacts and Mitigation Measures.

Implementation of the proposed General Plan Update would result in the following significant and unavoidable impacts:

- Impact CULTURAL-2: Potential for disturbance to prehistoric archaeological sites that may contain human remains that have religious significance to local Native American representatives

- Impact TRANS-2: Increased vehicle miles travelled that is related to regional growth outside of the control of the City of St. Helena
- Cumulative traffic impacts
- Cumulative noise impacts
- Cumulative cultural resource impacts
- Cumulative water impacts
- Cumulative wastewater demand impacts

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CHAPTER 7
Report Preparers

EIR Preparers

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Illingworth & Rodkin: Air Quality; Greenhouse Gas Emissions; Noise

Environmental Collaborative: Biological Resources

Fehr & Peers: Transportation and Traffic

LSA Associates, Inc.: Cultural Resources

APPENDIX A

Notice of Preparation

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City of St. Helena
Notice of Preparation (REVISED)
City of St. Helena General Plan Update 2030

Date: April 22, 2010

To: Public Agencies and Interested Parties

From: Greg Desmond, City of St. Helena

Subject: Notice of Preparation (NOP) of a Draft Program Environmental Impact Report (PEIR) for the St. Helena General Plan Update 2030

The proposed project is an update of St. Helena's General Plan, which was last updated in 1993. This update focuses on the incorporation of recent planning trends and policies regarding climate protection and sustainability. The horizon year for the General Plan is 2030. This NOP replaces the NOP issued on March 30, 2010 due to corrections to projected housing and employment.

The project description, location, and probable environmental effects of the proposed General Plan Update are summarized below. The City of St. Helena is soliciting comments regarding the scope and content of the environmental information which are germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering permitting or other approvals. Because of time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please provide your written response to the address shown below by **5 p.m. May 22, 2010**, including the name for a contact person in your agency. The Planning Commission will receive comments on the Notice of Preparation at a Public Hearing held on May 4, 2010.

City of St. Helena
Planning Department
1480 Main Street
St. Helena, CA 94574
Attn: Greg Desmond, Senior Planner
Phone: (707) 968-2659
Fax: (707) 963-7748
Email: GregD@ci.st-helena.ca.us

Project Location

The City of St. Helena is approximately 65 miles north of San Francisco and 77 miles west of Sacramento. State Route 29 connects St. Helena to other communities in the Napa Valley, including Calistoga to the north and Yountville, Napa and American Canyon to the south. **Figure 1** presents the regional context of the City.

SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 1
Regional Setting

St. Helena's Planning Area and Sphere of Influence encompass a land area of 3,024 acres, as illustrated in **Figure 2**. The development pattern within this area includes an abundance of agricultural lands, business and industrial uses serving agricultural, single and multi-family residential neighborhoods, and a downtown that serves as the commercial center for the City and surrounding communities. St. Helena has a population of approximately 6,000 residents.

Project Characteristics

The St. Helena General Plan is the primary policy document for the City and the community of St. Helena as it moves toward the year 2030. It sets forth the City's policies to guide future land use decisions, and provides the needed framework to preserve the character and quality of development that the community desires. The General Plan also helps establish the processes by which the City's evolution and changes to existing land uses will take place.

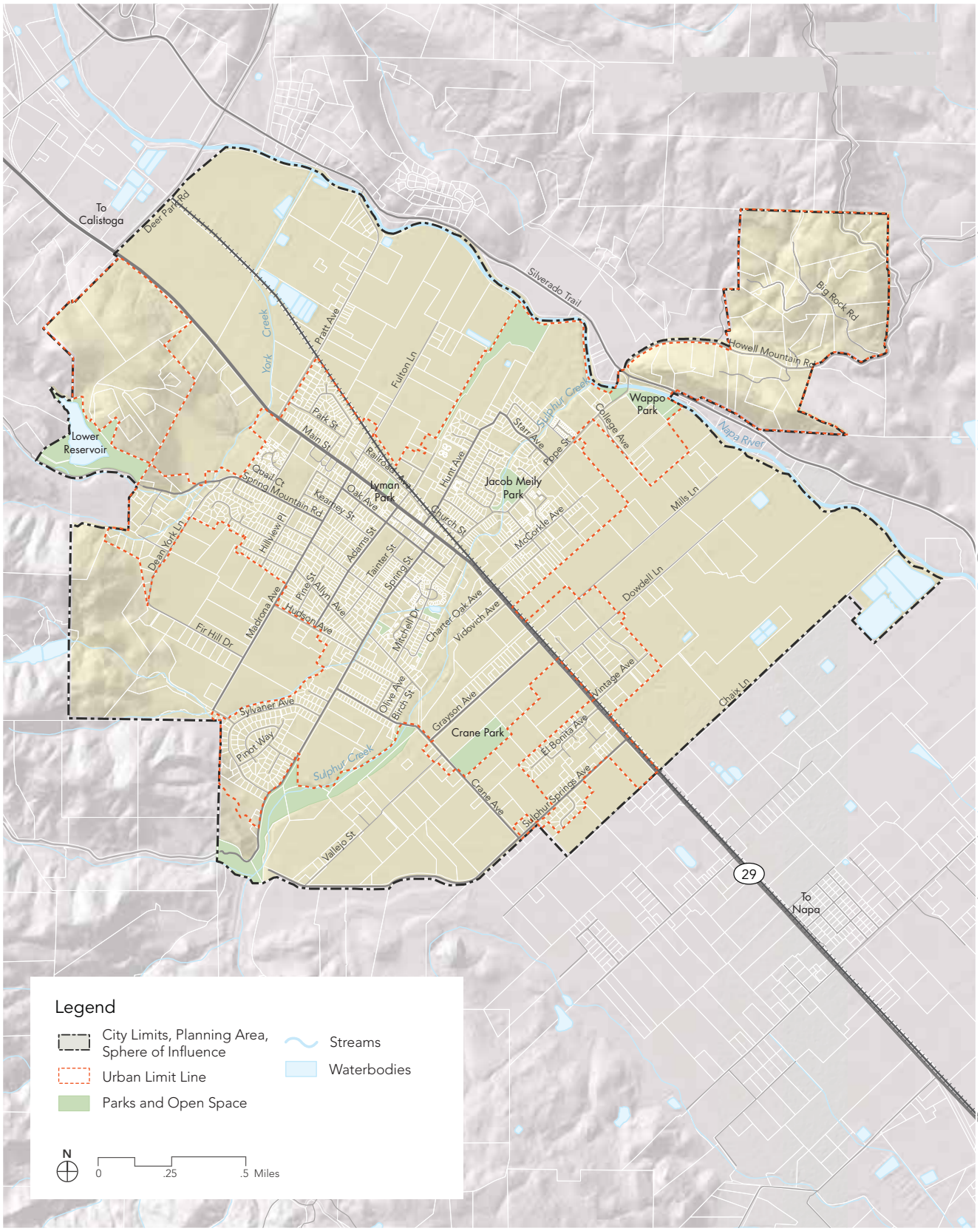
The St. Helena General Plan includes 12 elements. State statutes require that local general plans include the following seven elements, at a minimum: Land Use; Housing; Circulation; Open Space; Noise; Safety; and Conservation. California general plan guidelines encourage jurisdictions to reorganize or combine elements as appropriate to improve clarity and eliminate redundancy in the document. In addition, jurisdictions may incorporate additional elements as needed to achieve the community's vision and overarching goals. In order to respond to the community's special needs and desires, the St. Helena General Plan reorganizes some required plan components and incorporates several optional elements.

The St. Helena General Plan includes the following elements:

- Land Use and Growth Management
- Economic Sustainability
- Public Facilities and Services
- Circulation
- Historic Resources
- Community Design
- Open Space and Conservation
- Public Health, Safety and Noise
- Climate Change
- Housing
- Parks and Recreation
- Arts and Culture

General Plan Change Areas

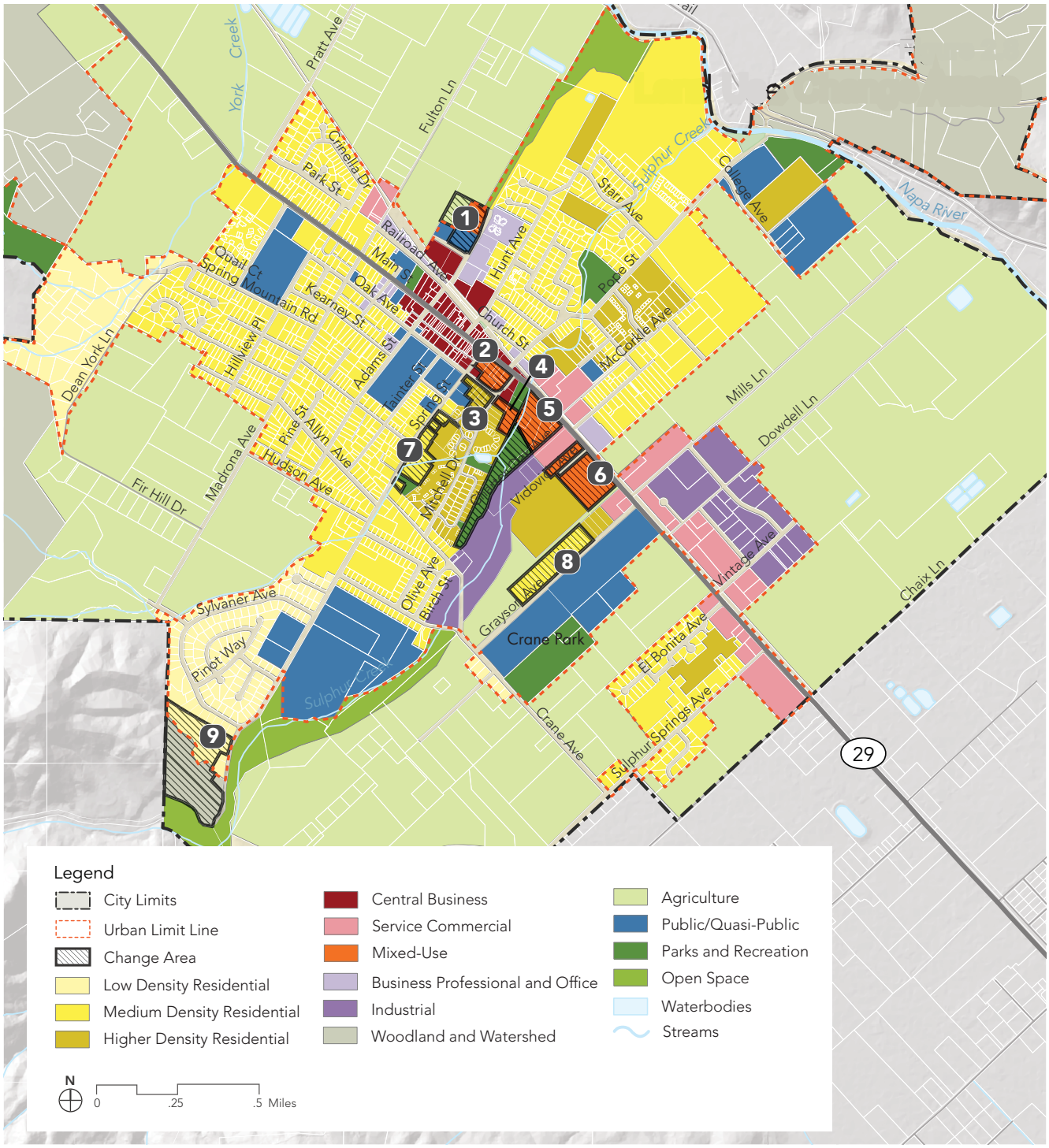
During the General Plan Update process, nine sites were identified for land use change, including sites for Mixed-Use, which is a new land use designation. The nine sites cover a total of 62.14 acres available for development. These sites are located within the Urban Limit Line (with some minor shifts) and include parcels with commercial, mixed-use and residential designations. **Figure 3** presents the land use change areas that correspond to the list below.



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 2
Local Setting



SOURCE: City of St. Helena; Napa County
Map Revised: January 2010

St. Helena General Plan Update EIR . 210147

Figure 3
Proposed Land Use Changes

1. Adams Street and Library Lane (5.67 acres): The proposed development program for the Adams Street property includes a mix of public/quasi-public, mixed use and agriculture. A modification of the Urban Limit Line is also proposed, which will increase the developable area by 0.83 acres and orient development along Adams Street. The previous designation was Central Business and Agriculture.

2. Main Street, Spring Street and Oak Avenue (2.61 acres): Mixed-Use is proposed for this area to allow a mix of commercial, office and residential development. Seventy-five percent (75%) of the site area (1.96 acres) was estimated as available for construction due to flooding constraints. The previous designation was Service Commercial.

3. Mitchell Drive and Oak Avenue-Northwest (2.04 acres): High Density Residential is proposed for this area to allow for higher density development within walking distance to downtown. The previous designation was Medium Density Residential.

4. Mitchell Drive and Oak Avenue-Southeast Side (1.58 acres): Mixed-Use is proposed for this area to allow a mix of commercial, office and residential development. Fifty percent (50%) of the site area (.79 acres) was estimated as available for construction due to flooding constraints. The previous designation was Service Commercial.

5. Main Street and Charter Oak Avenue (11.9 acres): Two zoning designations, Mixed-Use (5.13 acres) and Parks (6.77 acres), are proposed for this area to allow a mix of residential and commercial uses along Main Street and open space along Sulphur Creek. Fifty percent (50%) of the Mixed-Use site area (2.6 acres) was estimated as available for construction due to flooding constraints. The previous designation was Service Commercial.

6. Main Street and Vidovich Avenue (7.31 acres): Mixed-Use is proposed for this area to allow a mix of commercial, office and residential development. Also, community and General Plan Update Steering Committee input indicate a desire for locating a hotel on this site. The previous designation was Service Commercial.

7. Spring Street and St. James Drive (4.65 acres): Medium-Density Residential is proposed for this area to accurately reflect existing densities. The previous designation was High Density Residential.

8. Grayson Avenue (7.01 Acres): Medium-Density Residential is proposed on these parcels to allow more flexibility in density for this area. The previous designation was Low Density Residential.

9. South end of Spring Street (18.08 acres): This area includes a modification to the Urban Limit Line and an identical shift expanding the Low Density Residential area by 0.72 acres and the Woodlands & Watershed acreage by .72 acres. The previous designation was the same.

It should be noted that the State Department of Housing and Community Development formally certified the City's Housing Element on October 15, 2009. This Housing Element addressed the provision of affordable housing throughout the City.

Potential Growth under the General Plan Update

The three main areas for potential growth within St. Helena include the "Change Areas", the "Key Housing Opportunity Sites", and "Pipeline Projects". These areas are shown in Figure 3.

The Association of Bay Area Governments (ABAG) estimates a population increase of approximately 250 people by the Year 2030 in St. Helena.[i] However, ABAG's Regional Housing Needs Allocation (RHNA) sets a target for an additional 121 units by the year 2014. Aassuming 2.43 persons per unit this relates to a population growth of 294 persons by the year 2014. Assuming RHNA targets a similar growth rate for future allocations it would result in 363 units and 900 persons in the year 2030.[ii] ABAG's projections and housing needs allocation portray significantly different population growth rates for the City.

There are two project "growth" scenarios assumed in this analysis. The first is the "Likely Buildout Scenario" by the Year 2030, the horizon year for the Draft General Plan. The second is the "Full Buildout Scenario" which addresses all potential growth areas, and this scenario is evaluated in the cumulative impact analysis.

The Likely Buildout Scenario by 2030 includes a projected additional population of 921 persons and 379 new residential units within the City (see Table 1). The projected new 379 units are assumed to occur within a combination of "Key Opportunity Sites", "Change Areas", and /or "Pipeline Projects". This number was derived by assuming nine units per year for 20 years and increased by 20 percent to account for affordable housing, plus 163 units identified as Pipeline Projects[3.] Under this scenario the population would increase by 921 to 6,881, a 15.4% increase over the existing population of 5,960.

TABLE 1
LIKELY BUILDOUT SCENARIO

	Single Family Units	Multi Family Units[1]	Total Housing Units	Population[2]
Growth Management System Allowed Development (2030)[3]	173	43	216	525
Pipeline Projects	119	44	163	396
Total	**292**	**87**	**379**	**921**

1. Assumed 20% of housing units to be multi-family based on land use and change area and key opportunity site land use designations.
2. 2.43 Persons per unit.
3. Growth Management System Limit assuming 9 units per year for 20 years and increased by 20% to account for affordable housing.

The Full Buildout Scenario assumes all of the Change Areas (Table 5), Key Opportunity Sites (Table 5), and the Pipeline Projects (portion of Table 1). This scenario assumes that 214 new residential units would occur at the nine identified "Change Areas" as shown in Table 4 and all of the 514 units at the Key Opportunity Sites identified in the recently approved City of St. Helena

Housing Element (2009) (see Table 5) would also be developed. These new units would result in a population increase of 1,947, assuming an average of 2.43 persons per unit. The total population would be 7,906, an increase of 32.7% over 20 years.

TABLE 2
FULL BUILDOUT SCENARIO

	Residential Units[1]	Population[2]
Key Opportunity Sites	514	1,249
Change Areas	214	520
Pipeline Projects	163	396
Total	**891**	**2,165**

1. Assumed 20% of housing units to be multi-family based on land use and change area and key opportunity site land use designations.
2. 2.43 Persons per unit.

The number of jobs that could occur in this time period for the Full Buildout Scenario would be up to 303 new jobs; assuming 122,208 new square feet of commercial development (see Table 3). Under this scenario there would be a 47 percent increase above the existing number of jobs within the City (639 jobs). As shown in Table 3, the new commercial square footage would include about 43,704 square feet of retail/service uses, 43,704 square feet of office uses, and 34,800 square feet of public/quasi public uses. If the commercial Pipeline projects are included there would be a total of 338,208 sq. ft. of commercial uses and 711 jobs.

TABLE 3
COMMERCIAL DEVELOPMENT AND JOBS WITHIN CHANGE AREAS

	Square Footage[1]	Jobs
Retail/Service (1 employee/500 sq. ft.)[2]	43,704	87
Office (1 employee/300 sq. ft.)	43,704	146
Public/Quasi Public (1 employee/500 sq. ft.)	34,800	70
Total Commercial Capacity for 2030	**122,208**	**303**

1. Square Footage for Change Area Development Capacity is calculated by using 50% of maximum allowed Floor Area Ratio.
2. For commercial development, 50% of the Square footage is applied to office and 50% applied to retail/service (does not include Public/Quasi Public uses located on the Adams Street Parcel).

TABLE 4
PIPELINE PROJECT* COMMERCIAL DEVELOPMENT AND JOBS

*Pipeline projects include Doumani (90,000 Square Feet of Office), Vineland Station Hotel (80,000 Square Feet); Grandview Hotel (30,000 Square Feet), and Pina Industrial (16,000 square feet of Industrial).

	Square Footage	Jobs
Pipeline Projects		
Hotel (1 employee/1,200 sq. ft.)	110,000	92
Office (1 employee/300 sq. ft.)	90,000	300
Industrial (1 employee/1,000 sq. ft.)	16,000	16
Total	**216,000**	**408**

TABLE 5

CAPACITY OF LAND USE CHANGE AREAS

Name	Acres	Existing Land Use	Proposed Land Use	Housing Units	Commercial Square Feet[1]
1. Adams Street	1.77	Entire site composed of 2.65 acres of Central Business and 3 acres of Agriculture	Mixed-Use	28	8,000
	1.72		Public/Quasi Public	-	34,800
	2.18		Agriculture	-	-
2. Main Street, Spring Street and Oak Avenue	2.61	Central Business 1.96 acres (2.61 @ 75% lot coverage due to flood constraints)	Mixed-Use	29	24,033 (64,033 capacity minus 40,000 existing)
3. Mitchell Drive and Oak Avenue-Northwest Side	2.04	Medium Density	High Density	33 (44 capacity minus 11 existing)	
4. Mitchell Drive and Oak Avenue-Southeast Side	1.58	Service Commercial	Mixed-Use	12	12,904
5. Main Street and Charter Oak Avenue	5.13	Service Commercial	Mixed-Use	39	42,471
	6.77	Service Commercial	Park	-	-
6. Main Street and Vidovich Avenue	7.31	Service Commercial	Mixed-Use	See Pipeline Projects "Vineland Station", Tables 6 & 7	
7. Spring Street and St. James Drive	4.65	High Density Residential	Medium Density Residential	-	-
8. Grayson Avenue	7.01	Low Density Residential	Medium Density Residential	60 (capacity minus 10 existing)	-
9. South end of Spring Street	7.07	5.47 acres of Low Density Residential and 12.6 acres of Woodland and Watershed	Low Density Residential	13 (15 capacity minus 2 existing	-
	12.3		Woodland and Watershed	-	-
Total	**62.14**			**214**	**122,208**

1. Unless otherwise noted the mid-point of allowed DU/AC is applied to determine the potential housing units. Unless otherwise noted, 75% of the allowed commercial FAR is applied to determine the potential SQ FT of commercial. Development Capacity refers to residential or commercial development in addition to existing development (net). Central Business and Mixed-Use FAR = 1.0; Service Commercial FAR = .50.

TABLE 6

CAPACITY OF KEY HOUSING OPPORTUNITY SITES

Name	Acres	Zoning	Development Capacity – Housing Units[1]
1. Hunter Property	17.1	Medium Density Residential	181
2. Romero Property[2]	10.0	Medium Density Residential	See Pipeline projects "Mercy Housing", Table 6
3. Particelli Property	9.0	Medium Density Residential	84
4. Dickson Property	1.5	Medium Density Residential	16
5. Paladini Property	5.3	Medium Density Residential	56
6. Quaglia Property	4.4	Medium Density Residential	46
7. Aves property	4.6	Medium Density Residential	49
8. Jatsek Property	0.5	High Density Residential	12
9. Aslanian Property	2.4	High Density Residential	46
10. Aslanian Property			
11. Montelli Property	1.8	Medium Density Residential	24
Total			**514**

1. The mid-point of allowed DU/AC is applied to determine the potential housing units.
2. The Romero Property, also referred to as the Mercy Housing Project, is included in pipeline projects and will not be included in the total of this list to avoid double counting.

TABLE 7

CAPACITY OF PIPELINE PROJECT SITES

	Housing Units	Population[1]
Pipeline Projects[2]	163	396

1. 2.43 Persons per unit.
2. Pipeline projects include Mercy Housing (98 units), Spring Mountain Estates (10 units), Vineland Station Residential (10 units), and Magnolia Oaks (45 units).

Potential Environmental Effects

The following topics will be addressed in the Program EIR for the General Plan Update:

- Land Use and Planning
- Agriculture and Forestry Resources
- Air Quality
- Mineral Resources
- Public Services
- Cultural Resources

- Population and Housing
- Transportation and Traffic
- Greenhouse Gas Emissions
- Noise
- Biological Resources
- Utilities and Service Systems
- Aesthetics
- Recreation
- Geology and Soils
- Hazardous Materials
- Hydrology and Water Quality
- Energy

Scoping Meeting

A public scoping meeting will be held on **Tuesday May 4, 2010,** at the following location:

7:00 PM at the Planning Commission Meeting
Vintage Hall Board Room
465 Main Street, 2nd Floor
City of St Helena, CA 94574

At this meeting, agencies, organizations, and members of the public will be able to review the proposed project and provide comments on the scope of the environmental review process for the General Plan Update.

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[i] Association of Bay Area Governments (ABAG). Population Projections, 2009.

[ii] Assuming a rate RHNA numbers of 121 for subsequent allocations (2007-2014 = 121; 2014-2021 = 121; 2021-2030=121 total 363).

[3] Pipeline projects include proposed projects as of April 2010 that have not yet been constructed.

APPENDIX B

Responses to NOP and Public Scoping Letters

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NATURAL RESOURCES AGENCY

ARNOLD SCHWARZENEGGER, GOVERNOR

DEPARTMENT OF CONSERVATION

DIVISION OF LAND RESOURCE PROTECTION

801 K STREET • MS 18-01 • SACRAMENTO, CALIFORNIA 95814

PHONE 916 / 324-0850 • FAX 916 / 327-3430 • TDD 916 / 324-2555 • WEBSITE conservation.ca.gov

April 28, 2010

VIA FACSIMILE (707) 963-7748
Mr. Greg Desmond, Senior Planner
City of St. Helena
Planning Department
1480 Main Street
St. Helena, CA 94574

Subject: Notice of Preparation of a DEIR for the St. Helena General Plan Update - SCH# 2010042001

Dear Mr. Desmond:

The Department of Conservation's (Department) Division of Land Resource Protection (Division) has reviewed the Notice of Preparation of a DEIR for the St. Helena General Plan Update. The Division monitors farmland conversion on a statewide basis and administers the California Land Conservation (Williamson) Act and other agricultural land conservation programs. We offer the following comments and recommendations with respect to the proposed project's potential impacts on agricultural land and resources.

Project Description:

The City of St. Helena is approximately 65 miles north of San Francisco and 77 miles west of Sacramento. State Route 29 connects St. Helena to other communities in the Napa Valley area.

The City of St. Helena's Planning Area and Sphere of Influence (SOI) encompass 3,024 acres of land. The development pattern includes an abundance of agricultural lands, business and industrial. During the General Plan Update process nine sites were identified for land use change. The sites are located within the urban limit line & include parcels with commercial, mixed use & residential designations. However, the Proposed Land Use Changes map indicates that agriculture may be impacted either directly or indirectly by the General Plan Update.

The Department's Farmland Mapping and Monitoring Program (FMMP) data indicates that the City of St. Helena is composed of and surrounded by: Urban and built-up lands, Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Other land.

Division Comments:

The Division understands that mitigation may not reduce impacts on agricultural land and activities below a significant level, but feasible mitigation is available to partially reduce impacts. One way to accomplish this would be to require a mitigation program or policy to be incorporated into the General Plan Update for application to future specific project development (feasible mitigations are further discussed below). The Division also recommends that the DEIR address the following items to provide a comprehensive discussion of potential impacts of the General Plan Update's land use changes on agricultural land and activities, and to minimize impacts on all agricultural resources within the City limits:

Agricultural Setting of the Project

- Location and extent of Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and other types of farmland in and adjacent to the General Plan Update areas.
- Current and past agricultural use of the General Plan Update areas. Please include data on the types of crops grown, and crop yields and farm gate sales values.

To help describe the full agricultural resource value of the soils in the study area, the Department recommends the use of economic multipliers to assess the total contribution of the site's potential or actual agricultural production to the local, regional and state economies. Two sources of economic multipliers can be found at the University of California Cooperative Extension Service and the United States Department of Agriculture (USDA).

Project Impacts on Agricultural Land

When determining the agricultural value of the land, it's important to recognize that the agricultural value of a property may have been reduced over the years due to inactivity, but it does not mean that there is no longer any agricultural value. The *inability* to farm the land for agriculture, rather than the choice not to do so, is what could constitute a reduced agricultural value. The Division recommends the following discussion under the Agricultural Resources section of the Draft EIR:

- Type, amount, and location of farmland conversion resulting directly and indirectly from the General Plan Update and growth inducement, respectively. Specifically, how much land will be re-designated for urban uses?
- Impacts on current and future agricultural operations; e.g., land-use conflicts, increases in land values and taxes, etc.

- Incremental project impacts leading to cumulative impacts on agricultural land. This would include impacts from the proposed General Plan Update, as well as impacts from past, current, and likely projects in the future.
- Under California Code of Regulations Section 15064.7, impacts on agricultural resources may also be both quantified and qualified by use of established thresholds of significance. As such, the Division has developed a California version of the USDA Land Evaluation and Site Assessment (LESA) Model. The California LESA model is a semi-quantitative rating system for establishing the environmental significance of project-specific impacts on farmland. The model may also be used to rate the relative value of alternative locations and land uses for the General Plan Update. The LESA Model is available on the Division's website at:

http://www.consrv.ca.gov/DLRP/qh_lesa.htm

Mitigation Measures

Although direct conversion of agricultural land is often deemed an unavoidable impact in California Environmental Quality Act (CEQA) analyses, mitigation measures must be considered. The loss of agricultural land represents a permanent reduction in the State's agricultural land resources. As such, the Department recommends a requirement for permanent agricultural conservation easements on land of at least equal quality and size as partial compensation for the direct loss of agricultural land resulting from development of the General Plan Update areas. As mentioned above, this can be accomplished by incorporating a program or policy into the General Plan which would require partial mitigation for loss of agricultural resources from specific future projects within the General Plan Update and SOI expansion areas. If growth inducing or cumulative agricultural impacts are involved, the Department recommends that this ratio of agricultural conservation easements to lost agricultural land be increased. Mitigation for the loss of Prime Farmland is suggested at a 2:1 ratio due to its importance to the State of California.

Agricultural conservation easements will protect a portion of those remaining agricultural land resources and lessen General Plan Update and SOI expansion impacts on agricultural resources in accordance with California Environmental Quality Act (CEQA) Guideline §15370. The Department highlights this measure because of its acceptance and use by lead agencies as an appropriate mitigation measure under CEQA and because it follows an established rationale similar to that of wildlife habitat mitigation.

Mitigation via agricultural conservation easements can be implemented by at least two alternative approaches: the outright purchase of easements or the donation of mitigation fees to a local, regional or statewide organization or agency whose purpose includes the acquisition and stewardship of agricultural conservation easements. If the City

decides that future growth will require an agricultural mitigation bank, then it should consider creating or locating one before growth occurs so that it is in place and available prior to development. The proposed conversion of agricultural land should be deemed an impact of at least regional significance. Hence, the search for mitigation replacement lands can also be conducted regionally or statewide, and need not be limited to lands within the General Plan Update's surrounding area. Of course, the use of conservation easements is only one form of mitigation that should be considered. Any other feasible mitigation measures should also be considered.

Thank you for giving us the opportunity to comment on the Notice of Preparation of a DEIR for the St. Helena General Plan Update. Please provide this Department with a copy of the DEIR, the date of any hearings for this particular action, and any staff reports pertaining to it. If you have questions regarding our comments, or require technical assistance or information on agricultural land conservation, please contact Meri Meraz, Environmental Planner, at 801 K Street, MS 18-01, Sacramento, California 95814, or by phone at (916) 445-9411.

Sincerely,

Dan Otis
Program Manager
Williamson Act Program

cc: State Clearinghouse

ARNOLD SCHWARZENEGGER
GOVERNOR

Cal E·M·A
CALIFORNIA EMERGENCY MANAGEMENT AGENCY

MATTHEW R. BETTENHAUSEN
SECRETARY

April 7, 2010

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

RE: Notice of Preparation for a Draft Environmental Impact Report for the City of St. Helena's General Plan Update, SCH# 2010042001

Dear Mr. Desmond:

Thank you for the opportunity to comment on your Notice of Preparation for a Draft Environmental Impact Report (DEIR) for the city's general plan update. In preparing the general plan and accompanying DEIR, the city should examine the sections of state planning law that involve potential hazards the city may face. For your information, I have underlined specific sections of state planning law where identification and analysis of hazards are discussed (see Attachment A).

Prior to the release of the draft general plan or within the DEIR, city staff or your consultants should examine each of the requirements in state planning law and determine if there are hazard issues within the community which the general plan should address. A table in the DEIR (or general plan) which identifies these specific issues and where they are addressed in the general plan would be helpful in demonstrating the city has complied with these requirements. If the DEIR determines that state planning law requirements have not been met, it should recommend that these issues be addressed in the general plan as a mitigation measure.

We note that state planning law includes a requirement for consultations with state agencies in regard to information related to hazards. Cal EMA would be happy to share all available information at our disposal to facilitate the city's ability to comply with state planning and environmental laws.

If you have any questions about these comments, please contact Andrew Rush at (916) 845-8269 or andrew.rush@OES.ca.gov.

Sincerely,

Dennis Castrillo

Dennis Castrillo
Environmental Officer

cc: State Clearinghouse

3650 SCHRIEVER AVENUE • MATHER, CA 95655
RECOVERY BRANCH
(916) 845-8200 [OFFICE] • (916) 845-8385 [FAX]

Attachment A
Hazards and State Planning Law Requirements

General Plan Consistency

65300.5. In construing the provisions of this article, the Legislature intends that the general plan and elements and parts thereof comprise an integrated, internally consistent and compatible statement of policies for the adopting agency.

Seven Mandated Elements

65302. The general plan shall consist of a statement of development policies and shall include a diagram or diagrams and text setting forth objectives, principles, standards, and plan proposals. The plan shall include the following elements:

(a) A land use element that designates the proposed general distribution and general location and extent of the uses of the land for housing, business, industry, open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, education, public buildings and grounds, solid and liquid waste disposal facilities, and other categories of public and private uses of land. The location and designation of the extent of the uses of the land for public and private uses shall consider the identification of land and natural resources pursuant to paragraph (3) of subdivision (d). The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan. The land use element shall identify and annually review those areas covered by the plan that are subject to flooding identified by flood plain mapping prepared by the Federal Emergency Management Agency (FEMA) or the Department of Water Resources. The land use element shall also do both of the following:

(1) Designate in a land use category that provides for timber production those parcels of real property zoned for timberland production pursuant to the California Timberland Productivity Act of 1982, Chapter 6.7 (commencing with Section 51100) of Part 1 of Division 1 of Title 5.

(2) Consider the impact of new growth on military readiness activities carried out on military bases, installations, and operating and training areas, when proposing zoning ordinances or designating land uses covered by the general plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace.

(A) In determining the impact of new growth on military readiness activities, information provided by military facilities shall be considered. Cities and counties shall address military impacts based on information from the military and other sources.

(B) The following definitions govern this paragraph:

(i) "Military readiness activities" mean all of the following:

(I) Training, support, and operations that prepare the men and women of the military for combat.

(II) Operation, maintenance, and security of any military installation.

(III) Testing of military equipment, vehicles, weapons, and sensors for proper operation or suitability for combat use.

(ii) "Military installation" means a base, camp, post, station, yard, center, homeport facility for any ship, or other activity under the jurisdiction of the United States Department of Defense as defined in paragraph (1) of subsection (e) of Section 2687 of Title 10 of the United States Code.

(b) A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, any military airports and ports, and other local public utilities and facilities, all correlated with the land use element of the plan.

(c) A housing element as provided in Article 10.6 (commencing with Section 65580).

(d) (1) A conservation element for the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources. The conservation element shall consider the effect of development within the jurisdiction, as described in the land use element, on natural resources located on public lands, including military installations. That portion of the conservation element including waters shall be developed in coordination with any countywide water agency and with all district and city agencies, including flood management, water conservation, or groundwater agencies that have developed, served, controlled, managed, or conserved water of any type for any purpose in the county or city for which the plan is prepared. Coordination shall include the discussion and evaluation of any water supply and demand information described in Section 65352.5, if that information has been submitted by the water agency to the city or county.

(2) The conservation element may also cover all of the following:

(A) The reclamation of land and waters.

(B) Prevention and control of the pollution of streams and other waters.

(C) Regulation of the use of land in stream channels and other areas required for the accomplishment of the conservation plan.

(D) Prevention, control, and correction of the erosion of soils, beaches, and shores.

(E) Protection of watersheds.

(F) The location, quantity and quality of the rock, sand and gravel resources.

(3) Upon the next revision of the housing element on or after January 1, 2009, the conservation element shall identify rivers, creeks, streams, flood corridors, riparian habitats, and land that may accommodate floodwater for purposes of groundwater recharge and stormwater management.

(e) An open-space element as provided in Article 10.5 (commencing with Section 65560).

(f) (1) A noise element which shall identify and appraise noise problems in the community. The noise element shall recognize the guidelines established by the Office of Noise Control in the State Department of Health Care Services and shall analyze and quantify, to the extent practicable, as determined by the legislative body, current and projected noise levels for all of the following sources:

(A) Highways and freeways.

(B) Primary arterials and major local streets.

(C) Passenger and freight on-line railroad operations and ground rapid transit systems.

(D) Commercial, general aviation, heliport, helistop, and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation.

(E) Local industrial plants, including, but not limited to, railroad classification yards.

(F) Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

(2) Noise contours shall be shown for all of these sources and stated in terms of community noise equivalent level (CNEL) or day-night average level (Ldn). The noise contours shall be prepared on the basis of noise monitoring or following generally accepted noise modeling techniques for the various sources identified in paragraphs (1) to (6), inclusive.

(3) The noise contours shall be used as a guide for establishing a pattern of land uses in the land use element that minimizes the exposure of community residents to excessive noise.

(4) The noise element shall include implementation measures and possible solutions that address existing and foreseeable noise problems, if any. The adopted noise element shall serve as a guideline for compliance with the state's noise insulation standards.

(g) (1) A safety element for the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wild land and urban fires. The safety element shall include mapping of known seismic and other geologic hazards. It shall also address evacuation routes, military installations, peakload water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards.

(2) The safety element, upon the next revision of the housing element on or after January 1, 2009, shall also do the following:

(A) Identify information regarding flood hazards, including, but not limited to, the following:

(i) Flood hazard zones. As used in this subdivision, "flood hazard zone" means an area subject to flooding that is delineated as either a special hazard area or an area of moderate or minimal hazard on an official flood insurance rate map issued by the Federal Emergency Management Agency. The identification of a flood hazard zone does not imply that areas outside the flood hazard zones or uses permitted within flood hazard zones will be free from flooding or flood damage.

(ii) National Flood Insurance Program maps published by FEMA.

(iii) Information about flood hazards that is available from the United States Army Corps of Engineers.

(iv) Designated floodway maps that are available from the Central Valley Flood Protection Board.

(v) Dam failure inundation maps prepared pursuant to Section 8589.5 that are available from the Office of Emergency Services.

(vi) Awareness Floodplain Mapping Program maps and 200-year flood plain maps that are or may be available from, or accepted by, the Department of Water Resources.

(vii) Maps of levee protection zones.

(viii) Areas subject to inundation in the event of the failure of project or nonproject levees or floodwalls.

(ix) Historical data on flooding, including locally prepared maps of areas that are subject to flooding, areas that are vulnerable to flooding after wildfires, and sites that have been repeatedly damaged by flooding.

(x) Existing and planned development in flood hazard zones, including structures, roads, utilities, and essential public facilities.

(xi) Local, state, and federal agencies with responsibility for flood protection, including special districts and local offices of emergency services.

(B) Establish a set of comprehensive goals, policies, and objectives based on the information identified pursuant to subparagraph (A), for the protection of the community from the unreasonable risks of flooding, including, but not limited to:

(i) Avoiding or minimizing the risks of flooding to new development.

(ii) Evaluating whether new development should be located in flood hazard zones, and identifying construction methods or other methods to minimize damage if new development is located in flood hazard zones.

(iii) Maintaining the structural and operational integrity of essential public facilities during flooding.

(iv) Locating, when feasible, new essential public facilities outside of flood hazard zones, including hospitals and health care facilities, emergency shelters, fire stations, emergency command centers, and emergency communications facilities or identifying construction methods or other methods to minimize damage if these facilities are located in flood hazard zones.

(v) Establishing cooperative working relationships among public agencies with responsibility for flood protection.

(C) Establish a set of feasible implementation measures designed to carry out the goals, policies, and objectives established pursuant to subparagraph (B).

(3) After the initial revision of the safety element pursuant to paragraph (2), upon each revision of the housing element, the planning agency shall review and, if necessary, revise the safety element to identify new information that was not available during the previous revision of the safety element.

(4) Cities and counties that have flood plain management ordinances that have been approved by FEMA that substantially comply with this section, or have substantially equivalent provisions to this subdivision in their general plans, may use that information in the safety element to comply with this subdivision, and shall summarize and incorporate by reference into the safety element the other general plan provisions or the flood plain ordinance, specifically showing how each requirement of this subdivision has been met.

(5) Prior to the periodic review of its general plan and prior to preparing or revising its safety element, each city and county shall consult the California Geological Survey of the Department of Conservation, the Central Valley Flood Protection Board, if the city or county is located within the boundaries of the Sacramento and San Joaquin Drainage District, as set forth in Section 8501 of the Water Code, and the Office of Emergency Services for the purpose of including information known by and available to the department, the office, and the board required by this subdivision.

(6) To the extent that a county's safety element is sufficiently detailed and contains appropriate policies and programs for adoption by a city, a city may adopt that portion of the county's safety element that pertains to the city's planning area in satisfaction of the requirement imposed by this subdivision.

Consistency with Airport Land Use Plans

65302.3. (a) The general plan, and any applicable specific plan prepared pursuant to Article 8 (commencing with Section 65450), shall be consistent with the plan adopted or amended pursuant to Section 21675 of the Public Utilities Code.

Review of Safety Element

65302.5. (a) At least 45 days prior to adoption or amendment of the safety element, each county and city shall submit to the Division of Mines and Geology of the Department of Conservation

one copy of a draft of the safety element or amendment and any technical studies used for developing the safety element. The division may review drafts submitted to it to determine whether they incorporate known seismic and other geologic hazard information, and report its findings to the planning agency within 30 days of receipt of the draft of the safety element or amendment pursuant to this subdivision. The legislative body shall consider the division's findings prior to final adoption of the safety element or amendment unless the division's findings are not available within the above prescribed time limits or unless the division has indicated to the city or county that the division will not review the safety element. If the division's findings are not available within those prescribed time limits, the legislative body may take the division's findings into consideration at the time it considers future amendments to the safety element. Each county and city shall provide the division with a copy of its adopted safety element or amendments. The division may review adopted safety elements or amendments and report its findings. All findings made by the division shall be advisory to the planning agency and legislative body.

(1) The draft element of or draft amendment to the safety element of a county or a city's general plan shall be submitted to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county at least 90 days prior to either of the following:

(A) The adoption or amendment to the safety element of its general plan for each county that contains state responsibility areas.

(B) The adoption or amendment to the safety element of its general plan for each city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177.

(2) A county that contains state responsibility areas and a city or county that contains a very high fire hazard severity zone as defined pursuant to subdivision (b) of Section 51177, shall submit for review the safety element of its general plan to the State Board of Forestry and Fire Protection and to every local agency that provides fire protection to territory in the city or county in accordance with the following dates as specified, unless the local government submitted the element within five years prior to that date:

(A) Local governments within the regional jurisdiction of the San Diego Association of Governments: December 31, 2010.

(B) Local governments within the regional jurisdiction of the Southern California Association of Governments: December 31, 2011.

(C) Local governments within the regional jurisdiction of the Association of Bay Area Governments: December 31, 2012.

(D) Local governments within the regional jurisdiction of the Council of Fresno County Governments, the Kern County Council of Governments, and the Sacramento Area Council of Governments: June 30, 2013.

(E) Local governments within the regional jurisdiction of the Association of Monterey Bay Area Governments: December 31, 2014.

(F) All other local governments: December 31, 2015.

(3) The State Board of Forestry and Fire Protection shall, and a local agency may, review the draft or an existing safety element and report its written recommendations to the planning agency within 60 days of its receipt of the draft or existing safety element. The State Board of Forestry and Fire Protection and local agency shall review the draft or existing safety element and may

offer written recommendations for changes to the draft or existing safety element regarding both of the following:
(A) Uses of land and policies in state responsibility areas and very high fire hazard severity zones that will protect life, property, and natural resources from unreasonable risks associated with wildland fires.
(B) Methods and strategies for wildland fire risk reduction and prevention within state responsibility areas and very high hazard severity zones.
(b) Prior to the adoption of its draft element or draft amendment, the board of supervisors of the county or the city council of a city shall consider the recommendations made by the State Board of Forestry and Fire Protection and any local agency that provides fire protection to territory in the city or county. If the board of supervisors or city council determines not to accept all or some of the recommendations, if any, made by the State Board of Forestry and Fire Protection or local agency, the board of supervisors or city council shall communicate in writing to the State Board of Forestry and Fire Protection or to the local agency, its reasons for not accepting the recommendations.

Open Space Plans

65560. (a) "Local open-space plan" is the open-space element of a county or city general plan adopted by the board or council, either as the local open-space plan or as the interim local open-space plan adopted pursuant to Section 65563.
(b) "Open-space land" is any parcel or area of land or water that is essentially unimproved and devoted to an open-space use as defined in this section, and that is designated on a local, regional or state open-space plan as any of the following:
(1) Open space for the preservation of natural resources including, but not limited to, areas required for the preservation of plant and animal life, including habitat for fish and wildlife species; areas required for ecologic and other scientific study purposes; rivers, streams, bays and estuaries; and coastal beaches, lakeshores, banks of rivers and streams, and watershed lands.
(2) Open space used for the managed production of resources, including but not limited to, forest lands, rangeland, agricultural lands and areas of economic importance for the production of food or fiber; areas required for recharge of groundwater basins; bays, estuaries, marshes, rivers and streams which are important for the management of commercial fisheries; and areas containing major mineral deposits, including those in short supply.
(3) Open space for outdoor recreation, including but not limited to, areas of outstanding scenic, historic and cultural value; areas particularly suited for park and recreation purposes, including access to lakeshores, beaches, and rivers and streams; and areas which serve as links between major recreation and open-space reservations, including utility easements, banks of rivers and streams, trails, and scenic highway corridors.
(4) Open space for public health and safety, including, but not limited to, areas which require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs and areas required for the protection and enhancement of air quality.

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
(916) 657-5390 - Fax

RECEIVED
PLANNING DEPARTMENT
MAY 03 2010
City of St. Helena

May 3, 2010

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

RE: SCH#2010042001 St. Helena General Plan Update 2030; Napa County.

Dear Mr. Desmond:

The Native American Heritage Commission (NAHC) has reviewed the Notice of Preparation (NOP) referenced above. The California Environmental Quality Act (CEQA) states that any project that causes a substantial adverse change in the significance of an historical resource, which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA Guidelines 15064(b)). To comply with this provision the lead agency is required to assess whether the project will have an adverse impact on historical resources within the area of project effect (APE), and if so to mitigate that effect. To adequately assess and mitigate project-related impacts to archaeological resources, the NAHC recommends the following actions:

- ✓ Contact the appropriate regional archaeological Information Center for a record search. The record search will determine:
  - If a part or all of the area of project effect (APE) has been previously surveyed for cultural resources.
  - If any known cultural resources have already been recorded on or adjacent to the APE.
  - If the probability is low, moderate, or high that cultural resources are located in the APE.
  - If a survey is required to determine whether previously unrecorded cultural resources are present.
- ✓ If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
  - The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for public disclosure.
  - The final written report should be submitted within 3 months after work has been completed to the appropriate regional archaeological Information Center.
- ✓ Contact the Native American Heritage Commission for:
  - A Sacred Lands File Check. **USGS 7.5 minute quadrangle name, township, range and section required.**
  - A list of appropriate Native American contacts for consultation concerning the project site and to assist in the mitigation measures. **Native American Contacts List attached.**
- ✓ Lack of surface evidence of archeological resources does not preclude their subsurface existence.
  - Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, per California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities.
  - Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans.
  - Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Katy Sanchez

Katy Sanchez
Program Analyst
(916) 653-4040

CC: State Clearinghouse

Native American Contact List
Napa County
May 3, 2010

Ya-Ka-Ama
7465 Steve Olson Lane
Forestville , CA 95436
info@yakaama.org
(707) 887-1541

Pomo
Coast Miwok
Wappo

Mishewal-Wappo Tribe of Alexander Valley
Scott Gabaldon, Chairperson
PO Box 1794
Middletown , CA 95461
scottg@mishewalwappo.
707-494-9159

Wappo

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources forthe proposed SCH# 2010042001 St. Helena General Plan Update 2030; Napa County.

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512
www.energy.ca.gov

April 20, 2010

RECEIVED
PLANNING DEPARTMENT
APR 23 2010
City of St. Helena

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

Dear Mr. Desmond:

The California Energy Commission has received the City of St. Helena's Notice of Preparation titled St. Helena General Plan Update 2030, SCH 2010042001 that was submitted on 4/1/2010 for comments due by 4/30/2010. After careful review, the Energy Commission has found the following:

We would like to assist in reducing the energy usage involved in your project. Please refer to the enclosed Appendix F of the California Environmental Quality Act for how to achieve energy conservation.

In addition, the Energy Commission's *Energy Aware Planning Guide* is also available as a tool to assist in your land use planning. For further information on how to utilize this guide, please visit www.energy.ca.gov/energy_aware_guide/index.html.

Thank you for providing us the opportunity to review/comment on your project. We hope that our comments will be helpful in your environmental review process.

If you have any further questions, please call Gigi Tien at (916) 651-0566.

Sincerely,

Bill Pfanner

BILL PFANNER
Supervisor, Local Energy & Land Use Assistance Unit
Special Projects Office
Fuels and Transportation Division
California Energy Commission
1516 Ninth Street, MS 23
Sacramento, CA 95814

Enclosure

Appendix F
ENERGY CONSERVATION

I. Introduction

The goal of conserving energy implies the wise and efficient use of energy. The means of achieving this goal include:

(1) decreasing overall per capita energy consumption,
(2) decreasing reliance on natural gas and oil, and
(3) increasing reliance on renewable energy sources.

In order to assure that energy implications are considered in project decisions, the California Environmental Quality Act requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful and unnecessary consumption of energy.

Energy conservation implies that a project's cost effectiveness be reviewed not only in dollars, but also in terms of energy requirements. For many projects, lifetime costs may be determined more by energy efficiency than by initial dollar costs.

II. EIR Contents

Potentially significant energy implications of a project should be considered in an EIR. The following list of energy impact possibilities and potential conservation measures is designed to assist in the preparation of an EIR. In many instances, specific items may not apply or additional items may be needed.

A. Project Description may include the following items:
   1. Energy consuming equipment and processes which will be used during construction, operation, and/or removal of the project. If appropriate, this discussion should consider the energy intensiveness of materials and equipment required for the project.
   2. Total energy requirements of the project by fuel type and end use.
   3. Energy conservation equipment and design features.
   4. Initial and life-cycle energy costs or supplies.
   5. Total estimated daily trips to be generated by the project and the additional energy consumed per trip by mode.

B. Environmental Setting may include existing energy supplies and energy use patterns in the region and locality.

C. Environmental Impacts may include:
   1. The project's energy requirements and its energy use efficiencies by amount and fuel type for each stage of the project's life cycle including construction, operation, maintenance and/or removal. If appropriate, the energy intensiveness of materials may be discussed.
   2. The effects of the project on local and regional energy supplies and on requirements for additional capacity.
   3. The effects of the project on peak and base period demands for electricity and other forms of energy.
   4. The degree to which the project complies with existing energy standards.
   5. The effects of the project on energy resources.
   6. The project's projected transportation energy use requirements and its overall use of efficient transportation alternatives.

D. Mitigation Measures may include:
   1. Potential measures to reduce wasteful, inefficient and unnecessary consumption of energy during construction, operation, maintenance and/or removal. The discussion should explain why certain measures were incorporated in the project and why other measures were dismissed.
   2. The potential of siting, orientation, and design to minimize energy consumption, including transportation energy.
   3. The potential for reducing peak energy demand.
   4. Alternate fuels (particularly renewable ones) or energy systems.
   5. Energy conservation which could result from recycling efforts.

E. Alternatives should be compared in terms of overall energy consumption and in terms of reducing wasteful, inefficient and unnecessary consumption of energy.

F. Unavoidable Adverse Effects may include wasteful, inefficient and unnecessary consumption of energy during the project construction, operation, maintenance and/or removal that cannot be feasibly mitigated.

G. Irreversible Commitment of Resources may include a discussion of how the project preempts future energy development or future energy conservation.

H. Short-Term Gains versus Long-Term Impacts can be compared by calculating the energy costs over the lifetime of the project.

I. Growth Inducing Effects may include the estimated energy consumption of growth induced by the project.

STATE OF CALIFORNIA ... BUSINESS, TRANSPORTATION AND HOUSING AGENCY ARNOLD SCHWARZENEGGER, Governor

DEPARTMENT OF TRANSPORTATION
111 GRAND AVENUE
P. O. BOX 23660
OAKLAND, CA 94623-0660
PHONE (510) 622-5491
FAX (510) 286-5559
TTY 711

Flex your power!
Be energy efficient!

April 27, 2010

NAPGEN085
SCH#2010042001

Mr. Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94574

Dear Mr. Desmond:

City of St. Helena General Plan Update— Notice of Preparation (NOP)

Thank you for including the California Department of Transportation (Department) in the environmental review process for the City of St. Helena General Plan Update. The following comments are based on the NOP. As lead agency, the City of St. Helena is responsible for all project mitigation, including any needed improvements to State highways. The project's fair share contribution, financing, scheduling, and implementation responsibilities as well as lead agency monitoring should be fully discussed for all proposed mitigation measures and the project's traffic mitigation fees should be specifically identified in the environmental document. Any required roadway improvements should be completed prior to issuance of project occupancy permits. An encroachment permit is required when the project involves work in the State's right of way (ROW). The Department will not issue an encroachment permit until our concerns are adequately addressed. Therefore, we strongly recommend that the lead agency ensure resolution of the Department's California Environmental Quality Act (CEQA) concerns prior to submittal of the encroachment permit application; see the end of this letter for more information regarding the encroachment permit process.

Community Planning

The Department encourages the City of St. Helena to locate any needed housing, jobs and neighborhood services near major mass transit nodes, and connect these nodes with streets configured to facilitate walking and biking, as a means of promoting mass transit use and reducing regional vehicle miles traveled and traffic impacts on the state highways.

Please consider developing and applying pedestrian, bicycling and transit performance or level/quality of service measures and modeling pedestrian, bicycle and transit trips that your project will generate. Mitigation measures resulting from the analysis could improve pedestrian and bicycle access to transit facilities, thereby reducing traffic impacts on state highways.

In addition, please analyze secondary impacts on pedestrians and bicyclists that may result from any traffic impact mitigation measures. Describe any pedestrian and bicycle mitigation measures that would in turn be needed as a means of maintaining and improving access to transit facilities and reducing traffic impacts on state highways.

Traffic Impact Study

The environmental document should include an analysis of the impacts of the proposed project on State highway facilities in the vicinity of the project site. Please ensure that a Traffic Impact Study (TIS) is prepared providing the information detailed below:

1. Information on the plan's traffic impacts in terms of trip generation, distribution, and assignment. The assumptions and methodologies used in compiling this information should be addressed. The study should clearly show the percentage of project trips assigned to State facilities.

2. Current Average Daily Traffic (ADT) and AM and PM peak hour volumes on all significantly affected streets, highway segments and intersections.

3. Schematic illustration and level of service (LOS) analysis for the following scenarios: 1) existing, 2) existing plus project, 3) cumulative and 4) cumulative plus project for the roadways and intersections in the project area.

4. Calculation of cumulative traffic volumes should consider all traffic-generating developments, both existing and future, that would affect the State highway facilities being evaluated.

5. The procedures contained in the 2000 update of the Highway Capacity Manual should be used as a guide for the analysis. We also recommend using the Department's *"Guide for the Preparation of Traffic Impact Studies"*; it is available on the following web site: http://www.dot.ca.gov/hq/traffops/developserv/operationalsystems/reports/tisguide.pdf .

6. Mitigation measures should be identified where plan implementation is expected to have a significant impact. Mitigation measures proposed should be fully discussed, including financing, scheduling, implementation responsibilities, and lead agency monitoring.

We encourage the City of St. Helena to coordinate preparation of the study with our office, and we would appreciate the opportunity to review the scope of work.

We look forward to reviewing the TIS, including Technical Appendices, and environmental document for this project. Please send two copies to the address at the top of this letterhead, marked ATTN: Lisa Carboni, Mail Stop #10D.

Encroachment Permit

Any work or traffic control within the State ROW requires an encroachment permit that is issued by the Department. Traffic-related mitigation measures will be incorporated into the construction plans during the encroachment permit process. See the following website link for more information: http://www.dot.ca.gov/hq/traffops/developserv/permits/

To apply for an encroachment permit, submit a completed encroachment permit application, environmental documentation, and five (5) sets of plans which clearly indicate State ROW to the address at the top of this letterhead, marked ATTN: Michael Condie, Mail Stop #5E.

Should you have any questions regarding this letter, please call me at (510) 622-5491.

Sincerely,

Lisa Carboni

LISA CARBONI
District Branch Chief
Local Development - Intergovernmental Review

c: State Clearinghouse

State of California – The Natural Resources Agency
DEPARTMENT OF FISH AND GAME
Bay Delta Region
7329 Silverado Trail
Napa, CA 94558
(707) 944-5500
www.dfg.ca.gov

***ARNOLD SCHWARZENEGGER**, Governor*
***John McCamman,** Director*

April 19, 2010

RECEIVED
PLANNING DEPARTMENT
APR 29 2010
City of St. Helena

Mr. Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

Dear Mr. Desmond:

Subject: St. Helena General Plan Update 2030, Notice of Preparation, SCH #2010042001, City of St. Helena, Napa County

The Department of Fish and Game (DFG) has reviewed the documents provided for the subject project, and we have the following comments.

Please provide a complete assessment (including but not limited to type, quantity and locations) of the habitats, flora and fauna within and adjacent to the project area, including endangered, threatened, and locally unique species and sensitive habitats. The assessment should include the reasonably foreseeable direct and indirect changes (temporary and permanent) that may occur with implementation of the project. Rare, threatened and endangered species to be addressed should include all those which meet the California Environmental Quality Act (CEQA) definition (see CEQA Guidelines, Section 15380). DFG recommended survey and monitoring protocols and guidelines are available at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf.

Please be advised that a California Endangered Species Act (CESA) Permit must be obtained if the project has the potential to result in take of species of plants or animals listed under CESA, either during construction or over the life of the project. Issuance of a CESA Permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. If the project will impact CESA listed species, early consultation is encouraged, as significant modification to the project and mitigation measures may be required in order to obtain a CESA Permit.

For any activity that will divert or obstruct the natural flow, or change the bed, channel, or bank (which may include associated riparian resources) of a river or stream, or use material from a streambed, DFG may require a Lake and Streambed Alteration Agreement (LSAA), pursuant to Section 1600 et seq. of the Fish and Game Code, with the applicant. Issuance of an LSAA is subject to CEQA. DFG, as a responsible agency under CEQA, will consider the CEQA document for the project. The CEQA document should fully identify the potential

impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/; or to request a notification package, contact the Lake and Streambed Alteration Program at (707) 944-5520.

If you have any questions, please contact Ms. Suzanne Gilmore, Environmental Scientist, at (707) 944-5536; or Mr. Greg Martinelli, Water Conservation Supervisor, at (707) 944-5570.

Sincerely,

For

Charles Armor
Regional Manager
Bay Delta Region

cc: State Clearinghouse

California Regional Water Quality Control Board
San Francisco Bay Region

Linda Adams
Agency Secretary

1515 Clay Street, Suite 1400, Oakland, California 94612
(510) 622-2300 • Fax (510) 622-2460
http://www.waterboards.ca.gov/sanfranciscobay

Arnold Schwarzenegger
Governor

Date: 10 December 2009
File No. SMP

Sent via electronic mail: No hard copy will follow

Mr. Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94574

SUBJECT: **COMMENTS ON CITY OF ST. HELENA WORKING DRAFT REVISED GENERAL PLAN UPDATE**

Dear Mr. Desmond:

Thank you for providing a Working Draft Revised of the St. Helena General Plan Update dated May 2009. The Water Board staff's (staff) comments address the City's policies contained in the Open Space and Conservation Element that govern the regulation of groundwater and surface waters, and the protection of water quality and habitat within the Napa River watersheds. The staff strongly supports the City's intention to adhere to Living Rivers Principles, developed in 1996 by Napa River Watershed stakeholders. Staff also supports the City's plans to: implement Low Impact Development (LID) measures in order to maintain pre-development hydrologic conditions and promote groundwater recharge; and to limit the fill of floodplains and natural areas adjacent to floodplains. The staff's comments are discussed below and focus on the following policy areas: streams and riparian corridors and stormwater.

While staff supports many of the policies in the working draft revised, we are concerned that the document does not refer to the Napa River Pathogen and Sediment Total maximum Daily Loads (TMDL), which have been approved by the San Francisco Bay Regional Water Quality Control Board. These documents can be reviewed at the Regional Water Board's web site at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napapathogens/item8napapathsappb.pdf

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/napasediment/C_NS_Staff_Report_09-09.pdf

These TMDLs and their implementation plans provide clear direction by which to set local policies relative to urban runoff, development setbacks from stream channels, and goals of riparian protection and restoration.

In addition, the Napa river and its tributaries within the City of St. Helena are covered by the San Francisco Bay Urban Creeks Pesticide TMDL, which provides guidance for developing Integrated pest Management Plans for the safe us of pesticides and herbicides. That document can be reviews at the Regional Water Board's website at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/urbancrksdiazinon/b_final_staff_report.pdf

The staff's comments on the specific policy areas are discussed below.

STREAMS AND RIPARIAN CORRIDORS

Protection of Stream Corridors

The staff strongly supports the City's intent to adopt an ordinance for the protection, restoration and enhancement of creek corridors. The City's new creek setback policies should be applied to all new and redevelopment projects and all new and replanted cropland. The Napa River and its tributaries are already listed on the 303 (d) list as impaired for pathogens, sediment, and nutrients. TMDLs have been approved for sediment and pathogens that include implementation strategies that should be incorporated into any future creek protection ordinance.

Establishing stream setbacks (policy OS1.A, first bullet) should note that creek setbacks protect stream function and riparian habitat while allowing for limited use and access of the stream corridor.

Policy OS1.B should include compliance with Regional Water Quality Control Board regulations. In addition, Policy OS1.C should indicate coordination with the Regional Water Quality Control Board and other federal, state, and local regulatory agencies with regulatory authority for water quality, protected plant and animal species, and streams and wetlands.

The Regional Water Quality Control Board has a mandate to protect beneficial uses of water for rare and endangered species. In the case of the Napa River and its tributaries, the Board has adopted specific implementation plans for protection of salmon and steelhead. Therefore, Policy OS1.F should include a reference to Water Board documents including the Water Quality Control Plan and Napa River Sediment TMDL.

We support the City of St. Helena's intent to protect and enhance contiguous riparian vegetation (Policy OS1.3). It should be noted that mature riparian vegetation also provides shade (maintaining cool water temperature necessary for anadromous fish habitat) and enhance aquatic habitat.

In accordance with the Napa River Sediment TMDL implementation plan, staff recommends including Fish Friendly Farming or equivalent program in policy OS1.M as an acceptable sustainable agricultural program.

Impacts to Streams and Wetlands
For all projects that will result in the dredging or fill of waters of the State, including streams or wetlands, the City should require that Planning Department provide applicants with copies of the Joint Aquatic Resource Permits Application (JARPA) and the Board's 401 Water Quality Certification Application. The City should also have the applicant contact the Regional Water Board for any project and permit coverage questions.

STORMWATER

The Napa river and its tributaries within the City of St. Helena are regulated by the San Francisco Bay urban creeks pesticide TMDL. The TMDL provides guidance for the safe us of pesticides and herbicides. The TMDL requires development and implementation of an Integrated Pest Management Plan defines as:

> ***Integrated pest management****…is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and nontarget organisms, and the environment.*

Board staff suggests rewording policy OS1.A (second bullet item) to include development of an Integrated Pest Management Plan and to indicate a restriction of the use of herbicides in areas near and adjacent to water bodies.

OS3.B should clarify that water pollution will be prevented by required implementation of Best Management Practices specified in applicable permits, TMDLs, and in California's Plan for Non-Point Source Pollution Prevention.

In addition, we are unclear as to the meaning of the term "green" infrastructure in policy OS3.2. Staff recommends revising the policy statement to more clearly reflect the text in the implementing action, OS3.C.

Policy OS4.3 should be expanded to promote best management practice to protect both soil and groundwater resources from the use and disposal of hazardous substances.

Low Impact Design Features
The staff strongly supports the required use of low impact design features to reduce peak flows, treat stormwater runoff, reduce flooding, and allow for infiltration that would in turn increase the groundwater recharge rates on the development site. The low impacts design elements should be binding for new and redevelopment projects that will increase impervious surfaces and concentrate stormwater flows. Implementing LID would help the City comply with the General Municipal Stormwater Permit for small cities.

Regarding low impact design features, Board staff recommend that bio technology be use rather than structural features such as rip rap. We offer the following amended definition of "bioswale" to replace the current definition in the glossary:

> *Bioswale*- Landscape element designed to remove silt and pollution from surface runoff water. Often used near parking lots, bioswales are constructed with gently sloping sides and filled with vegetation over engineered sandy-loam soil and a sub-drain to trap pollutants and silt. Short segments of cobbles or gravel may be included to reduce erosion.

NPDES Construction and Industrial Permits
The City should require that the Planning Department provide appropriate permitting documents for projects that need coverage under the National Pollution Discharge Elimination System (NPDES) Statewide Construction and Industrial Permits. Specifically, the Planning Department should have on-hand and give to applicants the following documents and forms; the NPDES Construction or Industrial Permits; Notice of Intent (NOI), and the Permit Fact Sheets.

Overall, the staff commends City efforts to integrate new policies for the protection of riparian habitat and water quality of the Napa River and its tributaries and to balance these with existing General Plan policies that call for maintenance of sustainable agriculture for the local economy. We particularly support the introduction of a number of new policies including the development and adoption of an ordinance to protect creeks, including development setbacks and encouraging the use of low impact design features on new development.

Board staff looks forward to working with the City to protect the diversity of natural resources in the Napa River water shed within the City of St. Helena. If you have any questions, please contact Sandi Potter at (510) 622-2426, or email smpotter@waterboards.ca.gov

Sincerely,

S. Potter

Sandi Potter
Engineering Geologist

STATE OF CALIFORNIA

Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

April 26, 2010

RECEIVED
PLANNING DEPARTMENT
APR 3 0 2010
City of St. Helena

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

Re: Notice of Preparation, Draft Environmental Impact Report (DEIR)
St. Helena 2030 General Plan Update EIR
SCH# 2010042001

Dear Mr. Desmond:

As the state agency responsible for rail safety within California, the California Public Utilities Commission (CPUC or Commission) recommends that development projects proposed near rail corridors be planned with the safety of these corridors in mind. New developments and improvements to existing facilities may increase vehicular traffic volumes, not only on streets and at intersections, but also at at-grade highway-rail crossings. In addition, projects may increase pedestrian traffic at crossings, and elsewhere along rail corridor rights-of-way. Working with CPUC staff early in project planning will help project proponents, agency staff, and other reviewers to identify potential project impacts and appropriate mitigation measures, and thereby improve the safety of motorists, pedestrians, railroad personnel, and railroad passengers.

The traffic impact study within the traffic/circulation section of the DEIR needs to specifically consider safety issues to at-grade railroad crossings. In addition to the potential impacts of the proposed project itself, the DEIR needs to consider cumulative rail safety-related impacts created by other projects.

In general, the major types of impacts to consider are collisions between trains and vehicles, and between trains and pedestrians. The proposed project has the potential to increase vehicular and pedestrian traffic in the vicinity.

Measures to reduce adverse impacts to rail safety need to be considered in the DEIR. General categories of such measures include:

- Installation of grade separations at crossings, i.e., physically separating roads and railroad track by constructing overpasses or underpasses
- Improvements to warning devices at existing highway-rail crossings
- Installation of additional warning signage
- Improvements to traffic signaling at intersections adjacent to crossings, e.g., traffic preemption

- Installation of median separation to prevent vehicles from driving around railroad crossing gates
- Prohibition of parking within 100 feet of crossings to improve the visibility of warning devices and approaching trains
- Installation of pedestrian-specific warning devices and channelization and sidewalks
- Construction of pull out lanes for buses and vehicles transporting hazardous materials
- Installation of vandal-resistant fencing or walls to limit the access of pedestrians onto the railroad right-of-way
- Elimination of driveways near crossings
- Increased enforcement of traffic laws at crossings
- Rail safety awareness programs to educate the public about the hazards of highway-rail grade crossings

Commission approval is required to modify an existing highway-rail crossing or to construct a new crossing.

Thank you for your consideration of these comments. We look forward to working with the City on this project. If you have any questions in this matter, please contact me at (415) 713-0092 or email at ms2@cpuc.ca.gov.

Sincerely,

Moses Stites
Rail Corridor Safety Specialist
Consumer Protection and Safety Division
Rail Transit and Crossings Branch
515 L Street, Suite 1119
Sacramento, CA 95814

STATE OF CALIFORNIA Arnold Schwarzenegger, *Governor*

PUBLIC UTILITIES COMMISSION
505 VAN NESS AVENUE
SAN FRANCISCO, CA 94102-3298

May 13, 2010

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

Re: Notice of Preparation, Draft Environmental Impact Report (DEIR)
St. Helena 2030 General Plan Update
SCH# 2010042001

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Sincerely,

Moses Stites
Rail Corridor Safety Specialist
Consumer Protection and Safety Division
Rail Transit and Crossings Branch
180 Promenade Circle, Suite 115
Sacramento, CA 95834-2939

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

ARNOLD SCHWARZENEGGER
GOVERNOR

CYNTHIA BRYANT
DIRECTOR

Notice of Preparation

April 28, 2010

To: Reviewing Agencies

Re: St. Helena General Plan Update 2030
SCH# 2010042001

Attached for your review and comment is the Notice of Preparation (NOP) for the St. Helena General Plan Update 2030 draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Greg Desmond
City of St. Helena
1480 Main Street
St. Helena, CA 94530

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Acting Director

Attachments
cc: Lead Agency

RECEIVED
PLANNING DEPARTMENT
MAY 04 2010
City of St. Helena

1400 10th Street P.O. Box 3044 Sacramento, California 95812-3044
(916) 445-0613 FAX (916) 323-3018 www.opr.ca.gov

Document Details Report
State Clearinghouse Data Base

SCH#	**2010042001**
Project Title	St. Helena General Plan Update 2030
Lead Agency	St. Helena, City of

Type	**NOP** Notice of Preparation
Description	NOTE: Revised, this NOP replaces the NOP issued on March 30, 2010 due to corrections to projected housing and employment. The St. Helena General Plan is the primary policy document for the City and the community of St. Helena as it moves toward the year 2030. It sets forth the City's policies to guide future land use decisions, and provide the needed framework to preserve the character and quality of development that the community desires. The General Plan also identifies policies and establishes the processes by which the City's changes to existing land uses will take place. The project is a focused update of St. Helena's General Plan, which was las updated in 1993. This update focuses on the incorporate recent planning trends and policies regarding climate protection and sustainability.

Lead Agency Contact

Name	Greg Desmond		
Agency	City of St. Helena		
Phone	(707) 968-2659	***Fax***	
email	GregD@ci.st-helena.ca.us		
Address	1480 Main Street		
City	St. Helena	***State*** CA	***Zip*** 94530

Project Location

County	Napa		
City	St. Helena		
Region			
Cross Streets	Citywide		
Lat / Long	38° 30' 10" N / 122° 28' 11" W		
Parcel No.	citywide		
Township	***Range***	***Section***	***Base***

Proximity to:

Highways	SR 29, SR 128
Airports	
Railways	Napa Valley Wine Train
Waterways	
Schools	St. Helena Unified
Land Use	Medium Density, Service Commerical, High Density Residential, Low Density Residential

Project Issues	Archaeologic-Historic; Air Quality; Drainage/Absorption; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Wildlife; Growth Inducing; Landuse; Cumulative Effects; Agricultural Land; Aesthetic/Visual; Biological Resources

Reviewing Agencies	Resources Agency; Department of Conservation; Cal Fire; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Game, Region 3; Office of Emergency Management Agency, California; Native American Heritage Commission; State Lands Commission; California Highway Patrol; Department of Housing and Community Development; Caltrans, District 4; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 2

Note: Blanks in data fields result from insufficient information provided by lead agency.

Date Received 04/23/2010 ***Start of Review*** 04/23/2010 ***End of Review*** 05/24/2010

Note: Blanks in data fields result from insufficient information provided by lead agency.

NOP Distribution List

County: Nevada

SCH# [illegible]

Resources Agency

- [x] **Resources Agency**
  Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
  Mike Sotelo
- [ ] **California Coastal Commission**
  Elizabeth A. Fuchs
- [ ] **Colorado River Board**
  Gerald R. Zimmerman
- [x] **Dept. of Conservation**
  Rebecca Salazar
- [ ] **California Energy Commission**
  Eric Knight
- [x] **Cal Fire**
  Allen Robertson
- [ ] **Central Valley Flood Protection Board**
  James Herota
- [ ] **Office of Historic Preservation**
  Wayne Donaldson
- [x] **Dept of Parks & Recreation**
  Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
  Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
  Steve McAdam
- [x] **Dept. of Water Resources**
  Resources Agency
  Nadell Gayou
- [ ] _____
  Conservancy

Fish and Game

- [ ] **Depart. of Fish & Game**
  Scott Flint
  Environmental Services Division
- [ ] **Fish & Game Region 1**
  Donald Koch
- [ ] **Fish & Game Region 1E**
  Laurie Harnsberger
- [ ] **Fish & Game Region 2**
  Jeff Drongesen
- [x] **Fish & Game Region 3**
  Charles Armor
- [ ] **Fish & Game Region 4**
  Julie Vance
- [ ] **Fish & Game Region 5**
  Don Chadwick
  Habitat Conservation Program
- [ ] **Fish & Game Region 6**
  Gabrina Gatchel
  Habitat Conservation Program
- [ ] **Fish & Game Region 6 I/M**
  Brad Henderson
  Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Game M**
  George Isaac
  Marine Region

Other Departments

- [ ] **Food & Agriculture**
  Steve Shaffer
  Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
  Public School Construction
- [ ] **Dept. of General Services**
  Anna Garbeff
  Environmental Services Section
- [ ] **Dept. of Public Health**
  Bridgette Binning
  Dept. of Health/Drinking Water

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
  Linda Flack
- [x] **Cal EMA (Emergency Management Agency)**
  Dennis Castrillo
- [ ] **Governor's Office of Planning & Research**
  State Clearinghouse
- [x] **Native American Heritage Comm.**
  Debbie Treadway
- [ ] **Public Utilities Commission**
  Leo Wong
- [ ] **Santa Monica Bay Restoration**
  Guangyu Wang
- [x] **State Lands Commission**
  Marina Brand
- [ ] **Tahoe Regional Planning Agency (TRPA)**
  Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
  Sandy Hesnard
- [ ] **Caltrans - Planning**
  Terri Pencovic
- [x] **California Highway Patrol**
  Scott Loetscher
  Office of Special Projects
- [x] **Housing & Community Development**
  CEQA Coordinator
  Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
  Rex Jackman
- [ ] **Caltrans, District 2**
  Marcelino Gonzalez
- [ ] **Caltrans, District 3**
  Bruce de Terra
- [x] **Caltrans, District 4**
  Lisa Carboni
- [ ] **Caltrans, District 5**
  David Murray
- [ ] **Caltrans, District 6**
  Michael Navarro
- [ ] **Caltrans, District 7**
  Elmer Alvarez
- [ ] **Caltrans, District 8**
  Dan Kopulsky
- [ ] **Caltrans, District 9**
  Gayle Rosander
- [ ] **Caltrans, District 10**
  Tom Dumas
- [ ] **Caltrans, District 11**
  Jacob Armstrong
- [ ] **Caltrans, District 12**
  Chris Herre

Cal EPA

Air Resources Board

- [ ] Airport Projects
  Jim Lerner
  - [ ] Transportation Projects
    Douglas Ito
  - [ ] Industrial Projects
    Mike Tollstrup
- [ ] **State Water Resources Control Board**
  Regional Programs Unit
  Division of Financial Assistance
- [ ] **State Water Resources Control Board**
  Student Intern, 401 Water Quality Certification Unit
  Division of Water Quality
- [ ] **State Water Resouces Control Board**
  Steven Herrera
  Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
  CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
  CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
  Cathleen Hudson
  North Coast Region (1)
- [x] **RWQCB 2**
  Environmental Document Coordinator
  San Francisco Bay Region (2)
- [ ] **RWQCB 3**
  Central Coast Region (3)
- [ ] **RWQCB 4**
  Teresa Rodgers
  Los Angeles Region (4)
- [ ] **RWQCB 5S**
  Central Valley Region (5)
  - [ ] **RWQCB 5F**
    Central Valley Region (5)
    Fresno Branch Office
  - [ ] **RWQCB 5R**
    Central Valley Region (5)
    Redding Branch Office
- [ ] **RWQCB 6**
  Lahontan Region (6)
  - [ ] **RWQCB 6V**
    Lahontan Region (6)
    Victorville Branch Office
- [ ] **RWQCB 7**
  Colorado River Basin Region (7)
- [ ] **RWQCB 8**
  Santa Ana Region (8)
- [ ] **RWQCB 9**
  San Diego Region (9)

- [ ] **Other** _____

Last Updated on 03/24/10

From: Napa County Landmarks [mailto:info@napacountylandmarks.org]
Sent: Tuesday, May 18, 2010 2:14 PM
To: Greg Desmond
Cc: 'Mary Ellen Boyet'; 'Stephen Cuddy'; 'Juliana Inman'
Subject: Napa County Landmarks comments on City of St. Helena General Plan Update 2030

Hello Mr. Desmond-

Thank you for soliciting Napa County Landmarks' comments on your draft PEIR for the St. Helena General Plan Update 2030. Our Preservation Action Committee has reviewed the Historic Resources element of the project plan and appreciates its comprehensive approach to preserving and restoring St. Helena's existing building stock. In particular Landmarks lauds the document's emphasis on adaptive reuse and locally specific design guidelines to retain the town's unique character and its promotion of preservation incentives.

The PAC's only additional comment is that it did not see any mention in the document regarding encouraging future projects to follow the Secretary of Interiors Standards for the Treatment of Historic Properties and that this could be easily incorporated to assist planners and property owners alike. For more information of the Interior Secretary's Standards, visit the National Park Service webpage at http://www.nps.gov/history/hps/tps/standards_guidelines.htm.

Thank you again for the opportunity to comment. We look forward to receiving future updates.

Best regards,

Marie Dolcini
Executive Director

Napa County Landmarks is the oldest continually running non-profit preservation organization in Napa County. Founded in 1974, Landmarks is dedicated to protecting a living record of the past for the edification and enjoyment of future generations by promoting the saving and appreciation of irreplaceable historic buildings and sites through educational programs, public policy advocacy, research, and technical assistance. For more information, visit www.napacountylandmarks.org.

Jerald R. Hyde, FASA, FIOA
Physicist, Consultant on Acoustics
Box 55
St. Helena, CA 94574
(707) Hm. 963-0983, FAX 963-4499
jerryhyde@occtech.com

May 17, 2010

M.I.G.
ATTENTION: Mr. Brian Soland, AICP
PROJECT: St. Helena General Plan Update 2030
SUBJECT: Technical Review of Noise Section of February 2010 Public Draft

Dear Brian:

I am attaching three "DOC" files as follows:

- **"Noise" Section (Draft pages 9-11, 9-12)**
  Comments: I have rewritten this for completeness and accuracy. I have made the information specific to our community. In the Public Draft, there was essentially no mention of the most important "noise" aspects of our town, that of how amazingly quiet it is, particularly in the residential areas. No residential morning, evening or nighttime sound measurements were taken by the consultant. I have taken these measurements, applied them to the standards of Table C-3, and will provide the data to the acoustical consultant, Illingworth and Rodkin.

  You and staff may of course make general verbiage and/or syntax and sentence structure changes. If you contemplate changing the meaning or content, then I would appreciate a call to discuss.

- **Table C-1 (Definitions)**
  Comments: Amazingly, the list of definitions did not include "NOISE" if you can imagine! And, yes, it has a specific meaning. I have also cleaned up and added a couple of definitions for completeness and supplementing of the text.

- **Table C-3 (formerly Table 8-5 in 1993 General Plan)**
  Over the past 18 years, this table has been found to be difficult to interpret and to accomplish in the field. It also requires an acoustical measurement by a professional.

  This revised version applies the same standard to the reality of our residential background ambient noise levels which actually exist. It does not require an *in situ* acoustical measurement in most cases, and also allows (in the second sentence) for a lessening of the requirements under certain conditions, and/or a site-specific alternative analysis if desired.

  In essence, this is the same standard as before, but applied to St. Helena's existing quiet background ambient noise conditions in a more simple way.

Table C-2, while antiquated using a 1973 reference (which is not specific enough to look up) remains unchanged. I actually worked in the Paul S. Veneklasen office in 1973 and had a hand in formulating this standard. As I said, this is very old stuff, and could stand to be brought up to date, but I'm not going to get into that personally. You might want to have the consultant take another stab at it. If they do, I'd want to see it, however.

Environmental Document – Parts of the rewritten GP "Noise" section also need to be incorporated into the environmental document, particularly in the section headed "Existing Noise Conditions." That and other improvements need to be mentioned and I will do that in a separate document this week.

Of course be sure to call, or have your staff call/Email if you want to discuss any changes to what I've spent quite a bit of time producing.

Yours sincerely,

Jerry H.

Jerald R. Hyde
FASA, FIOA, Member Institute of Noise Control Engineering

Copy (by Email): Greg Desmond

May 17, 2010

General Plan Update 2030 - Public Draft, February 2010

Jerald Hyde Technical Review and Rewrite of Noise Section of Chapter 9

NOISE

Noise is a sound which is unhealthful or unwanted. It can be a man-caused public health hazard which includes excessive, intrusive or objectionable noises that disrupt daily life. Noise has been tied to physiological effects ranging from hearing loss, high blood pressure, and sleep disturbance, to communication interference, and general interruption and annoyance of normal daily activities. Definitions of acoustical terms used in this discussion are listed in Table C-1.

Different land uses have different levels of acceptability relative to noise, and the State of California mandates that general plans include noise level compatibility standards for the development of land as a function of a range of noise exposure values.

See Table 9.1 (formerly Table 12.1 bar chart – recommended version)

TABLE 9.1 – Noise Exposure and Land Use Compatibility Guidelines

The ambient noise environment in the City of St. Helena is notable for being extremely quiet, especially in the evenings and at nighttime. Except within close proximity to Main Street (State Route 29) and major collector roadways, the noise environment can be characterized as being that of a quiet rural setting. During the night, Highway 29 has few if any automobiles for long periods of time, and the entire community is extremely quiet. Residential areas, away from collector streets are shielded from highway and collector noise and register very low background noise levels typically in the range of 20 to 25 dBA or below.

Sleep disturbance and the annoyance of sound not only depend on the absolute sound level of a noise source but are related to the magnitude of the noise above that background noise levels present. This means that in particularly quiet rural noise environments, the control of extraneous, intrusive and annoying noise sources is important to maintaining the public health and a quality living sound environment expected in a rural area.

The land use compatibility standards of Table 9.1 relate transportation noise impact to development of different property uses from residential, to commercial, open space and so on. The major transportation noise source, as mentioned above, is Highway 29 and a few collector streets within the city. Other sources

which are intermittent and generally inconsequential to the noise environment are over-flying commercial aircraft at high altitudes, and small general aviation and helicopter flyovers. The Wine Train has an average of two trips to St. Helena per day, and emits a loud horn at crossings along with the low frequency rumble of the diesel engines. Maximum interior intermittent noise level criteria for non-residential receptors are given in Table C-2.

Quiet residential properties must be protected from intrusive and annoying sounds which are in excess of the low background noise levels which typically exist in these areas. A standard is given in Table C-3 which determines the impact of intrusive noise for residential receptors. This standard is specific to the quite St. Helena residential noise environment and regulates the amount of noise a specific sound source can emit relative to typical residential background noise levels.

Stationary noise sources which are typical in St. Helena relate to its agricultural activities, street sweeping and garbage/recycling pickup in the early morning, and the gravel processing operations at Harold Smith and Son, Inc. along Sulphur Creek. Major noise impact is experienced from wind machines in the early spring with noise levels at residential receptors at above 90 dBA, at the same time that background noise levels are in the low-20 dBA range. Other agricultural noise is created by tractors and sulphur blowers which are also employed in the early hours of the morning. Finally, the city has sirens at two locations associated with the Fire Department. These sound on an average of two to three times per day, with approximately half of them occurring during nighttime hours. Siren noise levels exceed 100 dBA at residences near the sirens and drop off to around 55 dBA at distant residential areas.

Noise concerns in St. Helena include noise standard enforcement and regulating new development, particularly commercial, to limit noise impacts on noise-sensitive uses such as residential areas. Of particular concern is the need to accommodate noises related to agricultural production under the city's right-to-farm provisions. The City can apply good neighbor policies through promoting communication between agricultural and winery activities and nearby residential locations.

Tables XXX-YYY and Figure 9.5 reference the locations and results of noise measurements conducted as part of the General Plan Update environmental review process. (NOTE: I'll be providing Rodkin and Illingsworth with additional data, so I'm not sure exactly what the table numbers will be.)

May 13, 2010

Additions and Corrections to Table C-1 (by J.R.Hyde)

Table C-1 Definitions of Acoustical Terms Used in this Report

1. Add to list of definitions
   Add this definition after "A-Weighted Sound Level"

   "Noise" "Unhealthful or unwanted sound."

2. Addition to the list of definitions
   Add this definition after the definition for "Ambient Noise Level."

   "Background Noise Level" "The L_{90} of the Ambient Noise Level. It represents the ever present lower noise level of the Ambient Noise, due to distant sources which are individually indistinguishable, and in the absence of the Intrusive Noise or Extraneous Noise."

3. Change of existing definition
   a. Change the term "Intrusive" to "Intrusive Noise"
   b. Modify the definition of "Intrusive Noise" by changing to the following:

   "That noise from a source of specific origin which intrudes over and above the existing background noise level at a given location. The degree of intrusiveness of a sound depends upon its amplitude, duration, frequency, ~~and~~ time of occurrence and tonal or informational content as in contrast to the prevailing ~~ambient~~ background noise level which exists in the sound's absence.

4. Addition to the list of definitions
   Add this definition after "Intrusive Noise."

   "Extraneous Noise" "Specific or distinguishable noise from nearby sources such as vehicles, mechanical devices, pumps, aircraft, barking, birds, wind, and other similar individual noise sources."

5. Addition to the list of definitions (because this is used in Table C-2)
   Add this definition:

   "Intermittent Noise" "A noncontinuous sound consisting of a number of clearly distinguishable sound events of varying frequency or intensity."

May 17, 2010

Additions and Corrections to Table C-3 (Table 8-5 in 1993 General Plan) (by J.R.Hyde)

Table C-3 Standard and Adjustments for Determining Impacts of Intrusive Noise for Residential Receptors

STANDARD

The L_{eq} of an intrusive noise shall not exceed the following values:

7 A.M. – 5 P.M.	40 dBA
5 P.M. – 7 A.M.`	35 dBA

The L_{max} of an intrusive noise shall not exceed the following value:

10 P.M. – 7 A.M.	55 dBA

These values are based on the standard of allowing the intrusive noise to exceed the background noise level L_{90} by 5 dBA, subject to the corrections below. Where desirable or appropriate, this "L_{90} + 5 dBA" standard may be used to substitute for the above L_{eq} values.

These noise limits are to apply to the nearest receiver property line or at the nearest affected location of the receiver's property which is deemed appropriate.

The allowable intrusive noise level limits are to be corrected as indicated below.

Corrections for Intrusive or Intermittent Noise

Type of Correction	Circumstances of Corrections	Correction[a]
Seasonal	Summer or year round operation	0 dBA
	Winter only	+5 dBA
Tone or Impulse Characteristics	No pure tone or Impulsive Character	0 dBA
	Pure tones[b] present in noise	-5 dBA
	Impulsive, Repetitious or Modulated[c] noise	-5 dBA

a. Correction to be added to the measured or predicted L_{eq} of the potentially intrusive noise source
b. Tonal element exists when the 1/3 octave noise level of the tone is 5 dB greater than the average level of the two adjacent 1/3 octave bands.
c. Either in amplitude, frequency and/or duration.

Greg Desmond

From: Ann Nevero [ann@decisionapplications.com]
Sent: Friday, May 21, 2010 4:59 PM
To: Greg Desmond
Subject: Questions for the EIR

Hi Greg-

I think today is the deadline for input to the EIR. Here are mine for submittal.

Thanks much and have a great weekend!
Cheers,
Ann

Public Comments and Questions for the St Helena EIR

EIR's ascertain the Environmental Impact to an area and the inhabitants. The choice of one's living environment can range from bustling city life, to active suburban to quiet rural slow-paced. Therefore, the EIR for a rural town should include environmental impacts that are vital to living in a rural town, and not evaluate impacts using standard City or Suburban assessments. Some topics and questions that should be included in the St Helena EIR:

1 - **Protection of Privacy** - How will rural residents' privacy be ensured with the new General Plan's focus on reduced setbacks and higher density building guidelines?

2 - Protection of Viewsheds, Light and Air - St Helena is a rural town with world-renown viewsheds of mountains, vineyards and open space, where residents knowingly choose to live with reduced access to stores, services, etc. as a trade-off in order to have a rural lifestyle. The 2030 draft General Plan reduces previous GP statements for the need to respect rural residents' living choices by ensuring new building does not infringe on views, light and air. How will the new GP ensure rural residents are not negatively impacted by the increased height allowances, reduced setbacks and higher densities so strongly stated? When the choice must be made between development and negative impact to residents and their privacy, light, air, views, etc., how will the verbiage in this GP guide decision-makers?

3 - **Impact on Water restrictions and other resources** - How will the new GP accommodate the nearly 1000 housing units and proposed business growth without ensuring adequate water into the next 50 to 100 years at minimum? How will an adequate water source be ensured to support this permanent housing and business growth without impacting water supply to residents and the Wine/Agriculture industry so vital to local economy and jobs? What level of additional restrictions and costs will be required from the community in order to accommodate new development?

4 – **Impact of Increased Shopping Facilities** – How will the GP allow for the necessary increase in basic shopping and services to serve an additional 1000 to 2500 residents? Clothing, electronics, toys, food options, housewares, etc. are not readily available in St Helena, but are needed, especially by those without sufficient auto transportation. If shopping and services are not provided locally, what impact will the additional traffic and carbon emissions have? If they are provided locally, what will that do to the character and rural environment of such a small City?

Greg Desmond
City of St. Helena
Planning Dept
1480 Main Street
St. Helena, CA 94574

RECEIVED
MAY 21 2010
CITY OF ST.HELENA

Dear Greg,

As requested at the recent city council meeting on May 4th, we wish to submit to the EIR consultants, some of our concerns regarding the upcoming General Plan EIR:

1. PROTECTION OF HISTORIL VIEW SHEDS:

With the proposed extension of several roads near and through some vineyard areas, we could lose some of the last historic view sheds in our town. These landscapes are enjoyed and treasured by our residents on a daily basis. Children, adults and seniors have walked and ridden bikes through open space paths with views of Mt. St. Helena since the town's early beginning. As a quiet buffer between our local city noise and traffic, these areas increasingly provide a place of respite for all ages. These spaces also give our small town its sense of place and unique character.

Additionally, Fulton winery, one of the state's earliest wineries is part of a our town's historic landscape. The winery is the oldest continuously owned and operated family vineyard in California. Surrounded by the original, native oak trees, a replica of the old Fulton winery was recently built alongside the restored tank house and original farmhouse. With Mt. St. Helena behind this silhouette, it makes a beautiful scene with the surrounding vineyards. (see attached page for additional info on Fulton Winery—provided by [redacted] winery's website)

Our group is concerned that this historic and naturally beautiful site will be severely compromised with the addition of a new road nearby and the increased noise that comes with it. Will that quiet, contemplative path alongside the beauty of nature no longer be available for our residents?

2. PRIVACY:

The proposed extension of roads along with the proposed higher density building will greatly impact privacy of every neighborhood in the vicinity of these high density/impact developments (Mercy and/or Hunter).
Quiet streets where children play will be inundated with 100s of cars as a result of these developments. In these 100s of cars will be 100s of people, some from St. Helena, others, tourists, taking short cuts. Most of them will no longer be immediate, known and trusted, neighbors.

Second story homes built close to single-story homes creates less privacy especially with smaller set-backs. Following a grid formation of roads will also bring more traffic through areas of town that have little now. It will most likely become less safe for children to play or ride their bikes in front of their homes.

3. WATER AVAILABILITY:

What regulation or monitoring of usage for private wells is done currently? Has there been an increase or decrease in recent years as to the water provided by these wells? What records or documents have been used to compile these findings? If none exists, how can we judge what the impact will be on residents, businesses and agriculture, if these wells become unable to provide an adequate amount of water to their users. How will that impact our other sources of water for a growing population?

What will be the relationship and interaction with the City's Water Task force concerning the EIR?

4. HOUSING:

What is the actual, fact based demand for housing in St. Helena? What has affordable housing accomplished for St. Helena thus far? (Housing for local workers, fewer vehicle miles traveled, impact on local services?)

What businesses would encourage the best jobs and housing balance in St. Helena? (Clearly one should strive for fewer, higher paying jobs.)

What would be the difference in environmental impact between larger, "high impact" developments and lower impact strategies like mixed-use, second units, upgrading existing stock and small infill projects?

What would be the difference in environmental impact between auto-centric street extensions as proposed, versus developing a pedestrian/bicycle based infrastructure?

Large, conventional development like Mercy or Hunter is outdated. There are better, smarter, smaller scale approaches to increasing housing stock that wouldn't have such a profound and permanent impact on Saint Helena's small town character. I think the General Plan should expressly state a preference for effective, lower impact strategies like mixed use, infill, upgrades and second units---all in close proximity to Main Street; and it's why I think the General Plan should expressly state a preference for pedestrian and bicycle solutions over new roads.

On May 18, 2010, there is an article in the SF Chronicle about new, lower cost, smaller square footage, green building strategies, which, if done in an aesthetically pleasing way, could work in Saint Helena. Bob Massaro of Healthy Buildings (building a small, zero energy housing development in Yountville) has expressed an interest in looking at solutions. A city appointed Housing Subcommittee,

(See Attached copy of article)

like the "Infrastructure Subcommittee" might be helpful in defining the true housing need (which no one seems to know) and "small town smart growth" strategies.

New sidewalks constructed for new housing, must be designed to provide continuous, safe, level access for those in wheel chairs, strollers, on roller skates, walking with assistance (canes, walkers), and seniors and/or others, whose physical abilities are compromised. The incline provided for auto access should not interrupt this level walk way. Nearly every sidewalk in St. Helena does not meet these standards.

One of the items we should not overlook is the relative cost of developing the Opportunity Sites, and what improvements will need to be made to city infrastructure at each site to develop the number of units anticipated by the RHNA numbers and the 2030 GP. Each site has its own unique set of requirements, including an enormous amount of underground activity that is not apparent, possible offsite improvements such as widening streets, signals, approaches to bridges, drainage and runoff and its affect on the Napa River, other waterways, and drainage in the surrounding areas.

We should know what the cost of developing each site is, including the other impacts like, fire, police, schools, etc.

THINGS TO KNOW ABOUT STATE REQUIREMENTS FOR HOUSING

1. The state mandates that one hundred twenty one (121) units be built in St. Helena, by 2014.

   WHAT DOES THAT MEAN?

   This means that we must show that it is POSSIBLE for St. Helena to build 121 units by 2014.

   All but 55 of these 121 units have already been approved by the City of St. Helena. Fifty five remain to be approved. We are currently able to provide opportunity sites for those Fifty-five units to be built as several, small developments. We currently have over 900 opportunity sites available.

If any number of these units is built, the laws regarding the percentage of the units that must be allocated to affordable and work force housing must be followed.

2. ABAG projects that the City of St. Helena will grow .1% between 2010 and 2035, with a net population increase of 100 people (Page 26, Final City of St. Helena Housing Element Update Housing Needs Assessment, 8/27/09).

   WHAT DOES THAT MEAN?

This means that the population increases that would result from the Mercy Housing and/or Dennis Hunter proposed developments, would grossly exceed those projected by ABAG, and, therefore create an internal inconsistency in the General Plan Housing Element as it now reads.

3. ABAG projects the number of St. Helena households will rise from 2,450 in 2010 to 2,600 in 2035, a net increase of 150 households in 25 years (Page 27, Final City of St Helena Housing Element Update Housing Needs Assessment, 8/27/09).

   WHAT DOES THAT MEAN?

   This means that the number of household increases that would result from the Mercy Housing and Dennis Hunter proposed developments, would grossly exceed those projected by ABAG, and therefore create an internal inconsistency in the General Plan Housing Elements as it now reads.

CONCLUSION:

In order to insure internal consistency in the City of St. Helena Housing Element, the size of any housing project should not exceed 8 units per year. At 8 units each year for 25 years, the increase in the number of households would be 200, which is in excess of the current projected ABAG figures by 50 units. As ABAG figures change, so then would this figure. The appropriate percentage for affordable and workforce housing would continue to be enforced.

At 3.5 people per household, the population growth from 200 units over 25 years would be 700. This is 600 more than that currently projected by ABAG, but in keeping with a goal of Limited Impact Growth.

LIMITED IMPACT DEVELOPMENT DEFINITION;

A goal of no more than 8 units/year over a 25 year period. If prorated to a greater number in any one year, no more than 8 units for any one development, over a 25 year period, unless to do so would serve the community of St. Helena, while supporting our commitment to maintain the character of our town and minimize the impact in our neighborhoods, schools, and other infrastructure concerns.

The purpose of the Housing Element should be to protect the City from high impact development in order to preserve to the greatest extent possible, the character and charm of our town, while supporting the industries that add to our prosperity.

Attached is a summary of specific changes to the current Housing Element that would support its

Hunts Grove is owned by the city, and could be used for a small sized, limited impact development if built with lots of open space a park land.

HOUSING ELEMENT COMMENTS

SUGGESTED CHANGES NECESSARY FOR INTERNAL CONSISTENCY BETWEEN THE HOUSING ELEMENT, GENERAL PLAN, AND PRELIMINARY REPORT

HOUSING ELEMENT CHANGES – GOAL I.

1. Page 8, HE1.B, last sentence.

   FROM: "Continue to allow a maximum of 9 market rate units per year and priority allocation of annual building permit allocations and carryover permits to market rate units in development projects that include a minimum of 40 percent affordable units."

   TO: "Continue to allow a maximum of 9 market rate units per year. This number will not be carried over from year to year. Priority allocation of annual building permit allocations of 9 market rate units in development projects that include a minimum of 40 percent affordable units, or a prorated percentage of market rate units and affordable units in smaller developments will be considered. The City's commitment to Limited Impact Development will be a priority.

2. Pages 8 and 9, HE1.C

   FROM: "....With a limitation of 9 building permits for market rate housing per year, issued over 15 years, the number of dwelling units will be approximately 2,840 by the year 2015...."

   TO: "....With a limitation of 9 building permits for market rate housing per year that will not roll over each year, Issued over 15 years, the number of dwelling units will vary, depending on the total number actually built each year."

3. Page 9, HE1.E after the second sentence will be added:

   "Limited Impact Development is a priority in all neighborhoods, and will be the first consideration for all proposed projects."

4. Page 9, HE1.G, second sentence
   "....Funding shall be done on a fair share proportion of the cost."

   DEFINE "Fair share"

5. Page 10, HE1.I.

   CURRENTLY READS: "Complete the Flood Protection Project. Complete land purchase and proceed with construction activity."

QUESTION: Does this mean that the Dennis Hunter Project has been approved without public input?

6. HE1.J, HE1.K, HE1L.

   CHANGE PROPOSED: Add this sentence to the end of each item: "Our commitment to Limited Impact Development will be given priority in all decisions."

7. Page 11, HE1.S. Second sentence.

   FROM: "Amend the St. Helena Municipal Code to treat single-room occupancy developments as a permitted use within the High Density residential zone, subject to the same permitting process and regulations as any other multifamily development."

   TO: "Amend the St. Helena Municipal Code to treat single-room occupancy developments as a permitted use throughout the city, subject to the same permitting process and regulations as any other multifamily development."

GOAL 2: EFFICIENT LAND USE AND HIGH QUALITY NEIGHBORHOODS

1. Page 12, HE2.1

   FROM: "Encourage higher density development where appropriate."

   TO: Encourage Limited Impact Development at all times.

2. Page 12, HE2.2

   FROM: "Ensure that higher density housing opportunity sites are not lost to lower density uses."

   TO: Ensure that Limited Impact Development housing opportunity sites take preference over higher impact uses.

3. Page 12, HE2.3

   FROM: "Be more aggressive in promoting mixed-use developments."

   TO: Be more aggressive in promoting Limited Impact Developments for all developments, including mixed use.

4. Page 12, HE2.A

FROM: "Provide incentives for higher density housing."

TO: Provide incentives for Limited Impact Development.

5. Page 12, HE2.B

   FROM: Study potential modifications to the Zoning Ordinance to facilitate higher density housing [and discourage construction of oversize homes]. Modify the Zoning Ordinance to encourage higher density developments [and restrict construction of large single-family units], including current floor area ratios and yard and setback requirements."

   TO: Study potential modifications to the Zoning Ordinance to facilitate Limited Impact Development [and discourage the construction of oversize homes unless they provide affordable/workforce housing prorated to their size, somewhere on the property]. Modify the construction of large single-family units, unless they accommodate affordable/workforce units prorated to their size somewhere on the property].

6. Page 12, HE2.C.

   FROM: "Amend regulations to discourage exemptions from the minimum density requirements. The City shall discourage exemptions for minimum density requirements and establish mitigation measures for exemptions in the Zoning Ordinance."

   TO : Amend regulations to discourage exemptions from Limited Impact Development requirements. The City shall discourage exemptions for high impact requirements and establish mitigation measures for exemptions in the Zoning Ordinance.

7. Page 12 and 13, HE2.E

   FROM: "Amend the "Subdivisions" section of the Municipal Code. The City will amend Title 16 of the Municipal Code to prevent subdivision activity from effectively resulting in lower densities and a loss of potential housing units on the site."

   TO: Amend the "Subdivisions" section of the Municipal Code. The City will amend Title 16 of the Municipal Code to prevent subdivision activity from interfering with the City's commitment to Limited Impact Development.

8. Page 13, HE2.G

FROM: "Promote both 'vertical' and 'horizontal' mixed use. Encourage mixed use developments that combine compatible uses on the same site, either in ...."

TO: Promote Limited Impact Development when considering both 'vertical' and horizontal' mixed use.

OPPORTUNITY SITES

Starting on page116 of BAE final update, the following opportunity sites are listed with the range of units associated with each site. Rezoning to support smaller developments dispersed throughout town, need to be explored. It is projected that we will need approximately 400 units by 2030. If we add a high density opportunity site west of Hwy 29, we can lower the zoning and unit ranges of the properties listed below.

1. Hunter Property (medium Density Residential 17.1 ac. Unit range 87-274)
2. Romero Property (medium density residential/10ac unit range 51-160)
3. Particelli Property (medium Density Residential/88 ac. Unit range 40-127)
   "This parcel is directly south of the Romero Property and contains a residence and vineyards. Development of the site will require improvements to traffic circulation with the extension of McCorkle Avenue and Starr Avenue as shown on the General Plan. Water, sewer, and storm drain are available from McCorkle Avenue. The future extension of Starr Avenue will provide additional services to the site. The property will not need either a General Plan Amendment or rezoning to facilitate residential development.
4. Dickson Property (medium Density Residential/1.5 ac. Unit range 8-24)
5. Paladini Property (medium Density Residential/5.3 ac. Unit 27-85)
6. Quaglia Property (medium Density Residential/4.4 ac unit range 22-70
7. Aves Property (medium density residential/4.6 ac. Unit range 24-74.
8. Jatsek Property (high density residential/.54 ac. Unit range 9/15.
9. Asianian Property (high density/2.4 ac. Unit range 38-67
10. Montelli Property (medium density residential/1.75 ac. Unit range 19-28
11. Adams St Property (CBD & AG/5.6 ac. Unit range 30 +.

QUESTIONS FOR THE EIR CONSULTANTS REGARDING HOUSING AND CIRCULATION ELEMENTS:

1 – Why the significant push for a grid of streets?

2 – Why so much language/implementing actions in favor of high density building? (a mismatch to the vision of "keeping the small town charm and character")

3 – Why doesn't the GP promote more parks for our residents? (our 20 year goal is just barley over half the Natl Parks/Rec Assoc recommendation)

4 – What economy was used for the "2 jobs for every resident" statistics? Since this is the impetus for growth, shouldn't we look realistically at the economy and not use the inflated "bubble" economics of the early 2000's for our 20 year plan? Can we re-assess before going forward with old data?

5 – What are the actual numbers for WFH and AFU needs that exist today? What criteria were used to determine those numbers?

6 – A lot of people attended PC and CC meetings regarding the Housing Element and spoke out against higher densities – what changes were made to the Housing Element and General Plan as a result of any public comments?

NOISE:

The increase in noise pollution for neighborhoods along road extensions proposed to accommodate high impact developments (more than 15 units per development), needs to be studied. Noise from tires and engines, especially the former, would dramatically change the quality of life for neighborhoods along these road extensions. By building smaller numbers of units, dispersed throughout town, no road extensions would be necessary, and the increased noise pollution from smaller developments, would be equal only to the increased number of vehicles from the development itself.

CLEAN AIR:

With more building, whether one home, clusters of 4-12 units, clusters of 25- 50 units, whatever building goes on in St. Helena, including hotels and spas, we can no longer allow fireplaces in new construction. If we want the air in St. Helena to stay healthy during the cold weather, we cannot allow any more wood burning in new construction, unless that is the only source of heat for this new construction. If we don't regulate this kind of construction now, we will lose one of the most treasured and important qualities that Saint Helena offers – CLEAN AIR.

PUBLIC SERVICE

Our volunteer fire department is able to adequately serve our town now. In order to avoid the expense of a municipally funded fire department, and either the expense or reduced availability of police protection, we need to grow slow and in small numbers. Large developments that increase our population by hundreds of people a pop, will be detrimental in terms of these public services.

We are sincerely yours,

Barbara Monnette

Barbara Monnette (707) 963-2840

Kathy Coldiron

Kathy A Coldiron

who we are

[Page 1 of 8]

today

A small historic winery of the Napa Valley and vineyard of antiquity, the name David Fulton literally stands for ultra premium, estate bottled Petite Sirah. Consistent for rich smooth flavors, our wines have repeatedly received accolades from noted experts in the field. In 2009, the Fulton family will be pleased to announce the first release of a late harvest, port-like Petite Sirah wine. In 2010 we will celebrate our 150th anniversary. Coinciding with the celebration we will release a limited number of vertical sets of wines that extend back to our 1999 Vintage.

With regard to the winery, we are located just a short walk to the east from downtown St. Helena. Ours is a recently restored winery tucked beneath three large valley oaks (Quercus lobata). A replica of the old Fulton stone wine cellar, the three story building sits at the northwest edge of the family vineyard. A few yards to the west are two large sentinel palm trees, a restored tank house and David Fulton's original, historic farmhouse. The 14.5 acre vineyard itself stretches south from this point as if to run away from Mount St. Helena, a vast silhouette looming to the north and reminding us of its once violent volcanic nature. This romantic setting of old head trained vines enjoys early morning fog, warm afternoons and cool night air of the northern Napa Valley as well as the rich igneous alluvial soil of the local appellation.

Only a small number of cases of Petite Sirah are produced by the estate to distribute primarily to fine California restaurants, specialty wine shops and private collections. For the last couple of years a much smaller quantity of our wines have been placed in Boston and New York City.

A portion of a prefab house built in Zeta's factory near Sacramento waits to be placed on a trailer and shipped out.

REAL ESTATE

Tiny prefab units latest green trend

By Robert Selna
CHRONICLE STAFF WRITER

A young San Francisco company that makes prefabricated housing is set to provide multifamily buildings for two urban Bay Area projects that its development partner hopes will become a model for eco-friendly construction.

Zeta Communities will construct the housing for the 22-unit developments, planned for parking lots in Berkeley and San Francisco. The projects will feature tiny living spaces — 310- to 340 square-foot studios — and no parking. Instead, they will include a car-sharing space.

The proposed four-story projects are the first foray into prefabricated housing for East Bay developer Patrick Kennedy of Panoramic Interests.

He said the construction technique conserves resources because fewer materials are wasted in a precise, factory building process, and the housing can be completed far more quickly than the conventional on-site approach. He chose two parking lots for development sites, he said, because they were perceived to be too small for other uses and are close to public transportation.

"I've done about 15 projects, and I've

Prefab continues on D6

Todd Trumbull / The Chronicle

BUSINESS The Chronicle with Bloomberg

Latest eco-friendly trend — tiny prefab living unit

Prefab from page D1

always been exasperated at the huge amount of time and money a developer spends just to build a studio apartment or a one-bedroom as a one-off project," Kennedy said. "Teaming up with Zeta makes the process more like manufacturing and might provide the answer for producing multifamily housing in a better, cheaper, faster and greener way."

Kennedy noted that Bay Area cities are trying to cultivate affordable housing, while at the same time hoping to avoid the kinds of land use fights that have become common in San Francisco, where environmental concerns, such as building height, shadows and parking, come with high-rise housing plans.

Urban market

A number of other companies build energy-stingy, prefabricated single-family homes. But Zeta hopes to capture the market for urban, multifamily townhomes, lofts and apartments that are affordably priced and complement environmentally conscious smart growth planning, in which dense development is concentrated near public transit. The company opened its headquarters in San Francisco in 2007 and a factory near Sacramento last year.

Zeta aspires to produce homes that create as much energy as they consume by using insulating construction materials, efficient appliances and a monitoring system that manages temperature and ventilation and tracks energy use. The company has completed and sold a two-bedroom demonstration project in Oakland and has contracts for other housing and school projects around the state. Kennedy's projects could be its first complete housing developments.

"There's such limited demand for buildings of that size without parking ... it's like a college dorm concept."

Eileen Bermingham, San Francisco real estate agent

The San Francisco homes would be marketed as condos; the units in Berkeley would be rented.

But while most agree that placing dense housing on underused inner-city spaces is good for the environment, it remains unclear whether enough people will buy or rent such small units. A handful of micro-lodging developments have sprung up around the Bay Area in recent years, but they seem to appeal to a very narrow demographic slice, said San Francisco real estate agent Eileen Bermingham.

Bermingham said Kennedy's project might lure young people buying their first home. However, that group often gets financial help from their parents, who are concerned with how much a property will appreciate over time. Undersized homes generally have limited appreciation, she said.

"San Francisco is not as dense as Tokyo, where they do housing with very small units," Bermingham said. "There's such limited demand for buildings of that size without parking ... it's like a college dorm concept."

Micro projects aren't the only solution for affordable and green housing, but they are a key component, said Sarah Karlinsky, deputy director at the San Francisco Planning and Urban Research Association.

"With units like this, it becomes affordable for singles and first-time home buyers to get a toe-hold in the market that they otherwise wouldn't have access to," Karlinsky said.

Young workers

Kennedy's San Francisco project is located South of Market at 38 Harriet St. on a parking lot that is only about 3,750 square feet. He said he hopes to attract young workers at nearby high-tech firms. He expects to sell the units for $200,000 to $275,000 and said the costs for the project, including land, construction and permits, will be about $4.7 million.

The development awaits the city planning

rg

Photos by Brian Baer / Special To The Chronicle

Ernie Maumasi, above, works on the exterior of a house at Zeta's factory near Sacramento. Left: Plumber Jose Ortiz wheels himself under a unit to work on pipes.

and building bureaucracy. San Francisco planner Jeremy Battis said the project did not appear to present any environmental problems.

The Berkeley project, at 2711 Shattuck Ave., is for 22 rental units and is close to receiving its final approvals.

Both Kennedy's and Zeta's business plans coincide with recognition by the state and federal government that housing is a major contributor to global warming. It is estimated that homes are responsible for 22 percent of annual energy use in the United States.

The operation of all building types represents 50 percent of carbon dioxide emissions — resulting from the production of energy needed to heat and cool buildings and run lights and appliances. With those statistics in mind, the U.S. Department of Energy and the California Public Utilities Commission recently announced goals that all new homes not use more energy than they create by 2020.

While prefabricated housing saves materials and time, it has come under some criticism because completed housing segments must be shipped, typically by truck, to a property for assembly.

Zeta CEO Naomi Porat said that while shipping is necessary, it generally requires far fewer truck trips than building homes on a development site.

"With conventional building, you have multiple deliveries from multiple sources," Porat said. "Instead, our products are coming from the factory to the site with only a few trips."

E-mail Robert Selna at rselna@sfchronicle.com.

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RECEIVED
PLANNING DEPARTMENT
MAY 24 2010
City of St. Helena

May 21, 2010

Sent via First Class Mail, Fax (707) 963-7748
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Carol Poole, Planning Director
City of St. Helena
1480 Main Street
St. Helena, California 94574

Attention: Greg Desmond, Senior Planner

Re: Comments to Notice of Preparation ("**NOP**") of a Draft Program Environmental Impact Report ("**PEIR**") for the St. Helena General Plan Update 2030

Dear Carol:

I have reviewed the NOP referenced above, and this letter shall constitute my written response thereto.

My comments and observations to the NOP are as follows:

1. The State of California per the Governor's Office of Planning and Research, and the State Clearinghouse and Planning Unit drafted a letter on April 28, 2010 to its reviewing agencies, which letter identifies the following "Project Issues";

- Archaeologic-Historic;
- Air Quality;
- Drainage/Absorption;
- Flood Plain/Flooding;
- Forest Land/Fire Hazard;
- Geologic/Seismic;
- Minerals;
- Noise;
- Population/Housing Balance;
- Public Services;
- Recreation/Parks;
- Schools/Universities;

- Sewer Capacity;
- Soil Erosion/Compaction/Grading;
- Solid Waste;
- Toxic/Hazardous;
- Traffic/Circulation;
- Vegetation;
- Water Quality;
- Water Supply;
- Wetland/Riparian;
- Wildlife;
- Growth Inducing;
- Land Use;
- Cumulative Effects;
- Agricultural Land;
- Aesthetic/Visual; and
- Biological Resources

To the extent there is any inconsistency with, and/or otherwise a lack of study of, the above-identified Project Issues with regard to the "Potential Environmental Effects" (as designated in the NOP), I request that said issues be studied and otherwise reconciled.

2. With respect to the proposed project's (PEIR) potential impacts on agricultural land and resources, the City should consider requiring significant open-space setbacks, no-occupant structure feathering buffers and other mitigation measures such as "No-Build" areas when a high-impact development project abuts, on one or more of its borders, ongoing agricultural operations, such as vineyards. Moreover, to lessen the impact on agriculture and otherwise preserve the loss of agriculture land, the City should consider creating contiguous, low-density buffer zones (including interspersed areas that only have no-occupant structures) on potential residential/commercial build-out lands abutting agricultural operations/lands. Furthermore, the City should review the appropriateness of height limitations and parking restrictions for multi-family housing that may be developed near, adjacent to, and/or otherwise affecting agricultural operations/lands; a local government does not violate state law when considering such restrictions as part of any General Plan process or growth management program. [See *Hernandez v. City of Encinitas* (1994) 28 Cal. App. 4th 1048].

In particular, there should be a sufficient distance between residential/commercial build-out lands and agricultural operations/lands so as to lessen development pressure on, and neighbor/occupant complaints about, the noise and other effects of being adjacent to agriculture operations/lands. The primary example for the need for this type of mitigation and review is demonstrated by the City's Housing Element designating properties, including the Romero Property(Mercy Project), as a Key Opportunity Site ("**KOS**"), for medium to high density residential development. The NOP refers to Table 7 for the Capacity of Pipeline Project Sites, wherein, at footnote #2, it indicates that the

Mercy Housing Project is proposed for 98 units. The recent proposals submitted by Mercy Housing fail to indicate the types of buffers and/or setbacks discussed above along its easterly border, which border currently abuts an ongoing vineyard operation. The effect of the Mercy Housing Project on this agricultural operation/land needs to be studied with this concern in mind.

3. Consistent with Item #2 above, the PEIR should have an Open-Space element (although it may be intended that such will be included and studied under the Land Use category of study), and I note that a study area addressing this issue is not directly specified in the topic issues delineated in Item #1, above, and the NOP, but does otherwise exist in the current General Plan.

As you are aware, Government Code Section 65563 requires general plans to have an Open-Space element to promote the "...comprehensive and long range preservation and conservation of open-space land." As such, the PEIR should identify plans and measures for preserving open-space for natural resources, for resource production management, outdoor recreation, and public safety and health [See Government Code Sections 6502(e); 65560-65568]. In particular, properties that border agricultural lands or otherwise present open-space opportunities, irrespective of the preliminary designations as a KOS, should be considered for their contribution to, or adverse impact on, the loss of open-space. The City should consider that open-space land, even when such is proposed to be incorporated into a residential project, is a "... limited and valuable resource that must be conserved whenever possible." [See Government Code Section 65562(a)].

An additional area of study to effectuate this goal should be an "Action Program" that identifies how Open-Space element goals will be achieved. [See Government Code Section 65562(b)]. As part of that "Action Program", and in addition with the City's review of its open-space plan, the City should be cognizant of the special importance that open-space protection carries as the result of California Constitution Article XXVIII, which declares that "...(paraphrased in part) it is in the State's best interest to preserve open-space land."

4. With respect to the Transportation and Traffic study topic identified in the NOP, I would like to remind the City that beginning January 1, 2011, when a circulation element may be subject to a substantive revision, there must be a plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel that is suitable to and under the rural, suburban or urban contexts of the General Plan. [See Government Code Section 65302, et seq]. As such, the Transportation and Traffic topic study should include the aforesaid factors.

In particular, the Mercy Housing Project has advocated, as have certain members of City staff, for the connection of Starr Avenue through the Romero Property to McCorkle Avenue, which avocation was rebuked on November 9, 2009 by the City's General Plan Update (traffic sub-committee) Steering Committee. The reasons cited in the minutes by said committee should be fully included in and otherwise made part of this study topic.

For instance, it was determined (in part) that, because Starr Avenue would necessarily serve as a major thoroughfare and McCorkle Avenue was ill-suited due to its undeveloped and narrow nature, along with a strong community desire to retain its traditional rural residential character, that it would be both unsafe and destructive to the neighborhood surroundings to channel not only the expected existing traffic to and from Starr Avenue but also the significant increase in traffic from the Mercy Housing Project on this quiet residential street; the level of service (LOS) for this connection would be expected (at times) to be less than a C rating.

In addition, we believe that (at times) Pope Street at the Pope Street Bridge operates at (minimally) or below a LOS of C. The development of any large parcel/development project adjacent to, or that would otherwise directly access Pope Street at or near Starr Avenue, will have an immense adverse impact on both Starr Avenue and Pope Street, along with its current use as a vital corridor between Highways 29 (Main Street) and 121 (Silverado Trail).

Furthermore, this topic of study should be coordinated with the study (and reviewed in light) of any applicable congestion management programs, whether such be state, regional or county applicable. To the extent applicable, this topic should include a review of any correlation to, adequacy of, and consistency with, the Regional Congestion Management Plan.

5. As you know, the City's General Plan acts as a blueprint, and to a degree is its constitution, for orderly development. In that regard, the City's zoning ordinances must be consistent with the General Plan and otherwise amended to maintain such consistency when the General Plan is amended as a result of the PEIR. [See Government Code Section 65860(a)]. Although the City has a certain period of time after the General Plan is amended to amend its zoning ordinances to be consistent therewith, such practice is fraught full of problems and potential roadblocks for orderly development, especially for a KOS, including any Pipeline Project. Government Code Section 65860 establishes one of the two requirements for the consisting of zoning ordinances as follows: "(paraphrase) (t)he land uses that are authorized by the ordinances shall be compatible with the policies, objectives, programs, and general and specified uses in the General Plan." The City is not a Charter City, and as such, is not exempt from this consistency requirement.

Furthermore, a failure to study the zoning ordinance consistency will necessarily put the PEIR at risk for, and subject it to, potential legal challenges; therefore, it seems prudent and cost effective that this area be included as a topic of study, along with then coordinating a contemporaneous update of the City's zoning ordinances for consistency with the updated/amended General Plan.

A prime example of the problem of inconsistent (updated or not) zoning ordinances, is when a high-impact project (e.g., the Mercy Housing Project) advocates in its application that it will meet or otherwise implement the applicable General Plan goals and policies,

but is later able to interpret such implementation when there is a lack of a consistent set of zoning ordinances addressing the nature, scope and character of that implementation. For instance, as noted in Item #2 above, there are currently no adequate zoning ordinance requirements necessitating the type of setbacks and/or open-space buffers when a high-impact project affects on ongoing agricultural operations/lands in or adjacent to the City's RUL. In other words, a failure to update the City's zoning ordinance simultaneously with the General Plan Update can put, by interpretation and application, its Circulation element and/or Open-Space element at odds with its KOS's objectives and policies; again subjecting the same to later challenge and otherwise potentially undoing much of the City staff's hard work put into the PEIR.

Furthermore, as part of the review of the City's zoning and Land Use element, the PEIR should study the consistency of such with regional planning legislation and the impacts thereon or caused thereby. Therefore, regional planning issues, and the potential impacts thereof, should be reviewed as part of this study topic.

In addition to General Plan/zoning ordinance consistency issues (as discussed above) there is the potential problem with certain General Plan elements not being sufficiently correlated and otherwise contradictory. The court in *Concerned Citizens of Calaveras County vs. Board of Supervisors*, (1985) 166 Cal.App.3d 90, found that when a General Plan did not fully address the prospect that state highways may be inadequate to handle traffic generated by inevitable population growth, or otherwise failed to contain any objective standard by which impact growth could be restricted, then the Circulation and Land Use elements were insufficiently correlated on their face; as such, they were found to be internally inconsistent and contradictory. For instance, the Court further found that, conversely, its Circulation element clearly set forth the problems associated with state highways caused by the projected traffic; thus, the "...(paraphrase) adoption thereof was arbitrary and capricious."

An example of this problem (as noted in part in Item #4 above) can be found in high-impact projects such as the Mercy Housing Project, wherein it will have an immense, adverse impact on Pope Street, the Pope Street Bridge, the Starr Avenue/Pope Street intersection and the use of Pope Street as a vital connector between Highways 29 (Main Street) and 121 (Silverado Trail). It is critical that, both as part of the Traffic and Transportation study topic discussed in Item #4 above, and as part of this study topic, this impact and the inadequacy of the Pope Street bridge (which is the weakest link in this connector) and Starr Avenue/Pope Street intersection be fully addressed thereunder.

6. Although the NOP identifies Hydrology and Water Quality, it is not clear that such category will include a review of the City's water supply, drainage, sewer capacity and flood control/impact issues. Rather than break those four elements into separate items, this concern is addressed inclusively in this Item.

As required by Government Code Section 66473.7(a)(2)(A)-(D), the City, as the water agency, must consider a variety of factors in determining whether water supplies

(and sewer capacity) will be sufficient to serve planned growth. Unfortunately, the City has a (spotty) history of approving single-family home projects of one to five units without fully weighing the full impact of those projects on their need to meet its regional housing needs water/sewer allocation, including but not limited to its ability to serve affordable housing projects. In other words, there have been full market-rate houses approved and built at the expense of water/sewer allocation supposedly reserved for affordable housing. It is too late to "turn the clock back" to restrict the use of those approved projects and any commercial projects that may now have created an insurmountable burden for any large scale project (such as the Mercy Housing Project).

The City must consider this topic area in light of projects already built, or approved but yet to be built, before it allows any development of a KOS or other large parcel when there may not be sufficient water/sewer resources. In essence, a site probably should not have been designated as KOS if it is in name only or otherwise adversely impacts the water/sewer allocation reserved for approved affordable housing projects such as Magnolia Oaks. Unfortunately, it now appears, that the approval of any high-impact project (e.g. the Mercy Housing Project) will need to demonstrate it can comply with strict water/sewer mitigation measures that go beyond those that were imposed prior projects, and, perhaps, identify new sources of water that may be obtained from fresh sources and/or the State Water Project/City of Napa and sewer capacity enhancements.

As part of this study topic, the City's Urban Water Management Plan and Capital Improvement Program should be extensively reviewed and should otherwise specifically address how KOSs can be served, along with other contemplated growth (commercial and residential). Notwithstanding any limited statutory CEQA exception under Water Code Section 10652, the aforesaid factors demonstrate that these Pipeline Projects or identified KOS projects will significantly affect water supplies, and otherwise cause a need to expand existing water resources and enhance existing sewer capacity. Therefore, the City's Urban Water Management Plan and Capital Improvement Program should be correlated and updated simultaneously with the City's General Plan Update.

Furthermore, the City studied both drainage and flood-control issues in an EIR prepared in 2004, which was updated in 2006 (based on funding issues); thereby, the City specifically developed a Comprehensive Flood Control Project in conjunction therewith. Building on the theme of consistency, this PEIR/General Plan Update should set forth how applicable KOS's (including the Mercy Housing Project) work to promote, or otherwise potentially conflict with, the objectives/goals of this Comprehensive Flood Control Plan. According to the Napa River Council's website, it is noted that, while the City has adopted flood-control measures, it has yet to take any concrete building steps to implement the same.

Moreover, as you may be aware, the City may be required to contribute its fair and reasonable share of any property damage caused by a flood, including to the extent that it increased the State exposure to liability for property damage by (unreasonably or not

thoroughly studying) approving new development in a previously undeveloped area. [For analogous law on the subject see Government Code Sections 65302.9, 65860.1, 65865.5, 65962, and 66474.5]. As such, the City, as part of the PEIR, must ensure that its updated General Plan is consistent with its Comprehensive Flood Control Project and any applicable State Plan for such.

In particular, the Romero Property is already a large drainage contributor to the Napa River floodway zone at, and continuing south from, the Pope Street Bridge. As such, any potential development on the Romero Property, and/or any similarly situated property, should be studied for these impacts (including absorption when so much of its current natural drainage/absorption will be lost/reduced on build out) and so as to otherwise be correlated and consistent with such flood plans.

I note that, per the Department of Fish and Game ("**DFG**") letter dated April 19, 2010, the City is reminded that "(f)or any activity that will divert or obstruct the natural flow or change the bed flow channel or bank (which may include associated riparian resources) of a river or stream…" a Lake or Stream Bed Alteration Agreement may be required by the DFG. As such, the DFG notes that a CEQA document will be required. However, that letter was not clear in requiring the PEIR to study the potential need for these types of agreements and any and all associated riparian resource impacts with respect to any particular planning area or site. I believe that development sites that are in close proximity to riparian resources, stream channels or rivers should be a study area under the PEIR; in particular, as noted above, the Romero Property, both because of its size and drainage pattern (along with the lack of any existing drainage system between it and the Napa River) exemplifies the need for this type of study.

Finally, as part of this study topic, the City should review the need and the scope of existing land use regulations that manage flood plains and/or flood prone areas. [See the Cobey Alquist Flood Plain Management Act, Water Code Sections 8400-8415]. In addition, the PEIR should identify and study any inconsistencies between any of the projects identified in Tables 3, 4, 5 and 6 of the NOP and the provisions of any applicable plan relating to flood prevention. [See 14 Cal. Code Regs. Section 15125(d)].

7. Although the NOP identifies Biological Resources as a study area, and the DFG in its April 19, 2010 letter, has demanded a complete assessment of "…habitats, flora and fauna…including endangered, threatened and locally unique species and habitats,…", there should be an expanded study that includes the habitat sustainability for fish and wildlife species, the self-sustaining levels of fish and wildlife populations, the impacts that may eliminate a plant/animal community, and/or those that restrict the range of such species. The guiding light on this topic was enunciated by the court in *San Bernadino Valley Audobon Soc'y v. Metropolitan Water Dist.* (1999) 71 Ca.4th 382.

As part of this study, needed and/or potential mitigations should be considered and reviewed. As such, the PEIR should consider whether to adopt and otherwise implement needed habitat conservation and/or natural community conservation plans. Although

CEQA guidelines do not specify a particular threshold of "significance" that must be used to evaluate such impacts, a starting point for such determination can be found in the standards elicited in 14 Cal. Code Regs. Section 15065a(a), that trigger the preparation of an Environmental Impact Report.

8. As you may know, the integrated Waste Management Act of 1989 requires local governments to reduce solid waste disposal by fifty percent (50%). As part of that process, Napa County has adopted an Integrated Waste Management Plan. I note under the NOP that there is a failure to specify the study of Waste Management, and only the mention of a sub-category of Hazardous Materials. As noted in Item #1 above, Solid Waste is another topic related to this study area.

This topic should include a review of the applicable zoning and siting ordinances existing or otherwise needed to be adopted by the City under the PEIR. [See Health and Safety Code Section 2513.7(b), (c)]. The KOS identified in Table 6 of the NOP projects 514 housing units, while Table 1 projects 2.43 persons per housing unit for Pipeline Projects. Assuming the same per unit person multiplier applies to the aforesaid 514 units, the population increase would result in at least an eighteen percent (18%) population growth. Moreover, Table 5 projects commercial square footage of 122,218 square feet, which commercial developments will have the obvious impact of contributing significantly to the waste stream. As such, the PEIR should study how the both waste reduction and recycling, along with applicable waste sites, will be addressed and otherwise implemented/coordinated with the Land Use and Circulation topics to be studied.

9. Although the NOP identifies greenhouse gas emissions, I want to remind the City that this topic is specifically affected by AB 32, the California Global Warming Solutions Act of 2006 [see Health and Safety Code Sections 38500-38599], and Senate Bill 375 [also see Public Resources Code Sections 21155-21155.3 & 21159.28]. This area is new and evolving area of the law; as such, the PEIR should widen its scope of study to encompass all of the policies and goals of these referenced statutory schemes. As part of this expanded study, the City should consider the National Resources Agency's "…'Guidelines' for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions as required by CEQA, including but not limited to effects associated with transportation or energy consumption." [See Public Resources Code Section 21083.05]. Moreover, under these updated guidelines, this topic area should include recent updated information and criteria established by the California Air Resources Board. [See Public Resources Code Section 21083.05(b)-(c)]. Therefore, this study topic should identify the framework for which the City should adopt and implement guidelines (including analysis parameters) in the PEIR consistent with the above. [See (proposed) 14 Cal. Code Regs. Sections 15064.4(a), and 15183.5].

In the City's effort to adopt and implement such guidelines, the City should incorporate the recent proposals by the Bay Area Air Quality Management District that were provided to local agencies for guidance in determining the significance of any development project's greenhouse emissions. Although I am sure the City will adopt

and/or revise current gas emission reduction goals in the updated General Plan, it is recommended that the City study and adopt a formalized greenhouse reduction plan, because such will provide the possible basis for determining the CEQA "significance" of emission impacts. The failure to adopt such plans will most certainly put the City and any developer in a position of uncertainty, especially when analyzing any particular project's cumulative impacts. It is conceivable that a Pipeline project such as Mercy Housing will be stopped in its tracks if such guidelines and a greenhouse reduction plan are not adopted because of the inability to properly analyze its cumulative impacts.

As noted above, SB 375 mandates that there be a link between transportation planning and land use with statewide goals that reduce vehicular greenhouse gas emissions. [See Government Code Sections 14522.1-14522.2]. SB 375 provides for the development of either a sustainable community strategy in a regional transportation plan or an alternative planning strategy outside such a plan as the means to achieve regional greenhouse gas reduction targets. It also seeks to coordinate any regional housing needs allocation process with regional transportation planning. I direct your attention to the final report issued by the Air Resource Board's Regional Targets Advisory Committee which may be viewed on its website. Moreover, as part of this study topic, I encourage the City to review and consider the California Air Resources Board's Scoping Plan that sets forth a mix of various strategies designed to achieve the reduction of greenhouse gas emission levels to 1990 levels by 2020.

In particular, these factors are directly affected by the development projects and growth goals identified in the NOP. Large multi-family projects will necessarily have some of the largest greenhouse gas emissions generating effects; as such, the PEIR should study whether some of the KOS's, including the Romero Property/Mercy Project, are inappropriate designations when it/they is/are not closer to key transportation hubs and retail services currently existing on Highway 29/Main Street.

Having a KOS that is more than a mile from the downtown area and, thus, considered outside a transit hub's sphere of influence (or otherwise not within walking distance of the City's core downtown) seems short sighted and destined to significantly contribute to the growth, and not the reduction of, greenhouse gas emissions. Moreover, one can well imagine that with the traffic impact and reduction in the LOS that will surely be caused by the Mercy Housing Project, there will be a significant increase in the travel times between that project and the City's downtown retail core and Highway 121 (Silverado Trail); such projects, again, will most certainly significantly contribute to increased greenhouse gas emissions and will be a major factor in its increased cumulative impact under CEQA.

I believe that any CEQA categorical exemption that may apply to any KOS project will most likely be challenged if the above is not studied and made part of the PEIR, including the adoption of the mentioned guidelines and greenhouse gas reduction plans that specifically address transportation impacts caused by high impact projects affecting key

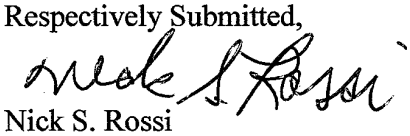
traffic corridors (e.g., Pope Street/Starr Avenue/Pope Street Bridge). [See *Center for Biological Diversity v. Nat. Highway Traffic Safety Admin.* (9th Cir. 2008) 538 f3d 1172].

10. Under the Land Use study topic (without being all inclusive), it is apparent that the City's identification of its KOS's needs to be further studied as to its inexplicable clustering effect that seems to focus affordable housing mostly in the City's east side (i.e., east of Main Street). There seems to be little or no analysis in the City's Housing Element for the reasoning for KOS designations other than the size of the parcels. Although the Housing Element has been approved by the State, such approval does not preclude the need for the PEIR to further study the appropriateness of KOS locations, including without limitation the social-demographic impact on the entire City community (including the lack of work force housing policies and designations therein) and not just selected portions of the City. Diversity is and must be part of the Land Use study topic; in particular, the cumulative effect of KOS locations should be reviewed to determine whether or not such amounts to exclusionary zoning for the dubious benefit of more affluent and secularized City neighborhoods.

A zoning scheme that potentially excludes a particular group for the benefit of another group may violate the California Supreme Court standard that designates poverty as a suspect class under the equal protection principles of the California Constitution. [See *Serrano v. Priest* (1976) 18 Cal.3d 728]. In essence, the City's Housing Element and existing General Plan zones certain lands for commercial development, agricultural preservation or low density estate parcels when, in fact, because of their close proximity to the City's downtown core (or otherwise other unique socio-economic dispersing effect on more wealthier neighborhoods) they should have been considered for medium density/high density/mixed-use KOS projects. I urge the City to reexamine these factors under not only its Land Use study topic but under all study topics affected thereby.

Although the above ten Items (including sub-points) may seem voluminous and overly legalistic in their expression, the main point of all of those concerns is that the City should be as expansive as possible in the undertaking of the PEIR. As noted earlier, it will result in the guiding land use document that serves as the City's blueprint and growth constitution, and has the power to enrich and meld together the City's various constituents. However, if done in a shortsighted or less-expansive, politically-motivated manner, it will surely further cement any existing community divisions and fail to establish a future that is beneficial to the entire community. The City will end up being bound by this document through the year 2030, a period of close to 20 years, which period will forever affect today's and tomorrow's generations.

Respectively Submitted,



Nick S. Rossi

APPENDIX C

Listing of Cultural Resources

TABLE C-1
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
--	P-28-000009	Archaeological Site	Prehistoric	--	midden site with human burial
--	P-28-000151	Archaeological Site	Prehistoric	2S2	lithic scatter
--	P-28-000301	Archaeological Site	Prehistoric	--	lithic scatter, midden
--	P-28-000313	Archaeological Site	Prehistoric	--	lithic scatter
--	P-28-000951	Archaeological Site	Prehistoric	--	lithic scatter
--	P-28-001267	Archaeological Site	Prehistoric	--	lithic scatter
--	P-28-001349	Archaeological Site	Historic	--	stone foundation, possible building pad, and structural debris
--	P-28-001402	Archaeological Site	Prehistoric	--	lithic scatter
--	CA-NAP-129	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-133	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-134	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-158	Archaeological Site	Prehistoric	--	lithic scatter
--	CA-NAP-352	Archaeological Site	Prehistoric	--	lithic scatter
--	CA-NAP-356	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-376	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-403	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-404	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-406	Archaeological Site	Prehistoric	--	lithic scatter
--	CA-NAP-408	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-507	Archaeological Site	Prehistoric	--	midden site
--	CA-NAP-578	Archaeological Site	Prehistoric	--	lithic scatter
--	CA-NAP-684H	Archaeological Site	Historic	--	concrete and brick structure; possible remnants of water wheel
--	CA-NAP-843	Archaeological Site	Prehistoric	--	lithic scatter
--	C-1300	Archaeological Site	Prehistoric	--	reported to NWIC by resident; bifaces and a grinding stone observed
1104 Adams Street	--	Commercial Building	1906	1D	native fieldstone commercial building

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
1225 Adams Street	--	Commercial Building	1920	1D	utilitarian commercial building
1310 Adams Street	4574-0074-0000	Church	1867	3S	United Methodist Church
1325 Adams Street	4574-0075-0000	School	1932	3S	Spanish Colonial Revival elementary school
1611 Adams Street	4574-0076-0000	Residence	1907	3S	Craftsman bungalow
Alexander Court	4574-0046-0000	Neighborhood	1907	3S	Residential street; Bungalow, Craftsman, and Colonial style houses
1207 Alexander Court	4574-0045-0000	Residence	1907	3S	Craftsmen bungalow
Allison Avenue	4574-0032-0000	Barn	1885	3S	former olive press-house
910 Allison Avenue	--	Residence	1902	--	rural vernacular residence
1269 Allyn Avenue	4574-0077-0000	Residence	1886	3S	Italianate style
1279 Allyn Avenue	4574-0078-0000	Residence	1890	3S	Stick style
1317 Allyn Avenue	4574-0079-0000	Residence	1883	3S	Italianate style
Charter Oak Avenue	4574-0040-0000	Winery	1881	3S	Sciaroni Winery stone sherry house
Charter Oak Avenue	4574-0041-0000	Winery	1881	3S	Sciaroni Winery fermenting building
957 Charter Oak Avenue	4574-0033-0000	Residence	1875	7N	Gothic Revival style
967 Charter Oak Avenue	4574-0034-0000	Residence	1880	3S	Italianate style
1043 Charter Oak Avenue	4574-0035-0000	Residence	1905	7N	Queen Anne, Colonial Revival residence; “Dr. Connor House”
1132 Church Street	--	Residence	1890	--	vernacular residence
1216 Church Street	4574-0047-0000	Warehouse	1878	1S	bonded brandy warehouse
2070 Dean York Lane	4574-0103-0000	Residence	1880	7N	frame-house cottage
415 Dowdell Lane	4574-0104-0000	Residence	1890	3S	Stick style
1133 Edwards Street	4574-0036-0000	Residence	1870	7N	Gothic Revival style
1217 Edwards Street	4574-0037-0000	Residence	1875	7N	Greek Revival style
825 Fulton Lane	--	Residence	1864	--	vernacular residence
Highway 29	P-28-001299	Bridge	1910	6Y	masonry arch bridge (#21-16) over Sulphur Creek
Highway 29	P-28-001316	Bridge	1902	6Y	masonry arch bridge (#21-17) over York Creek

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
Highway 29	P-28-001332	Culvert	1911	--	concrete culvert
Hudson Avenue	4574-0081-0000	Winery	1890	7N	Esmeralda Winery cellar building
1401 Hudson Avenue	4574-0080-0000	Residence	1883	3S	Colonial Revival style
921 Hunt Avenue	4574-0038-0000	Residence	1870	3S	Saltbox style cottage
940 Hunt Avenue	--	Residence	1936	--	Craftsman style
957 Hunt Avenue	4574-0039-0000	Residence	1890	3S	Second Empire style; “D.O. Hunt House”
1407 Kearney Street	4574-0082-0000	Residence	1906	3S	Craftsman style
1459 Kearney Street	4574-0083-0000	Residence	1899	3S	Queen Anne, Colonial Revival style
1489 Kearney Street	--	Residence	1900	--	vernacular residence
1451, 1451-1/2 Library Lane	--	Residence/Winery	1908, 1912	--	“Jackse Winery”’; vernacular winery and associated residence
1902 Madrona Avenue	4574-0105-0000	Residence/Winery	1885	6Y/2S2	Italianate residence (6Y); native stone wine cellar (2S2)
Main Street	4574-0048-0000	Lighting	1915	3S	Main Street Electrolaires
Main Street	4574-0049-0000	Park	1890	3S	Lyman Park; site of former meeting hall and public high school
Main Street	--	Commercial District	1870-1947	1S	St. Helena Historic Commercial District; 35 contributing buildings
195 Main Street	--	Motel	1940	--	Streamline Moderne style
397 Main Street	4574-0106-0000	Residence	1859	3S	Italianate style
437 Main Street	4574-0107-0000	School	1912	1S	Richardsonian Romanesque style high school
738 Main Street	4574-0042-0000	Residence	1875	3S	Gothic Revival style
933 Main Street	--	Commercial Building	1949	--	“Gott’s Roadside Tray”; Streamline Moderne/Googie building
1000 Main Street	--	Winery	1933	--	“Merryvale Winery”; concrete clad, utilitarian winery
1028 Main Street	--	Residence	1907	--	vernacular residence
1057 Main Street	4574-0050-0000	Commercial Building	1886	3S	Site of John C. Money’s St. Helena Planing Mill
1200 Main Street	4574-0051-0000	Commercial Building	1903	1D	“Dutch Colonial” style
1201 Main Street	4574-0052-0000	Commercial Building	1890	1D	Native stone; brick false-front
1205 Main Street	--	Commercial Building	1899	1D	Native stone; brick false-front
1210 Main Street	--	Commercial Building	1955	6X	cinder block building

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
1214 Main Street	--	Commercial Building	1875	6X	remodeled
1219 Main Street	--	Commercial Building	1875	1D	wood-frame, stone building
1222 Main Street	--	Commercial Building	1875	6X	remodeled
1223 Main Street	--	Commercial Building	1875	6X	remodeled
1225 Main Street	--	Commercial Building	1875	1D	brick false-front
1228 Main Street	--	Commercial Building	1875	6X	remodeled
1230 Main Street	--	Commercial Building	1875	6X	Remodeled
1231 Main Street	4574-0053-0000	Commercial Building	1875	1D	“Davis Building”
1234 Main Street	--	Commercial Building	1908	6X	Remodeled
1235 Main Street	--	Commercial Building	1880	1D/2S2	Italianate style
1269 Main Street	--	Commercial Building	1911	1D/2S2	concrete-block; native stone
1302 Main Street	4574-0054-0000	Commercial Building	1891	1D	“Hunt Building”; native stone
1305 Main Street	4574-0055-0000	Commercial Building	1881	1D	Wood building; former “Windsor Hotel”
1310 Main Street	--	Commercial Building	1875	1D	remodeled
1312 Main Street	--	Commercial Building	1920	1D	remodeled
1313 Main Street	--	Commercial Building	1875	1D	remodeled
1316 Main Street	--	Commercial Building	1920	1D	vertical-board sided building
1320 Main Street	--	Commercial Building	1915	1D	stucco-finished
1321 Main Street	--	Commercial Building	1920	6X	remodeled
1325 Main Street	--	Commercial Building	1925	6X	remodeled
1327 Main Street	4574-0056-0000	Commercial Building	1892	1D	“Richie Block”; Queen Anne style
1328 Main Street	4574-0057-0000	Commercial Building	1900	1D	“St. Helena Star Building”; Romanesque Revival style
1332 Main Street	--	Commercial Building	1925	1D	remodeled
1339 Main Street	--	Commercial Building	1875	1D	remodeled
1343 Main Street	--	Commercial Building	1875	6X	remodeled
1346 Main Street	--	Commercial Building	1875	1D	single-story

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
1347 Main Street	4574-0058-0000	Commercial Building	1890	1D	"Owen Wade Building"'; brick façade
1350 Main Street	--	Commercial Building	1885	1D	Italianate style
1351 Main Street	4574-0059-0000	Commercial Building	1890	1D	"Bank of St. Helena Building"; native fieldstone
1352 Main Street	4574-0060-0000	Commercial/Meeting Hall	1885	3S	I.O.O.F building; brick façade
1355 Main Street	--	Commercial Building	1940	1D	remodeled
1367 Main Street	--	Commercial Building	1888	1D	brick façade
1370 Main Street	--	Commercial Building	1925	6X	remodeled
1371 Main Street	--	Commercial Building	1884	1D	native stone
1379 Main Street	--	Commercial Building	1885	1D	Italianate style
1380 Main Street	--	Commercial Building	1937	1D	Streamline Moderne style, prefabricated gas station
1381 Main Street	4574-0061-0000	Commercial Building	1889	3S	"Kettlewell Building"; brick façade
1414 Main Street	4574-0063-0000	Residence	1870	7N	Victorian Gothic cottage
1461 Main Street	P-28-000790	Government Building	1941	--	United States Post Office
1508 Main Street	4574-0062-0000	Residence	1915	3S	Craftsman style
1817 Main Street	4574-0064-0000	Residence	1890	3S	vernacular residence
1817 Main Street	4574-0065-0000	Tankhouse	1890	3S	vernacular
1855 Main Street	--	Residence	1910	--	Georgian Revival style
1915 Main Street	4574-0066-0000	Residence	1907	3S	Colonial Revival style
2000 Main Street	P-28-001440	Winery	1878-1935	1S/1CL	Beringer Winery Historic District
2000 Main Street	P-28-000954	Stone Fence	1876	3D	Beringer Brothers winery Stone fence/retaining wall
2000 Main Street	P-28-000959	Trees	1885	1D	Beringer Brothers winery elm tree canopy
2000 Main Street	--	Road	--	3D	Beringer Winery circulation routes
2000 Main Street	P-28-001441	Residence	1883	1D/1S	Frederick Beringer mansion
2000 Main Street	P-28-001442	Residence	1860s	1D	"Sisters' House" Beringer Winery residence
2000 Main Street	P-28-001443	Commercial Building	1935	1D	"Export Building"; Beringer Winery office

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
2000 Main Street	P-28-001444	Winery and Cellar	1877	1D	Beringer Winery and wine cellar
2000 Main Street	P-28-001445	Commercial Building	1935	1D	Beringer Winery distillery
2000 Main Street	P-28-001446	Residence	ca. 1912	1D	Jacob Beringer, Jr. Craftsman bungalow
2555 Main Street	P-28-000953	Winery	1889	1S/1CL	“Greystone Cellars”; Richardsonian Romanesque style winery building
2555 Main Street	4574-0113-0000	Stone Arch	1889	1S	Native fieldstone archway for Greystone Cellars
2800 Main Street	4574-0115-0000	Winery	1874	1S/7L	Charles Krug Winery
2800 Main Street	--	Outbuilding	1881	2S3	Charles Krug Winery Carriage House
681 McCorkle Avenue	--	Residence	1907	--	vernacular residence
835 McCorkle Avenue	4574-0043-0000	Residence	1885	3S	Queen Anne style
458 Mills Lane	--	Residence	1900	--	vernacular residence
1255 Oak Avenue	4574-0084-0000	Church	1889	1S	Church of St. Helena
1310 Oak Avenue	--	Commercial Building	1905	1D	native stone façade
1313 Oak Avenue	4574-0089-0000	Meeting Hall	1900	3S	“Native Sons Hall”; Italian Villa style
1326 Oak Avenue	--	Residence	1899	--	vernacular residence
1360 Oak Avenue	4574-0085-0000	Library	1907	1S	Carnegie Library
1445 Oak Avenue	4574-0086-0000	Residence	1895	3S	Stick style
1454-1466 Oak Avenue	--	Residence	c. 1930	--	Tudor Revival style residences
1467 Oak Avenue	4574-0087-0000	Residence	1882	3S	Stick style; M.F.K Fisher residence
1551 Oak Avenue	4574-0088-0000	Residence	1907	7N	Queen Anne, Bungalow style
Pope Street	P-28-001300	Bridge	1894	2S2/7L	masonry arch bridge (#21C-109) over Napa River
Pope Street	P-28-001302	Bridge	1908	6Y	masonry arch bridge (#21C-110) over Sulphur Creek
924 Pope Street	4574-0044-0000	Winery	1885	3S	Jacob Meily Winery fermenting building
330 Pratt Avenue	--	Barn	1882	--	vernacular barn
376 Pratt Avenue	--	Residence	1882	--	vernacular residence
514 Pratt Avenue	--	Residence/Winery	1885, 1930	--	stone and wood-frame winery building; vernacular residence

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
855 Pratt Avenue	--	Residence	1890	--	vernacular farmhouse
Railroad Avenue	4574-0071-0000	Warehouse	1895	7N	“Boy Scout Hall”; wood, false-front warehouse
Railroad Avenue	4574-0072-0000	Railroad Depot	1895	1S	Southern Pacific Railroad Depot
1321 Railroad Avenue	--	Commercial Building	1875	1D	stucco-finished, L-shaped commercial building
1345 Railroad Avenue	4574-0067-0000	Commercial Building	1884	1D/1S	“Taylor, Duckworth & Co. Foundry”; Commercial warehouse district
1417 Railroad Avenue	4574-0068-0000	Commercial Building	1906	7N	warehouse
1468 Railroad Avenue	4574-0069-0000	Commercial Building	1877	1S	Victorian, Italianate style sherry house and saloon
1478 Railroad Avenue	4574-0070-0000	Commercial Building	1880	7N	vernacular saloon
1550 Railroad Avenue	--	Residence	1910, 1939	--	vernacular and Mission Revival style
1572 Railroad Avenue	P-28-000770	Government Buildings	1939	2S2/4CM / 6Y	CDF Ranger Unit Headquarters with Craftsmen bungalow ranger residence (2S2) and ranger unit headquarters (6Y)
Silverado Trail	4574-0014-0000	Cellar	1894	7N	“Stone Bridge Saloon” site
1605 Spring Mountain Road	4574-0099-0000	Residence	1900	3S	Queen Anne style
1637 Spring Mountain Road	4574-0100-0000	Residence	1907	3S	Craftsman style
1651 Spring Mountain Road	4574-0101-0000	Residence	1905	3S	Shingle, Queen Anne, Colonial Revival styles
1709 Spring Mountain Road	4574-0102-0000	Residence	1920	7N	Bungalow cottage
Spring Street	4574-0116-0000	Cemetery	1856	7N	St. Helena Public Cemetery
1228 Spring Street	4574-0073-0000	Commercial Building	1875	1D/1S	“William Tell Hotel”; false-front
1245 Spring Street	4574-0117-0000	Residence	1927	7N	Bungalow cottage
1313 Spring Street	4574-0089-0000	Meeting Hall	1900	3S	Italian Villa style
1314 Spring Street	4574-0090-0000	Church	1883	7N	Grace Episcopal Church
1343 Spring Street	4574-0091-0000	Church/Residence	1875	7N	Italianate style First Baptist Church; former Joseph Chiles house
1420 Spring Street	4574-0092-0000	Church	1875	3S	First Presbyterian Church
1526 Spring Street	4574-0093-0000	Residence	1875	7N	frame-house cottage
1531 Spring Street	4574-0094-0000	Residence	1885	7N	frame-house cottage
1542 Spring Street	4574-0095-0000	Residence	1875	3S	Greek Revival style

TABLE C-1 (Continued)
RECORDED CULTURAL RESOURCES WITHIN CITY LIMITS

Address	Resource Identification Number[a]	Resource Type	Age	OHP NRS Code[b]	Comments
1551 Spring Street	P-28-001516	Residence	ca. 1880	--	Italianate style house and two barns
1635 Spring Street	--	Winery	1876	--	“Lewelling Winery”; vernacular winery building
1735 Spring Street	4574-0096-0000	Residence	1885	7N	wood-frame farmhouse
1817 Spring Street	4574-0097-0000	Residence/Winery	1890	7N	Schweinitzer House & Winery; frame-house and winery building
1933 Spring Street	--	Residence	1910	--	Bungalow residence
1944 Spring Street	4574-0098-0000	Residence	1867	7N	Gothic Revival Methodist Church Parsonage
1331 Stockton Street	--	Residence	1912	--	Folk Victorian residence
2252 Sulphur Springs Avenue	--	Residence	1865	--	vernacular residence
2610 Sulphur Springs Avenue	--	Residence	1879	--	“Edgehill Vineyard Barracks”; vernacular style

a As assigned by the California Office of Historic Preservation.
b California Office of Historic Preservation (OHP) National Register Status (NRS) Code: **1D** Contributor to a district or multiple resource property listed in National Register by the Keeper of the National Register. Listed in the California Register; **1S** Individual property listed in National Register by the Keeper. Listed in the California Register; **2S** Individual property determined eligible for National Register by the Keeper. Listed in the California Register; **2S2** Individual property determined eligible for National Register by a consensus through Section 106 process. Listed in the California Register; **2S3** Individual property determined eligible for National Register by Part I Tax Certification. Listed in the California Register; **3S** Appears eligible for National Register as an individual property through survey evaluation; **4CM** Master List – State Owned Properties – PRC §5024; **6X** Determined ineligible for the National Register by SHRC or Keeper; **6Y** Determined ineligible for National Register by consensus through Section 106 process – Not evaluated for California Register or local listing; **7J** Received by OHP for evaluation or action but not yet evaluated; **7L** State Historical Landmarks 1-769 and Point of Historical Interest designated prior to January 1998 – Needs to be reevaluated using current standards; **7N** Needs to be reevaluated (formerly National Register Status Code 4); **7W** Submitted to OHP for action – withdrawn.

APPENDIX D

1993 General Plan Noise Tables

TABLE D-1
NOISE/LAND USE COMPATIBILITY GUIDELINES [A]

Land Use Category	Completely Compatible	Tentatively Compatible	Normally Incompatible	Completely Incompatible
Residential	< 55 dBA	55-60 dBA	60-75 dBA	> 75 dBA
Commercial/Office	< 65 dBA	65-75 dBA	75-80 dBA	> 80 dBA
Industrial/Agricultural	< 70 dBA	70-80 dBA	80-85 dBA	> 85 dBA
School, libraries, churches, hospitals	< 65 dBA	65-70 dBA	70-80 dBA	> 80 dBA
Playground, neighborhood park	< 67 dBA	67-70 dBA	70-75 dBA	> 75 dBA

[a] Expressed as Ldn or CNEL.

TABLE D-2
RECOMMENDED MAXIMUM INTERIOR NOISE LEVEL CRITERIA FOR INTERMITTENT NOISE FOR NON-RESIDENTIAL RECEPTORS

Land Use	Maximum Intermittent Noise Level (dBA)	Basis for Criteria
Public Use/Educational Facilities:		
Concert Halls	25	Intrusion of noise may spoil artistic effect
Theater	30	Intrusion of noise may spoil artistic effect
School Auditorium	35	Minimize intrusion into artistic performance
School Classroom	55	Speech communication-20 ft.-raised voice
School Laboratory	60	Speech communication-6 ft.-normal voice
Church Sanctuaries	45	Speech communication-50 ft.-raised voice
Library	55	Speech communication-3 ft.-normal voice

SOURCE: Adapted from Table 2 in “Night Insulation Problems in Buildings”, Paul S. Veneklasen & Associates, 1973; Napa County, 1982, Noise Element of the Napa County General Plan.

TABLE D-3
STANDARD AND ADJUSTMENTS FOR DETERMINING IMPACTS OF INTRUSIVE NOISE FOR RESIDENTIAL RECEPTORS

Standard

The L_{eq} over a 10-minute period of time at the relevant time of day (or night) of maximum potential impacts shall be the noise level descriptor used to determine the impacts of intrusive, continuous or intermittent noise. The L_{eq} of the noise source of concern shall be compared with a similar L_{eq} of the ambient noise alone at the same time. Measurements are to be taken at the nearest receiver property line or at the nearest affected exterior location where noises which occur normally at the given location.

Once the L_{eq} of the potentially intrusive source is determined, it shall be corrected as indicated below.

If, after the corrections are made, the potentially intrusive noise source would cause the exterior noise levels a the receiver position to exceed the measured ambient noise levels by more than 5 dBA, mitigation measures shall be developed to reduce the projected noise increase to be less than 5 dBA above ambient levels.

In addition to the above, the maximum noise level (L_{max}) of any impulsive noise shall not exceed the ambient by more than 10 dBA.

Corrections for Intrusive or Intermittent Noise

Type of Correction	Circumstances of Correction	Correction[1]
Seasonal	Summer or year round operation Winter only (or windows always closed)	0 dBA -5 dBA
Tone or Impulse Characteristics	No pure tone or impulsive character Pure tones[2] present Impulsive tones[3]	0 dBA + 5 dBA + 5 dBA

1 Correction to be added to the measured or predicted 10-minute Leq of the potentially intrusive noise source.
2 Tonal element exists when the 1/3 octave noise level of the tone is 5 DB greater than the average level of the two adjacent 1/3 octave noise bands.
3 Repetitions of noise with a period of less than 2 seconds or for a series of events with a duration less than 2 seconds.

APPENDIX E

Transportation Level of Service Definitions and Thresholds and LOS Calculations

Transportation engineers and planners commonly use a rating system called level of service (LOS) to measure and describe the operational status of intersections on a local roadway network. LOS is a semi-quantitative description of an intersection's operation, ranging from LOS A (indicating free flow traffic conditions with little or no delay) to LOS F (representing oversaturated conditions with traffic flows exceeding design capacity, resulting in long queues and delays).

Roadway Analysis Method

Level-of-Service at roadway segments can be qualified using several methodologies. A daily LOS is a generalized approach, where the volume-to-capacity ratio is calculated from a theoretical daily roadway capacity based on the number of lanes and "capacity class" (e.g. highway, arterial, and collector). This approach is used where the road features are generally uniform over an extended distance (e.g. standard roadway curvature and grade, lane widths and intersection spacing). The daily LOS may not account for peak hour delays that occur resulting from extended queuing at closely spaced intersections or at high-demand turn movements.

Table E-1 describes LOS criteria for roadway segments.

Table E-2 displays the definitions of the LOS thresholds based on the *Highway Capacity Manual* (TRB, 2000) and research conducted by Fehr & Peers.

The California Department of Transportation (Caltrans) is responsible for the maintenance and operation of state routes and highways including SR 29. Caltrans usually strives to maintain service levels on State facilities at the transition between LOS C and LOS D. Anything below LOS D can be considered unacceptable conditions. Other evaluation measures such as safety, vehicle-miles-traveled, and accessibility can be considered as well, particularly in downtown environments.

Table E-3 displays the definitions of the LOS thresholds based average travel speed on arterials according to the *Highway Capacity Manual.*

TABLE E-1
QUALITATIVE DESCRIPTION OF LEVEL OF SERVICE FOR ROADWAY SEGMENTS

Level of Service	Driver's Perception
A / B	LOS A / B are characterized by light congestion. Motorists are generally able to maintain desired speeds on two and four lane roads and make lane changes on four lane roads. Motorists are still able to pass through traffic-controlled intersections in one green phase. Stop-controlled approach motorists begin to notice absence of available gaps.
C	LOS C represents moderate traffic congestion. Average vehicle speeds continue to be near the motorist's desired speed for two and four lane roads. Lane change maneuvers on four lane roads increase to maintain desired speed. Turning traffic and slow vehicles begin to have an adverse impact on traffic flows. Occasionally, motorists do not clear the intersection on the first green phase.
D	LOS D is characterized by congestion with average vehicle speeds decreasing below the motorist's desired level for two and four lane roads. Lane change maneuvers on four lane roads are difficult to make and adversely affect traffic flow like turning traffic and slow vehicles. Multiple cars must wait through more than one green phase at a traffic signal. Stop-controlled approach motorists experience queuing due to a reduction in available gaps.
E	LOS E is the lowest grade possible without stop-and-go operations. Driving speeds are substantially reduced and brief periods of stop-and-go conditions can occur on two and four lane roads and lane changes are minimal. At signalized intersections, long vehicle queues can form waiting to be served by the signal's green phase. Insufficient gaps on the major streets cause extensive queuing on the stop-controlled approaches.
F	LOS F represents stop-and-go conditions for two and four lane roads. Traffic flow is constrained and lane changes minimal. Drivers at signalized intersections may wait several green phases prior to being served. Motorists on stop-controlled approaches experience insufficient gaps of suitable size to cross safely through a major traffic stream.

SOURCE: Fehr & Peers and Highway Capacity Manual, Transportation Research Board (2000).

TABLE E-2
LOS DEFINITIONS FOR ROADWAY SEGMENTS

Roadway Classification	Number of Lanes	ADT Level-of-Service Capacity Threshold				
		A	B	C	D	E
Minor Arterial	2	9,000	10,700	12,000	13,500	15,000
Collector Street	2	5,250	6,125	7,000	7,875	8,750
Local Street	2	-	-	3,000	4,000	5,000

SOURCE: Fehr & Peers 2009, based on the *Highway Capacity Manual*, Transportation Research Board, 2000 and internal Fehr & Peers research.

TABLE E-3
ROADWAY SEGMENTS LOS CRITERIA,
HCM ARTERIAL OPERATIONS THRESHOLD

Urban Street Class	I High-Speed Principal Arterial	II Suburban Principal Arterial	III Intermediate Minor Arterial	IV Urban Minor Arterial
Range of Free Flow Speed (FFS)	45-55 mph	35-45 mph	30-35 mph	25-35 mph
Typical FFS	50 mph	40 mph	35 mph	30 mph
LOS	**Average Travel Speed (mph)**			
A	>42 mph	>35 mph	>30 mph	>25 mph
B	35 – 42 mph	29 – 35 mph	25 – 30 mph	21 – 25 mph
C	28 – 34 mph	23 – 28 mph	19 – 24 mph	15 – 20 mph
D	22 – 27 mph	18 – 22 mph	15 – 18 mph	12 – 14 mph
E	16 – 21 mph	13 – 17 mph	11 – 14 mph	9 – 11 mph
F	< 16 mph	< 13 mph	< 11 mph	< 9 mph

SOURCE: *Highway Capacity Manual* (TRB, 2000), Exhibit 15-2. Urban Street LOS by Class

The Main Street corridor reflects Urban Street Class IV because it has a high-density of driveways, significant amounts of on-street parking and roadside development, and significant pedestrian traffic (HCM-2000, Exhibit 10-4).

Intersection Analysis Method

Signalized Intersections

Signalized intersection traffic conditions and resulting LOS derive from the *Highway Capacity Manual* (HCM) – Special Report 209 (Chapter 16) method. This operations analysis uses various intersection characteristics (such as traffic volumes, lane geometry, and signal phasing) to estimate the average control delay per vehicle. Control delay is the portion of the total delay attributed to signal operations and includes initial deceleration, queue move up time, stopped delay, and acceleration delay. Using this method, transportation engineers and planners base the LOS for a signalized intersection on the control delay per vehicle measured in seconds. Table E-4 shows the relationship between delay and LOS for signalized intersections.

Unsignalized Intersections

Unsignalized Intersection (all-way stop-controlled and side-street stop-controlled) evaluations employ the HCM – Special Report 209 (Chapter 17) method. The average control delay per vehicle (measured in seconds) for

TABLE E-4
INTERSECTION LEVEL OF SERVICE CRITERIA

Level of Service	Signalized Intersection Control Delay per Vehicle (Seconds)	Unsignalized Intersection Control Delay per Vehicle (Seconds)
A	≤ 10.0	≤ 10.0
B	>10.0 and ≤ 20.0	>10.0 and ≤ 15.0
C	>20.0 and ≤ 35.0	>15.0 and ≤ 25.0
D	>35.0 and ≤ 55.0	>25.0 and ≤ 35.0
E	>55.0 and ≤ 80.0	>35.0 and ≤ 50.0
F	>80.0	>50.0

SOURCE: *Highway Capacity Manual – Special Report 209* (Transportation Research Board, 2000)

each stop-controlled movement defines the operations for these intersections. Control delay incorporates delay associated with deceleration, acceleration, stopping, and moving up in the queue. For side-street stop-controlled intersections, the delay reported in this study represents the worst-case minor approach. For all-way stop-controlled intersections, the average control delay represents the whole intersection. Table E-3 summarizes the relationship between delay and LOS for unsignalized intersections.

LOS intersection standards were established under the City of St. Helena's General Plan of 1993 as follows:

- All signalized intersections in St. Helena should maintain LOS C except along Main Street, where LOS D is permitted. Exceptions to this policy are that lower service levels shall be permitted at any location where the existing LOS does not meet this standard and in which case the LOS cannot be worsened any further.

- All unsignalized intersections must maintain LOS C. If the LOS degrades below LOS C, an evaluation of the need for traffic signalization shall be undertaken according to standard Caltrans signal warrants as described below. If signals are not initially warranted, the location shall continue to be monitored for signal warrants on a regular basis.

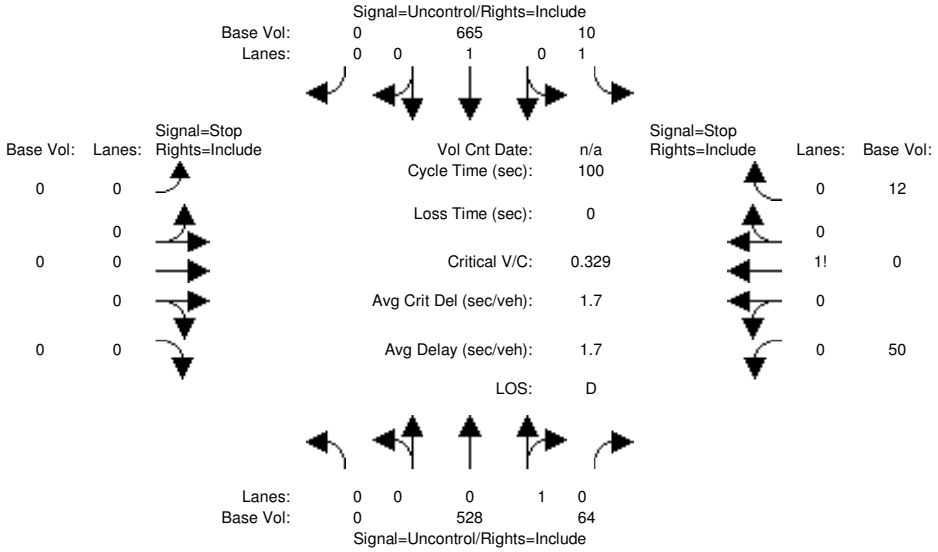
Signal warrants consists of reviewing traffic levels, proximity of the intersection to other signals and to schools, accident frequency, and other factors against a set of warrants identified in the Traffic Manual (Caltrans 1995) and the Manual on Uniform Traffic Control Devices (FHWA 2003) to identify whether installing a traffic signal would be appropriate. The California MUTCD indicates that the installation of a traffic signal should be considered if one or more of the signal warrants are met. This study will utilize the peak hour volume- based Warrant 3 as one representative type of traffic signal warrant analysis.

INTERSECTION LOS CALCULATIONS

St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #1: Main Street / Pratt Avenue

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Street Name:           Main Street                        Pratt Avenue
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  528    64    10  665     0     0    0     0    50    0    12
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  528    64    10  665     0     0    0     0    50    0    12
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  574    70    11  723     0     0    0     0    54    0    13
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  574    70    11  723     0     0    0     0    54    0    13
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.2 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.3 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   643 xxxx xxxxx  xxxx xxxx xxxxx  1353 1353   609
Potent Cap.: xxxx xxxx xxxxx   918 xxxx xxxxx  xxxx xxxx xxxxx   167  151   499
Move Cap.:   xxxx xxxx xxxxx   918 xxxx xxxxx  xxxx xxxx xxxxx   165  149   499
Volume/Cap:  xxxx xxxx  xxxx  0.01 xxxx  xxxx  xxxx xxxx  xxxx  0.33 0.00  0.03
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  190 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  1.5 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 34.0 xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    D     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             34.0
ApproachLOS:         *                *                *                D
Note: Queue reported is the number of cars per lane.
```


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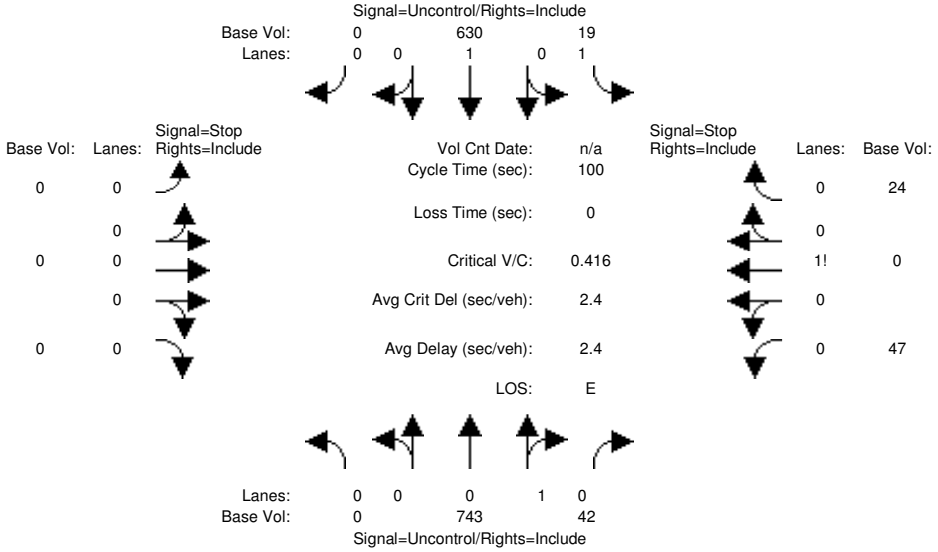
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #1: Main Street / Pratt Avenue




```
Street Name:            Main Street                         Pratt Avenue
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  743    42    19  630     0     0    0     0    47    0    24
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  743    42    19  630     0     0    0     0    47    0    24
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  808    46    21  685     0     0    0     0    51    0    26
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  808    46    21  685     0     0    0     0    51    0    26
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.2 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.3 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   853 xxxx xxxxx  xxxx xxxx xxxxx  1557 1557   830
Potent Cap.: xxxx xxxx xxxxx   765 xxxx xxxxx  xxxx xxxx xxxxx   125  114   373
Move Cap.:   xxxx xxxx xxxxx   765 xxxx xxxxx  xxxx xxxx xxxxx   123  111   373
Volume/Cap:  xxxx xxxx  xxxx  0.03 xxxx  xxxx  xxxx xxxx  xxxx  0.42 0.00  0.07
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx   9.8 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  159 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  2.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 47.4 xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    E     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx             47.4
ApproachLOS:         *                *                *                E
Note: Queue reported is the number of cars per lane.
```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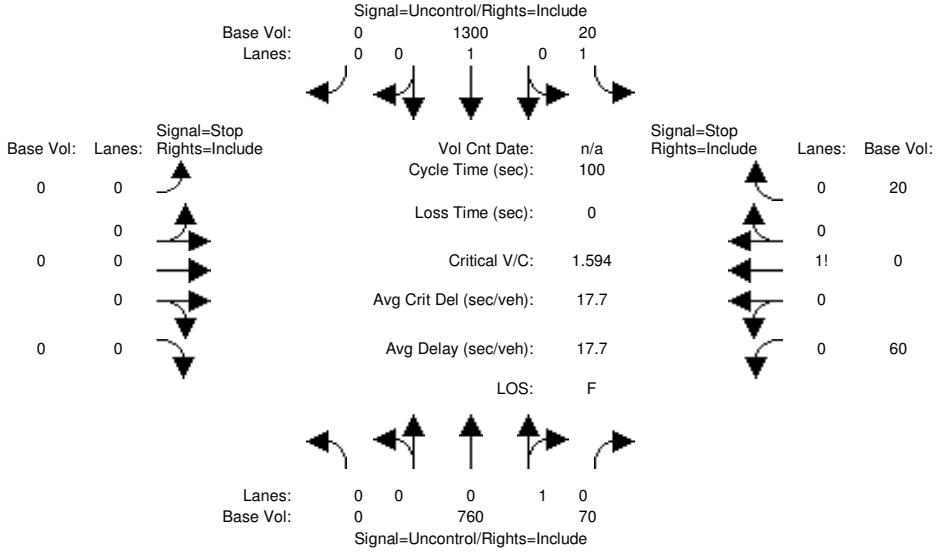
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
General Plan AM

Intersection #1: Main Street / Pratt Avenue




```
Street Name:            Main Street                         Pratt Avenue
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0  760    70    20 1300     0     0    0     0    60    0    20
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0  760    70    20 1300     0     0    0     0    60    0    20
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0  826    76    22 1413     0     0    0     0    65    0    22
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0  826    76    22 1413     0     0    0     0    65    0    22
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.2 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.3 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx   902 xxxx xxxxx  xxxx xxxx xxxxx  2321 2321   864
Potent Cap.: xxxx xxxx xxxxx   733 xxxx xxxxx  xxxx xxxx xxxxx    42   38   357
Move Cap.:   xxxx xxxx xxxxx   733 xxxx xxxxx  xxxx xxxx xxxxx    41   37   357
Volume/Cap:  xxxx xxxx  xxxx  0.03 xxxx  xxxx  xxxx xxxx  xxxx  1.59 0.00  0.06
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx  10.1 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     B    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx   53 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  8.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  490 xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    F     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx            490.4
ApproachLOS:         *                *                *                F
Note: Queue reported is the number of cars per lane.
```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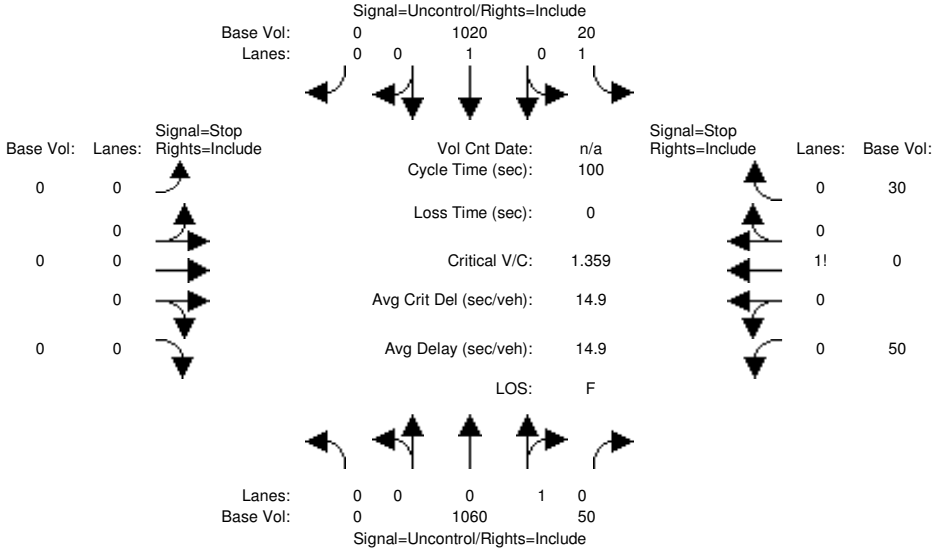
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
General Plan PM

Intersection #1: Main Street / Pratt Avenue




```
Street Name:            Main Street                         Pratt Avenue
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0 1060    50    20 1020     0     0    0     0    50    0    30
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0 1060    50    20 1020     0     0    0     0    50    0    30
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:     0 1152    54    22 1109     0     0    0     0    54    0    33
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:    0 1152    54    22 1109     0     0    0     0    54    0    33
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:xxxxx xxxx xxxxx   4.2 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2
FollowUpTim:xxxxx xxxx xxxxx   2.3 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: xxxx xxxx xxxxx  1207 xxxx xxxxx  xxxx xxxx xxxxx  2332 2332  1179
Potent Cap.: xxxx xxxx xxxxx   561 xxxx xxxxx  xxxx xxxx xxxxx    41   37   234
Move Cap.:   xxxx xxxx xxxxx   561 xxxx xxxxx  xxxx xxxx xxxxx    40   36   234
Volume/Cap:  xxxx xxxx  xxxx  0.04 xxxx  xxxx  xxxx xxxx  xxxx  1.36 0.00  0.14
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:   xxxx xxxx xxxxx   0.1 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:xxxxx xxxx xxxxx  11.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    *    *     *     B    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx   58 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  7.8 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  412 xxxxx
Shared LOS:     *    *     *     *    *     *     *    *     *     *    F     *
ApproachDel:    xxxxxx           xxxxxx           xxxxxx            412.3
ApproachLOS:         *                *                *                F
Note: Queue reported is the number of cars per lane.
```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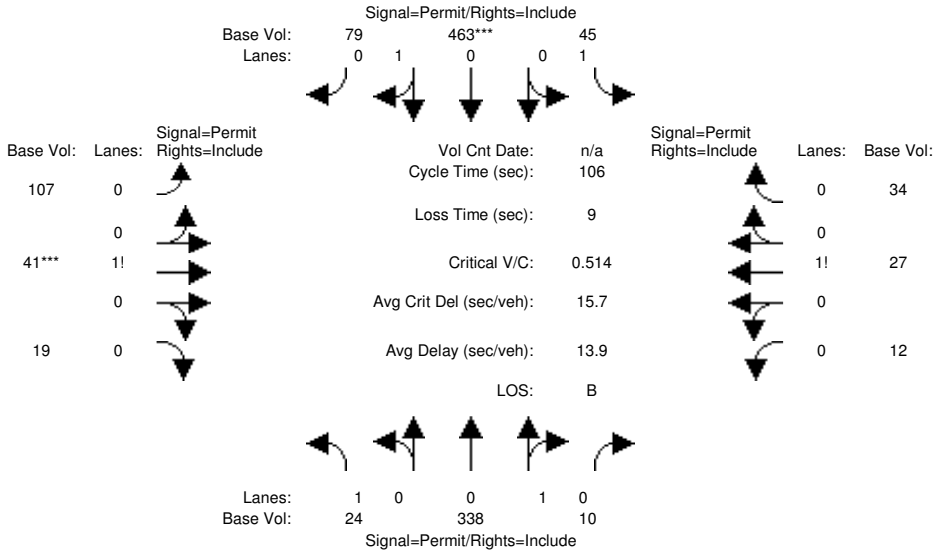
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #2: Main Street / Madrona Way / Fulton Lane




```
Street Name:            Main Street                 Madrona Way / Fulton Lane
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    17   17    17   17   17    17   20   20    20   20   20    20
Y+R:          4.5  4.5   4.5  4.5  4.5   4.5  4.5  4.5   4.5  4.5  4.5   4.5
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      24  338    10   45  463    79  107   41    19   12   27    34
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   24  338    10   45  463    79  107   41    19   12   27    34
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92 0.92 0.92  0.92
PHF Volume:    26  367    11   49  503    86  116   45    21   13   29    37
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   26  367    11   49  503    86  116   45    21   13   29    37
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   26  367    11   49  503    86  116   45    21   13   29    37
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900  1900 1900 1900  1900 1900 1900  1900
Adjustment:  0.33 0.93  0.93 0.46 0.91  0.91 0.72 0.74  0.73 0.87 0.87  0.85
Lanes:       1.00 0.97  0.03 1.00 0.85  0.15 0.65 0.24  0.11 0.16 0.37  0.47
Final Sat.:   630 1719    51  875 1484   253  885  339   157  269  605   762
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.21  0.21 0.06 0.34  0.34 0.13 0.13  0.13 0.05 0.05  0.05
Crit Moves:                      ****            ****
Green/Cycle: 0.66 0.66  0.66 0.66 0.66  0.66 0.26 0.26  0.26 0.26 0.26  0.26
Volume/Cap:  0.06 0.32  0.32 0.08 0.51  0.51 0.51 0.51  0.51 0.19 0.19  0.19
Delay/Veh:    6.5  8.0   8.0  6.6  9.7   9.7 35.1 35.1  35.1 31.1 31.1  31.1
User DelAdj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
AdjDel/Veh:   6.5  8.0   8.0  6.6  9.7   9.7 35.1 35.1  35.1 31.1 31.1  31.1
LOS by Move:    A    A     A    A    A     A    D    D     D    C    C     C
HCM2kAvgQ:      0    5     5    1   10    10    6    6     6    2    2     2
Note: Queue reported is the number of cars per lane.
```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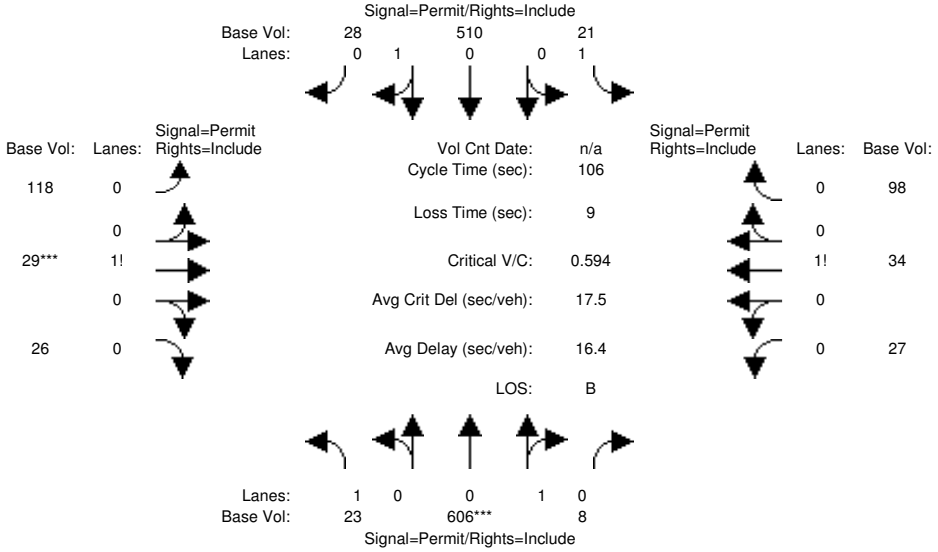
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #2: Main Street / Madrona Way / Fulton Lane



Street Name:	Main Street						Madrona Way / Fulton Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	23	606	8	21	510	28	118	29	26	27	34	98
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	606	8	21	510	28	118	29	26	27	34	98
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	25	659	9	23	554	30	128	32	28	29	37	107
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	25	659	9	23	554	30	128	32	28	29	37	107
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	25	659	9	23	554	30	128	32	28	29	37	107
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.32	0.93	0.93	0.27	0.93	0.93	0.59	0.60	0.60	0.83	0.83	0.82
Lanes:	1.00	0.99	0.01	1.00	0.95	0.05	0.68	0.17	0.15	0.17	0.21	0.62
Final Sat.:	613	1750	23	519	1670	92	767	189	169	265	334	963
Capacity Analysis Module:												
Vol/Sat:	0.04	0.38	0.38	0.04	0.33	0.33	0.17	0.17	0.17	0.11	0.11	0.11
Crit Moves:		****						****				
Green/Cycle:	0.63	0.63	0.63	0.63	0.63	0.63	0.28	0.28	0.28	0.28	0.28	0.28
Volume/Cap:	0.06	0.59	0.59	0.07	0.52	0.52	0.59	0.59	0.59	0.39	0.39	0.39
Delay/Veh:	7.5	12.3	12.3	7.5	11.1	11.1	35.9	35.9	35.9	31.4	31.4	31.4
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	7.5	12.3	12.3	7.5	11.1	11.1	35.9	35.9	35.9	31.4	31.4	31.4
LOS by Move:	A	B	B	A	B	B	D	D	D	C	C	C
HCM2kAvgQ:	0	12	12	0	11	11	6	6	6	5	5	5

Note: Queue reported is the number of cars per lane.

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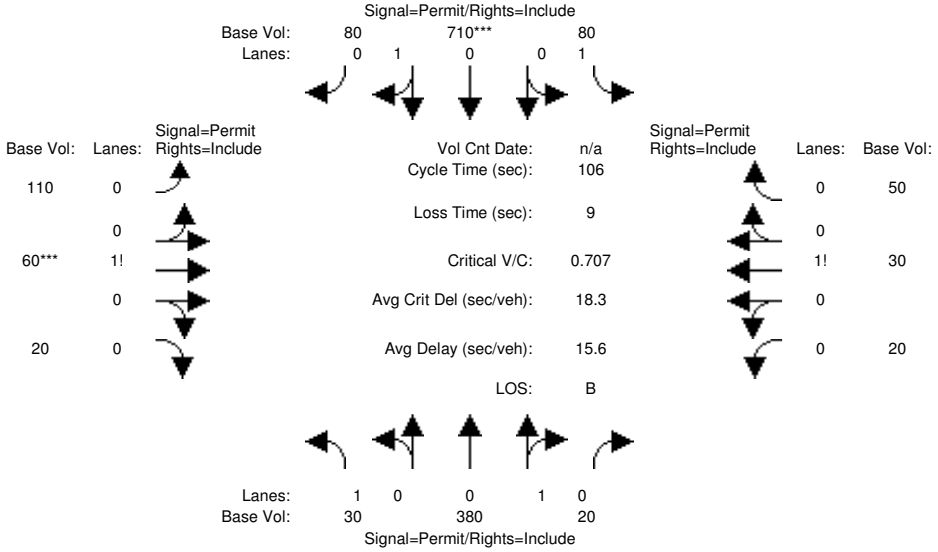
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan AM

Intersection #2: Main Street / Madrona Way / Fulton Lane



Street Name:	Main Street						Madrona Way / Fulton Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	30	380	20	80	710	80	110	60	20	20	30	50
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	380	20	80	710	80	110	60	20	20	30	50
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	33	413	22	87	772	87	120	65	22	22	33	54
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	413	22	87	772	87	120	65	22	22	33	54
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	413	22	87	772	87	120	65	22	22	33	54
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.21	0.93	0.93	0.43	0.92	0.92	0.69	0.70	0.70	0.84	0.85	0.83
Lanes:	1.00	0.95	0.05	1.00	0.90	0.10	0.59	0.31	0.10	0.20	0.30	0.50
Final Sat.:	395	1676	88	823	1572	177	764	417	139	318	477	794
Capacity Analysis Module:												
Vol/Sat:	0.08	0.25	0.25	0.11	0.49	0.49	0.16	0.16	0.16	0.07	0.07	0.07
Crit Moves:					****			****				
Green/Cycle:	0.69	0.69	0.69	0.69	0.69	0.69	0.22	0.22	0.22	0.22	0.22	0.22
Volume/Cap:	0.12	0.36	0.36	0.15	0.71	0.71	0.71	0.71	0.71	0.31	0.31	0.31
Delay/Veh:	5.6	6.8	6.8	5.7	11.7	11.7	45.9	45.9	45.9	35.0	35.0	35.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	5.6	6.8	6.8	5.7	11.7	11.7	45.9	45.9	45.9	35.0	35.0	35.0
LOS by Move:	A	A	A	A	B	B	D	D	D	D	D	D
HCM2kAvgQ:	0	6	6	1	17	17	8	8	8	3	3	3

Note: Queue reported is the number of cars per lane.

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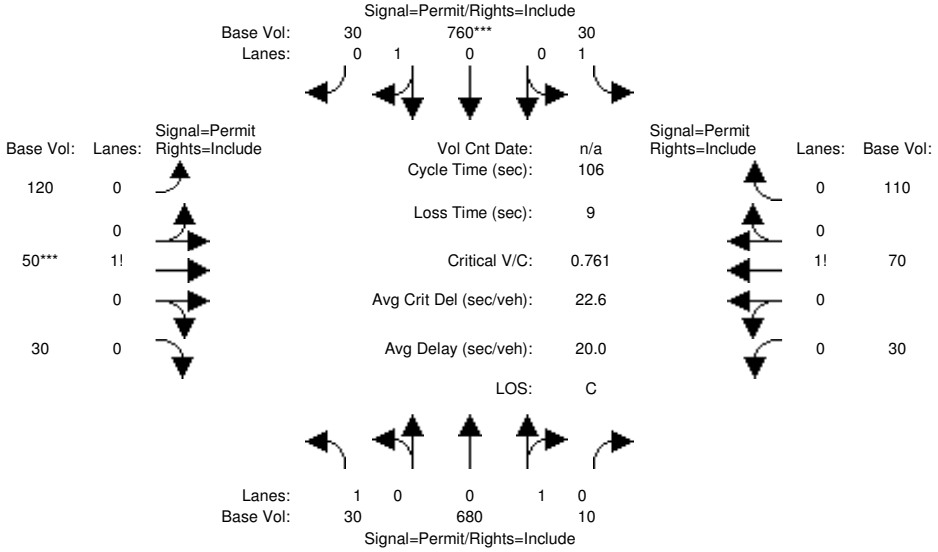
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan PM

Intersection #2: Main Street / Madrona Way / Fulton Lane



Street Name:	Main Street						Madrona Way / Fulton Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	20	20	20
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Volume Module:												
Base Vol:	30	680	10	30	760	30	120	50	30	30	70	110
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	30	680	10	30	760	30	120	50	30	30	70	110
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	33	739	11	33	826	33	130	54	33	33	76	120
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	33	739	11	33	826	33	130	54	33	33	76	120
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	33	739	11	33	826	33	130	54	33	33	76	120
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.17	0.93	0.93	0.23	0.93	0.93	0.54	0.55	0.55	0.85	0.85	0.84
Lanes:	1.00	0.99	0.01	1.00	0.96	0.04	0.60	0.25	0.15	0.14	0.33	0.53
Final Sat.:	331	1747	26	439	1699	67	622	259	155	229	535	840
Capacity Analysis Module:												
Vol/Sat:	0.10	0.42	0.42	0.07	0.49	0.49	0.21	0.21	0.21	0.14	0.14	0.14
Crit Moves:					****			****				
Green/Cycle:	0.64	0.64	0.64	0.64	0.64	0.64	0.28	0.28	0.28	0.28	0.28	0.28
Volume/Cap:	0.15	0.66	0.66	0.12	0.76	0.76	0.76	0.76	0.76	0.52	0.52	0.52
Delay/Veh:	8.0	13.4	13.4	7.6	16.5	16.5	46.5	46.5	46.5	33.5	33.5	33.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	8.0	13.4	13.4	7.6	16.5	16.5	46.5	46.5	46.5	33.5	33.5	33.5
LOS by Move:	A	B	B	A	B	B	D	D	D	C	C	C
HCM2kAvgQ:	0	15	15	1	21	21	8	8	8	7	7	7

Note: Queue reported is the number of cars per lane.

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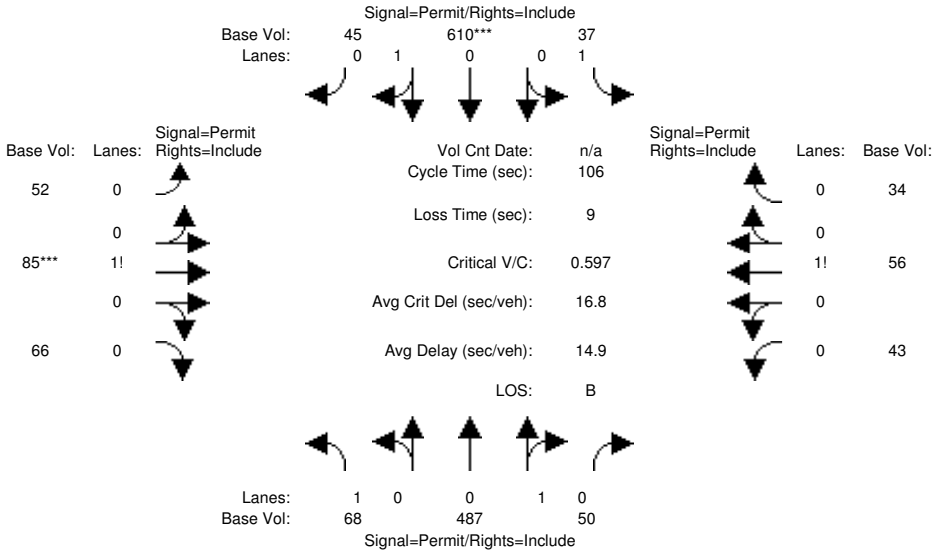
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #3: Main Street / Adams Street



Street Name:	Main Street						Adams Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	0	0	0
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	68	487	50	37	610	45	52	85	66	43	56	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	68	487	50	37	610	45	52	85	66	43	56	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	74	529	54	40	663	49	57	92	72	47	61	37
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	74	529	54	40	663	49	57	92	72	47	61	37
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	74	529	54	40	663	49	57	92	72	47	61	37
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.27	0.92	0.92	0.34	0.93	0.92	0.82	0.83	0.82	0.76	0.77	0.76
Lanes:	1.00	0.91	0.09	1.00	0.93	0.07	0.26	0.41	0.33	0.32	0.42	0.26
Final Sat.:	516	1588	163	650	1638	121	400	654	508	468	610	370
Capacity Analysis Module:												
Vol/Sat:	0.14	0.33	0.33	0.06	0.40	0.40	0.14	0.14	0.14	0.10	0.10	0.10
Crit Moves:					****			****				
Green/Cycle:	0.68	0.68	0.68	0.68	0.68	0.68	0.24	0.24	0.24	0.24	0.24	0.24
Volume/Cap:	0.21	0.49	0.49	0.09	0.60	0.60	0.60	0.60	0.60	0.42	0.42	0.42
Delay/Veh:	6.7	8.5	8.5	5.9	10.0	10.0	38.6	38.6	38.6	35.1	35.1	35.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	6.7	8.5	8.5	5.9	10.0	10.0	38.6	38.6	38.6	35.1	35.1	35.1
LOS by Move:	A	A	A	A	B	B	D	D	D	D	D	D
HCM2kAvgQ:	1	9	9	0	12	12	7	7	7	4	4	4

Note: Queue reported is the number of cars per lane.

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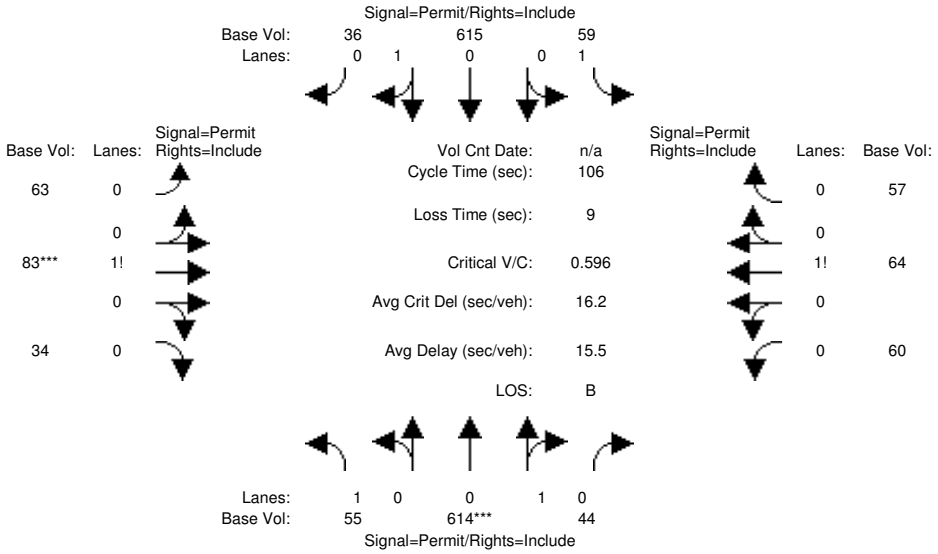
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing PM

Intersection #3: Main Street / Adams Street

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Street Name:            Main Street                         Adams Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Min. Green:    17   17    17   17   17   17   20   20   20    0    0    0
Y+R:          4.5  4.5   4.5  4.5  4.5  4.5  4.5  4.5  4.5  4.0  4.0  4.0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      55  614    44   59  615   36   63   83   34   60   64   57
Growth Adj:  1.00 1.00  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   55  614    44   59  615   36   63   83   34   60   64   57
User Adj:    1.00 1.00  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     0.92 0.92  0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92 0.92
PHF Volume:    60  667    48   64  668   39   68   90   37   65   70   62
Reduct Vol:     0    0     0    0    0    0    0    0    0    0    0    0
Reduced Vol:   60  667    48   64  668   39   68   90   37   65   70   62
PCE Adj:     1.00 1.00  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   60  667    48   64  668   39   68   90   37   65   70   62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1900 1900  1900 1900 1900 1900 1900 1900 1900 1900 1900 1900
Adjustment:  0.28 0.93  0.92 0.27 0.93 0.93 0.74 0.74 0.74 0.74 0.75 0.74
Lanes:       1.00 0.93  0.07 1.00 0.94 0.06 0.35 0.46 0.19 0.33 0.35 0.32
Final Sat.:   523 1641   118  516 1665   97  492  648  266  469  500  446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.41  0.41 0.12 0.40 0.40 0.14 0.14 0.14 0.14 0.14 0.14
Crit Moves:       ****                            ****
Green/Cycle: 0.68 0.68  0.68 0.68 0.68 0.68 0.23 0.23 0.23 0.23 0.23 0.23
Volume/Cap:  0.17 0.60  0.60 0.18 0.59 0.59 0.60 0.60 0.60 0.60 0.60 0.60
Delay/Veh:    6.3  9.9   9.9  6.4  9.7  9.7 39.2 39.2 39.2 39.1 39.1 39.1
User DelAdj: 1.00 1.00  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
AdjDel/Veh:   6.3  9.9   9.9  6.4  9.7  9.7 39.2 39.2 39.2 39.1 39.1 39.1
LOS by Move:    A    A     A    A    A    A    D    D    D    D    D    D
HCM2kAvgQ:      1   12    12    1   12   12    6    7    6    7    7    6
Note: Queue reported is the number of cars per lane.
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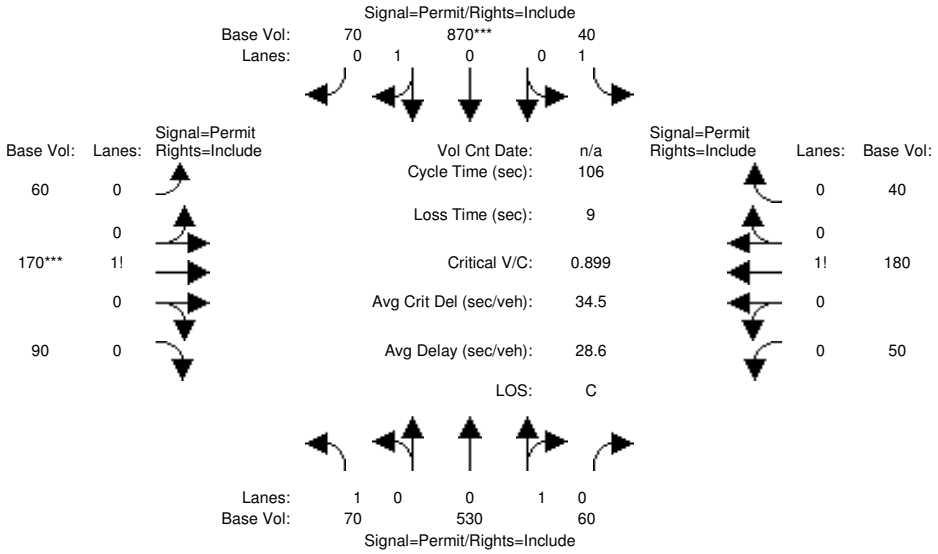
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan AM

Intersection #3: Main Street / Adams Street



Street Name:	Main Street						Adams Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	0	0	0
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	70	530	60	40	870	70	60	170	90	50	180	40
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	530	60	40	870	70	60	170	90	50	180	40
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	76	576	65	43	946	76	65	185	98	54	196	43
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	576	65	43	946	76	65	185	98	54	196	43
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	576	65	43	946	76	65	185	98	54	196	43
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.10	0.92	0.92	0.30	0.92	0.92	0.76	0.76	0.75	0.76	0.76	0.76
Lanes:	1.00	0.90	0.10	1.00	0.93	0.07	0.19	0.53	0.28	0.18	0.67	0.15
Final Sat.:	183	1572	178	562	1626	131	270	765	405	268	965	214
Capacity Analysis Module:												
Vol/Sat:	0.42	0.37	0.37	0.08	0.58	0.58	0.24	0.24	0.24	0.20	0.20	0.20
Crit Moves:					****			****				
Green/Cycle:	0.65	0.65	0.65	0.65	0.65	0.65	0.27	0.27	0.27	0.27	0.27	0.27
Volume/Cap:	0.64	0.57	0.57	0.12	0.90	0.90	0.90	0.90	0.90	0.76	0.76	0.76
Delay/Veh:	23.0	11.1	11.1	7.3	25.6	25.6	60.5	60.5	60.5	43.8	43.8	43.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	23.0	11.1	11.1	7.3	25.6	25.6	60.5	60.5	60.5	43.8	43.8	43.8
LOS by Move:	C	B	B	A	C	C	E	E	E	D	D	D
HCM2kAvgQ:	2	11	11	1	29	29	14	15	14	10	10	10

Note: Queue reported is the number of cars per lane.

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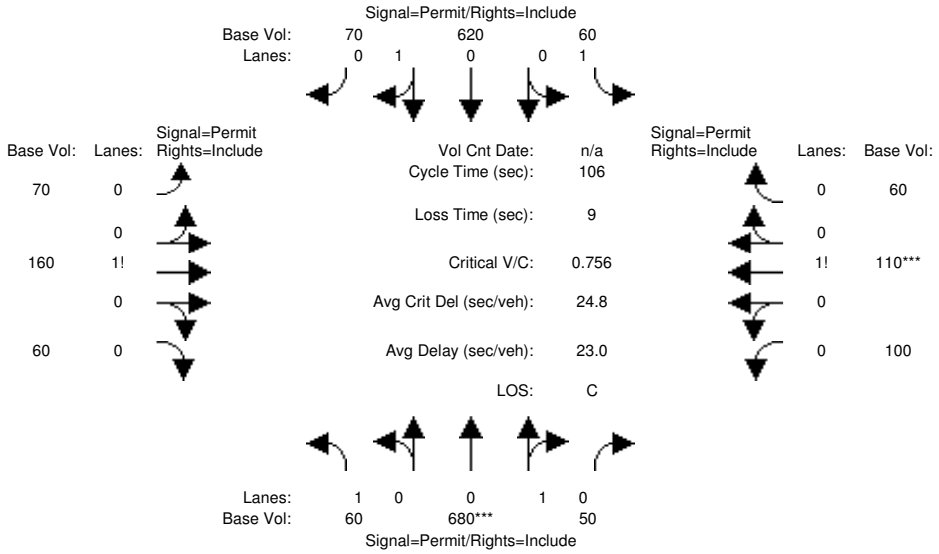
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan PM

Intersection #3: Main Street / Adams Street



Street Name:	Main Street						Adams Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	17	17	17	17	17	17	20	20	20	0	0	0
Y+R:	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.0	4.0	4.0
Volume Module:												
Base Vol:	60	680	50	60	620	70	70	160	60	100	110	60
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	60	680	50	60	620	70	70	160	60	100	110	60
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	65	739	54	65	674	76	76	174	65	109	120	65
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	65	739	54	65	674	76	76	174	65	109	120	65
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	65	739	54	65	674	76	76	174	65	109	120	65
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.20	0.93	0.92	0.18	0.92	0.92	0.78	0.78	0.78	0.64	0.64	0.64
Lanes:	1.00	0.93	0.07	1.00	0.90	0.10	0.24	0.55	0.21	0.37	0.41	0.22
Final Sat.:	389	1638	120	341	1572	177	359	821	308	451	496	271
Capacity Analysis Module:												
Vol/Sat:	0.17	0.45	0.45	0.19	0.43	0.43	0.21	0.21	0.21	0.24	0.24	0.24
Crit Moves:		****									****	
Green/Cycle:	0.60	0.60	0.60	0.60	0.60	0.60	0.32	0.32	0.32	0.32	0.32	0.32
Volume/Cap:	0.28	0.76	0.76	0.32	0.72	0.72	0.67	0.67	0.67	0.76	0.76	0.76
Delay/Veh:	11.0	18.9	18.9	11.6	17.5	17.5	34.8	34.8	34.8	40.7	40.7	40.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	11.0	18.9	18.9	11.6	17.5	17.5	34.8	34.8	34.8	40.7	40.7	40.7
LOS by Move:	B	B	B	B	B	B	C	C	C	D	D	D
HCM2kAvgQ:	1	18	18	1	17	17	10	10	10	10	10	10

Note: Queue reported is the number of cars per lane.

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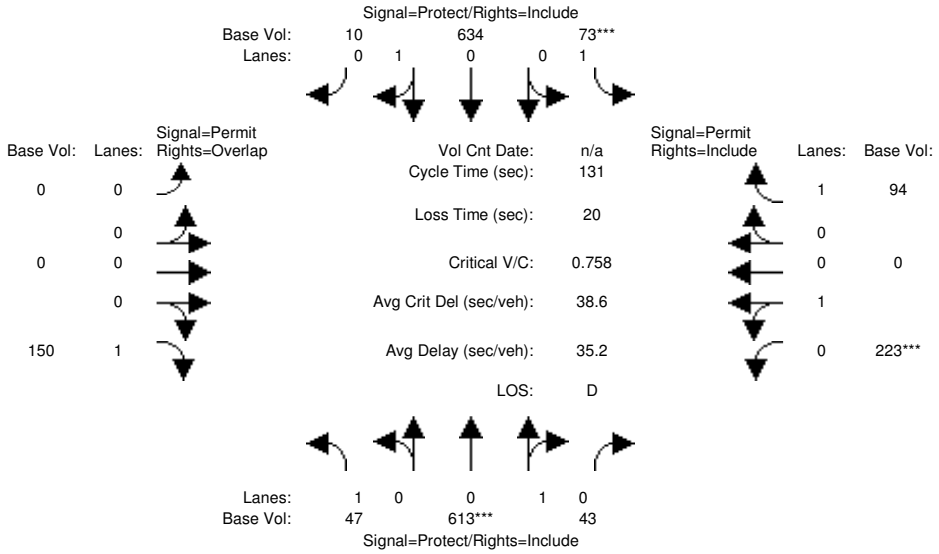
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
Existing AM

Intersection #4: Main Street / Pope Street



Street Name:	Main Street						Pope Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	27	27	7	26	26	0	0	7	28	28	28
Y+R:	3.0	3.5	3.5	3.0	3.5	3.5	0.0	0.0	3.0	3.0	3.0	3.0
Volume Module:												
Base Vol:	47	613	43	73	634	10	0	0	150	223	0	94
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	47	613	43	73	634	10	0	0	150	223	0	94
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	51	666	47	79	689	11	0	0	163	242	0	102
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	666	47	79	689	11	0	0	163	242	0	102
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	51	666	47	79	689	11	0	0	163	242	0	102
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.93	0.92	0.89	0.93	0.93	1.00	1.00	0.82	0.67	1.00	0.80
Lanes:	1.00	0.93	0.07	1.00	0.98	0.02	0.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1688	1643	115	1688	1745	28	0	0	1561	1277	0	1520
Capacity Analysis Module:												
Vol/Sat:	0.03	0.41	0.41	0.05	0.39	0.39	0.00	0.00	0.10	0.19	0.00	0.07
Crit Moves:		****		****						****		
Green/Cycle:	0.07	0.53	0.53	0.06	0.53	0.53	0.00	0.00	0.32	0.25	0.00	0.25
Volume/Cap:	0.43	0.76	0.76	0.76	0.75	0.75	0.00	0.00	0.32	0.76	0.00	0.27
Delay/Veh:	60.7	27.4	27.4	87.3	27.8	27.8	0.0	0.0	34.0	55.5	0.0	39.8
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.7	27.4	27.4	87.3	27.8	27.8	0.0	0.0	34.0	55.5	0.0	39.8
LOS by Move:	E	C	C	F	C	C	A	A	C	E	A	D
HCM2kAvgQ:	2	22	22	3	22	22	0	0	5	11	0	3

Note: Queue reported is the number of cars per lane.

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St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
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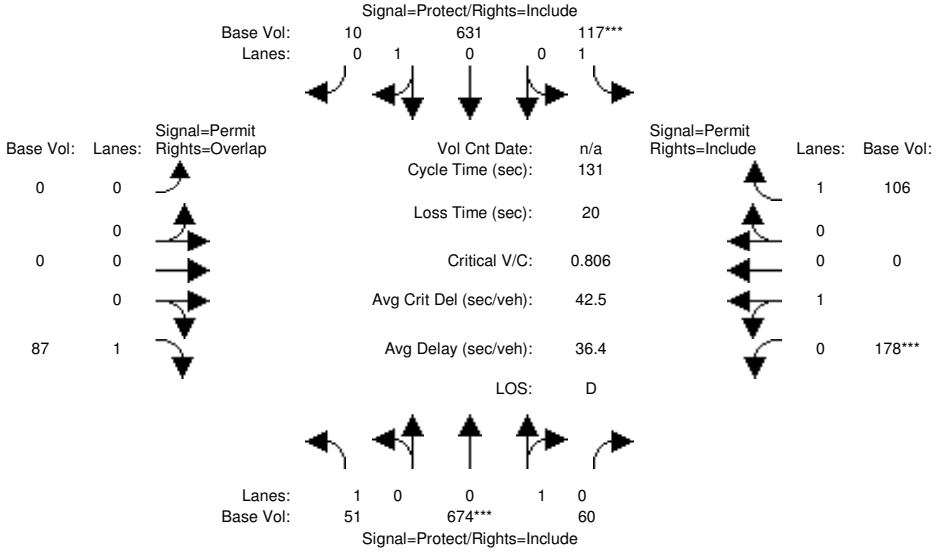
Intersection #4: Main Street / Pope Street



Street Name:	Main Street						Pope Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	27	27	7	26	26	0	0	7	28	28	28
Y+R:	3.0	3.5	3.5	3.0	3.5	3.5	0.0	0.0	3.0	3.0	3.0	3.0
Volume Module:												
Base Vol:	51	674	60	117	631	10	0	0	87	178	0	106
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	51	674	60	117	631	10	0	0	87	178	0	106
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	55	733	65	127	686	11	0	0	95	193	0	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	733	65	127	686	11	0	0	95	193	0	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	55	733	65	127	686	11	0	0	95	193	0	115
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.92	0.92	0.89	0.93	0.93	1.00	1.00	0.82	0.67	1.00	0.79
Lanes:	1.00	0.92	0.08	1.00	0.98	0.02	0.00	0.00	1.00	1.00	0.00	1.00
Final Sat.:	1688	1612	143	1688	1745	28	0	0	1555	1267	0	1509
Capacity Analysis Module:												
Vol/Sat:	0.03	0.45	0.45	0.08	0.39	0.39	0.00	0.00	0.06	0.15	0.00	0.08
Crit Moves:		****		****						****		
Green/Cycle:	0.08	0.54	0.54	0.09	0.56	0.56	0.00	0.00	0.29	0.21	0.00	0.21
Volume/Cap:	0.43	0.84	0.84	0.84	0.70	0.70	0.00	0.00	0.21	0.71	0.00	0.36
Delay/Veh:	60.2	31.6	31.6	90.0	23.4	23.4	0.0	0.0	35.4	56.5	0.0	44.5
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	60.2	31.6	31.6	90.0	23.4	23.4	0.0	0.0	35.4	56.5	0.0	44.5
LOS by Move:	E	C	C	F	C	C	A	A	D	E	A	D
HCM2kAvgQ:	2	27	27	5	20	20	0	0	3	9	0	4

Note: Queue reported is the number of cars per lane.

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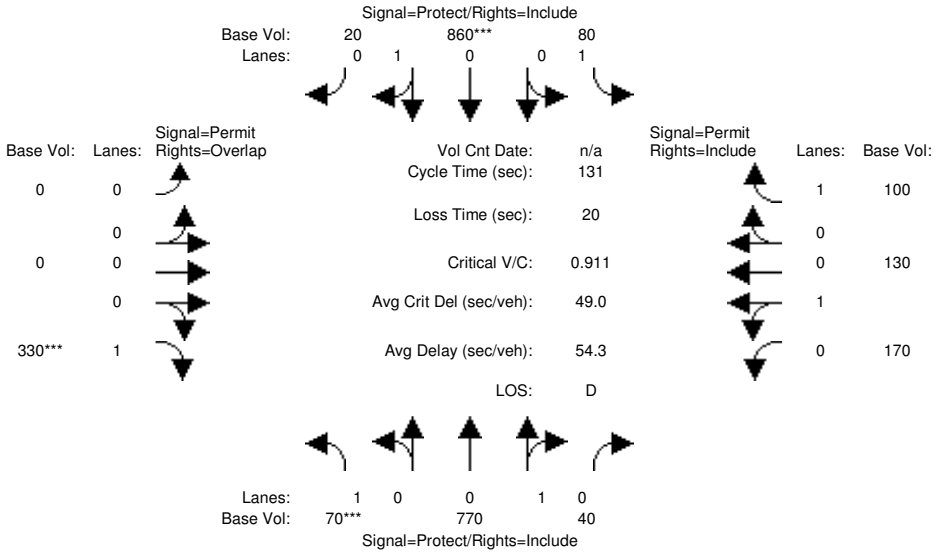
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan AM

Intersection #4: Main Street / Pope Street



Street Name:	Main Street						Pope Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	27	27	7	26	26	0	0	7	28	28	28
Y+R:	3.0	3.5	3.5	3.0	3.5	3.5	0.0	0.0	3.0	3.0	3.0	3.0
Volume Module:												
Base Vol:	70	770	40	80	860	20	0	0	330	170	130	100
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	70	770	40	80	860	20	0	0	330	170	130	100
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	76	837	43	87	935	22	0	0	359	185	141	109
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	837	43	87	935	22	0	0	359	185	141	109
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	837	43	87	935	22	0	0	359	185	141	109
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.93	0.93	0.89	0.93	0.93	1.00	1.00	0.81	0.78	0.80	0.79
Lanes:	1.00	0.95	0.05	1.00	0.98	0.02	0.00	0.00	1.00	0.57	0.43	1.00
Final Sat.:	1688	1677	87	1688	1731	40	0	0	1546	848	648	1502
Capacity Analysis Module:												
Vol/Sat:	0.05	0.50	0.50	0.05	0.54	0.54	0.00	0.00	0.23	0.22	0.22	0.07
Crit Moves:	****				****				****			
Green/Cycle:	0.05	0.59	0.59	0.06	0.60	0.60	0.00	0.00	0.25	0.20	0.20	0.20
Volume/Cap:	0.84	0.85	0.85	0.82	0.91	0.91	0.00	0.00	0.93	1.11	1.11	0.37
Delay/Veh:	109.5	29.1	29.1	98.1	34.1	34.1	0.0	0.0	75.6	136.2	136	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	109.5	29.1	29.1	98.1	34.1	34.1	0.0	0.0	75.6	136.2	136	46.3
LOS by Move:	F	C	C	F	C	C	A	A	E	F	F	D
HCM2kAvgQ:	3	29	29	3	33	33	0	0	18	20	21	4

Note: Queue reported is the number of cars per lane.

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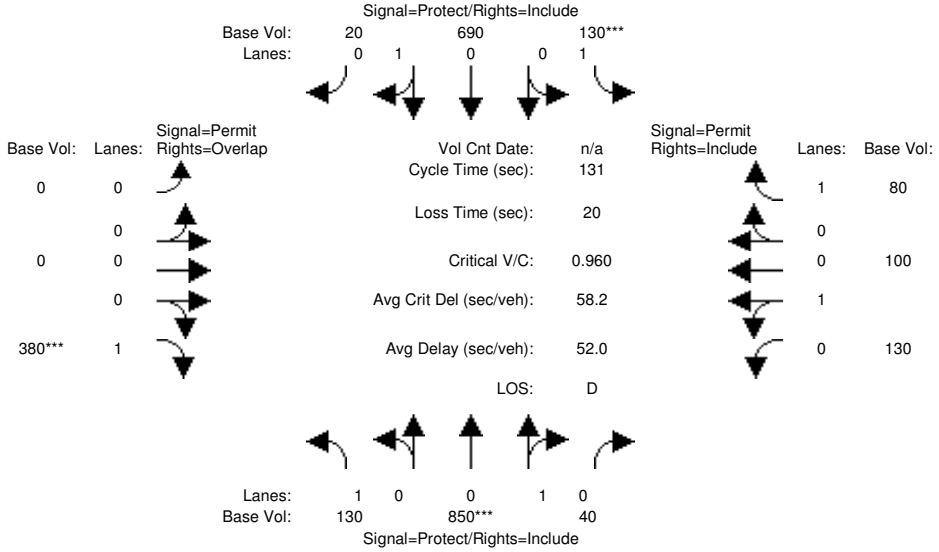
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan PM

Intersection #4: Main Street / Pope Street



Street Name:	Main Street						Pope Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	7	27	27	7	26	26	0	0	7	28	28	28
Y+R:	3.0	3.5	3.5	3.0	3.5	3.5	0.0	0.0	3.0	3.0	3.0	3.0
Volume Module:												
Base Vol:	130	850	40	130	690	20	0	0	380	130	100	80
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	130	850	40	130	690	20	0	0	380	130	100	80
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	141	924	43	141	750	22	0	0	413	141	109	87
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	924	43	141	750	22	0	0	413	141	109	87
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	924	43	141	750	22	0	0	413	141	109	87
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.89	0.93	0.93	0.89	0.93	0.93	1.00	1.00	0.82	0.79	0.80	0.79
Lanes:	1.00	0.96	0.04	1.00	0.97	0.03	0.00	0.00	1.00	0.57	0.43	1.00
Final Sat.:	1688	1685	79	1688	1720	50	0	0	1556	850	654	1499
Capacity Analysis Module:												
Vol/Sat:	0.08	0.55	0.55	0.08	0.44	0.44	0.00	0.00	0.27	0.17	0.17	0.06
Crit Moves:		****		****					****			
Green/Cycle:	0.11	0.57	0.57	0.09	0.55	0.55	0.00	0.00	0.30	0.19	0.19	0.19
Volume/Cap:	0.79	0.96	0.96	0.96	0.79	0.79	0.00	0.00	0.90	0.88	0.88	0.31
Delay/Veh:	77.8	46.1	46.1	121.6	27.7	27.7	0.0	0.0	64.6	76.8	76.8	46.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.8	46.1	46.1	121.6	27.7	27.7	0.0	0.0	64.6	76.8	76.8	46.3
LOS by Move:	E	D	D	F	C	C	A	A	E	E	E	D
HCM2kAvgQ:	5	38	38	7	24	24	0	0	19	13	13	3

Note: Queue reported is the number of cars per lane.

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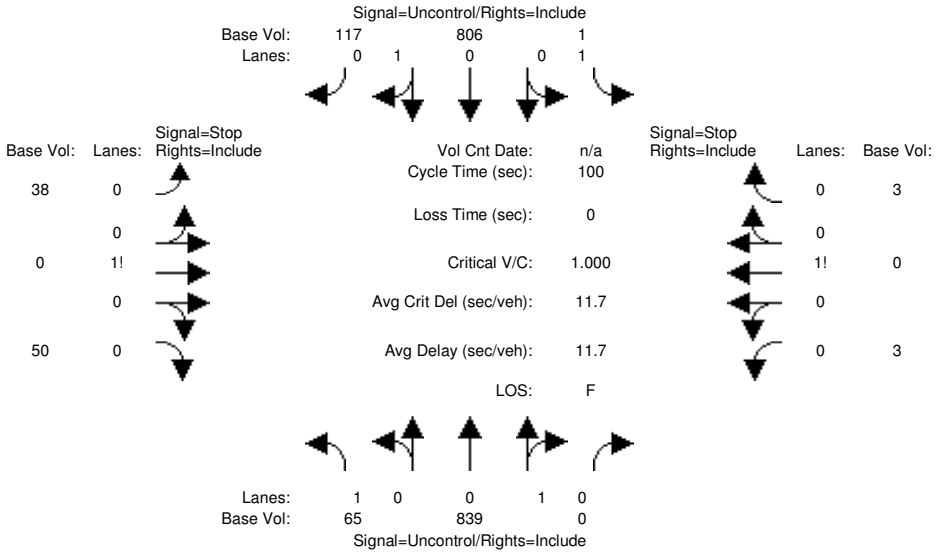
St. Helena General Plan
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #10: Main Street / Grayson Avenue / Mills Lane




```
Street Name:            Main Street                Grayson Avenue / Mills Lane
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      65  839     0     1  806   117    38    0    50     3    0     3
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   65  839     0     1  806   117    38    0    50     3    0     3
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    71  912     0     1  876   127    41    0    54     3    0     3
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   71  912     0     1  876   127    41    0    54     3    0     3
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.2 xxxx xxxxx   4.2 xxxx xxxxx   7.1  6.5   6.2   7.1  6.5   6.2
FollowUpTim:  2.3 xxxx xxxxx   2.3 xxxx xxxxx   3.5  4.0   3.3   3.5  4.0   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol: 1003 xxxx xxxxx   912 xxxx xxxxx  1997 1995   940  2022 2059   912
Potent Cap.:  671 xxxx xxxxx   727 xxxx xxxxx    45   61   323    44   56   335
Move Cap.:    671 xxxx xxxxx   727 xxxx xxxxx    41   55   323    33   50   335
Volume/Cap:  0.11 xxxx  xxxx  0.00 xxxx  xxxx  1.00 0.00  0.17  0.10 0.00  0.01
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.4 xxxx xxxxx   0.0 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del: 11.0 xxxx xxxxx  10.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    B    *     *     A    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx   82 xxxxx  xxxx   61 xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  6.9 xxxxx xxxxx  0.3 xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  243 xxxxx xxxxx 71.5 xxxxx
Shared LOS:     *    *     *     *    *     *     *    F     *     *    F     *
ApproachDel:    xxxxxx           xxxxxx            243.5             71.5
ApproachLOS:         *                *                F                F
Note: Queue reported is the number of cars per lane.
```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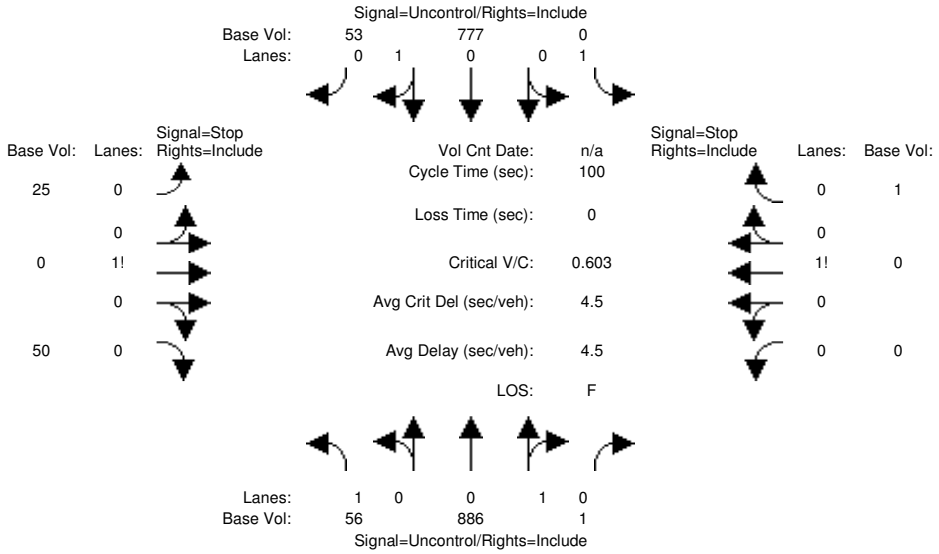
St. Helena General Plan
Existing Conditions

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #10: Main Street / Grayson Avenue / Mills Lane




```
Street Name:            Main Street                Grayson Avenue / Mills Lane
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      56  886     1     0  777    53    25    0    50     0    0     1
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   56  886     1     0  777    53    25    0    50     0    0     1
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:    61  963     1     0  845    58    27    0    54     0    0     1
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:   61  963     1     0  845    58    27    0    54     0    0     1
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.2 xxxx xxxxx xxxxx xxxx xxxxx   7.1  6.5   6.2 xxxxx xxxx   6.2
FollowUpTim:  2.3 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx   3.3
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  902 xxxx xxxxx  xxxx xxxx xxxxx  1959 1959   873  xxxx xxxx   964
Potent Cap.:  733 xxxx xxxxx  xxxx xxxx xxxxx    48   64   352  xxxx xxxx   312
Move Cap.:    733 xxxx xxxxx  xxxx xxxx xxxxx    45   59   352  xxxx xxxx   312
Volume/Cap:  0.08 xxxx  xxxx  xxxx xxxx  xxxx  0.60 0.00  0.15  xxxx xxxx  0.00
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.3 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx   0.0
Control Del: 10.4 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx  16.6
LOS by Move:    B    *     *     *    *     *     *    *     *     *    *     C
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  108 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  4.1 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  104 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    F     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx            103.7             16.6
ApproachLOS:         *                *                F                 C
Note: Queue reported is the number of cars per lane.
```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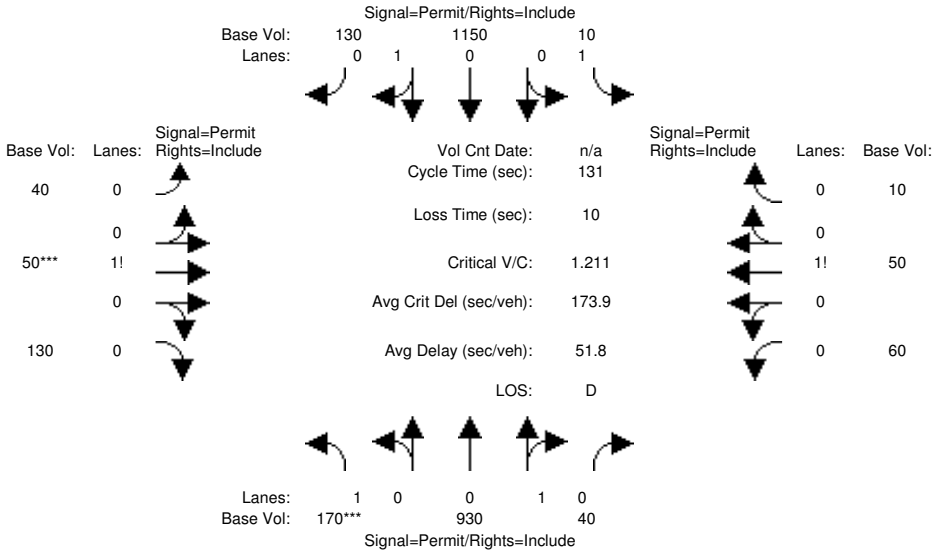
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan AM

Intersection #5: Main Street / Grayson Avenue / Mills Lane



Street Name:	Main Street						Grayson Avenue / Mills Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	170	930	40	10	1150	130	40	50	130	60	50	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	170	930	40	10	1150	130	40	50	130	60	50	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	185	1011	43	11	1250	141	43	54	141	65	54	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	185	1011	43	11	1250	141	43	54	141	65	54	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	185	1011	43	11	1250	141	43	54	141	65	54	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.10	0.93	0.93	0.22	0.92	0.92	0.80	0.80	0.80	0.51	0.51	0.51
Lanes:	1.00	0.96	0.04	1.00	0.90	0.10	0.18	0.23	0.59	0.50	0.42	0.08
Final Sat.:	192	1693	73	421	1572	178	275	344	895	482	402	80
Capacity Analysis Module:												
Vol/Sat:	0.96	0.60	0.60	0.03	0.80	0.80	0.16	0.16	0.16	0.14	0.14	0.14
Crit Moves:	****							****				
Green/Cycle:	0.79	0.79	0.79	0.79	0.79	0.79	0.13	0.13	0.13	0.13	0.13	0.13
Volume/Cap:	1.21	0.75	0.75	0.03	1.00	1.00	1.21	1.21	1.21	1.04	1.04	1.04
Delay/Veh:	154.1	9.3	9.3	2.9	38.3	38.3	189.3	189	189.3	147.2	147	147.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	154.1	9.3	9.3	2.9	38.3	38.3	189.3	189	189.3	147.2	147	147.2
LOS by Move:	F	A	A	A	D	D	F	F	F	F	F	F
HCM2kAvgQ:	14	23	23	0	58	58	17	17	17	9	9	9

Note: Queue reported is the number of cars per lane.

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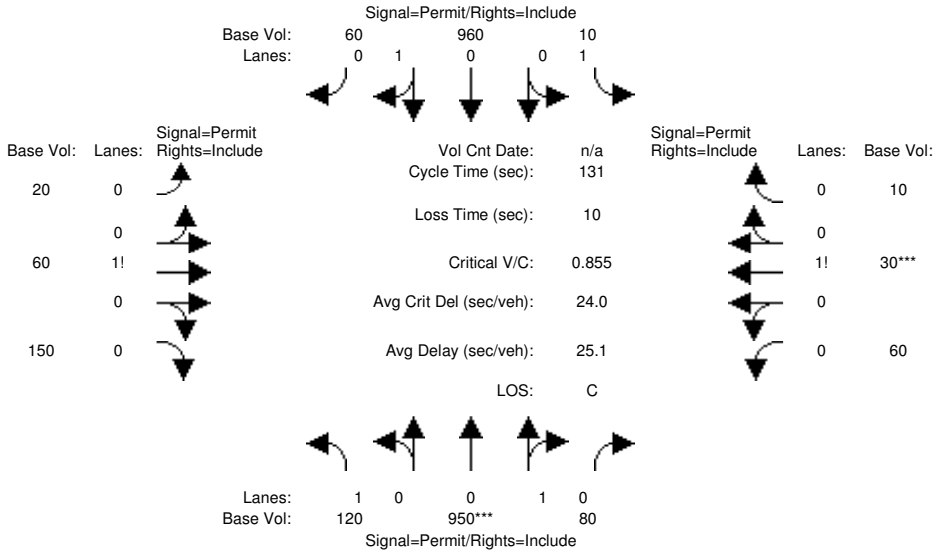
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Operations (Base Volume Alternative)
General Plan PM

Intersection #5: Main Street / Grayson Avenue / Mills Lane



Street Name:	Main Street						Grayson Avenue / Mills Lane					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L -	T -	R	L -	T -	R	L -	T -	R	L -	T -	R
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Volume Module:												
Base Vol:	120	950	80	10	960	60	20	60	150	60	30	10
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	120	950	80	10	960	60	20	60	150	60	30	10
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	130	1033	87	11	1043	65	22	65	163	65	33	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	130	1033	87	11	1043	65	22	65	163	65	33	11
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	130	1033	87	11	1043	65	22	65	163	65	33	11
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.13	0.92	0.92	0.13	0.93	0.93	0.88	0.88	0.88	0.38	0.38	0.38
Lanes:	1.00	0.92	0.08	1.00	0.94	0.06	0.09	0.26	0.65	0.60	0.30	0.10
Final Sat.:	247	1619	136	238	1657	104	146	437	1092	429	214	71
Capacity Analysis Module:												
Vol/Sat:	0.53	0.64	0.64	0.05	0.63	0.63	0.15	0.15	0.15	0.15	0.15	0.15
Crit Moves:		****									****	
Green/Cycle:	0.75	0.75	0.75	0.75	0.75	0.75	0.18	0.18	0.18	0.18	0.18	0.18
Volume/Cap:	0.71	0.86	0.86	0.06	0.84	0.84	0.84	0.84	0.84	0.86	0.86	0.86
Delay/Veh:	21.0	17.4	17.4	4.6	16.6	16.6	70.7	70.7	70.7	92.1	92.1	92.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	21.0	17.4	17.4	4.6	16.6	16.6	70.7	70.7	70.7	92.1	92.1	92.1
LOS by Move:	C	B	B	A	B	B	E	E	E	F	F	F
HCM2kAvgQ:	4	33	33	0	30	30	12	12	12	7	7	7

Note: Queue reported is the number of cars per lane.

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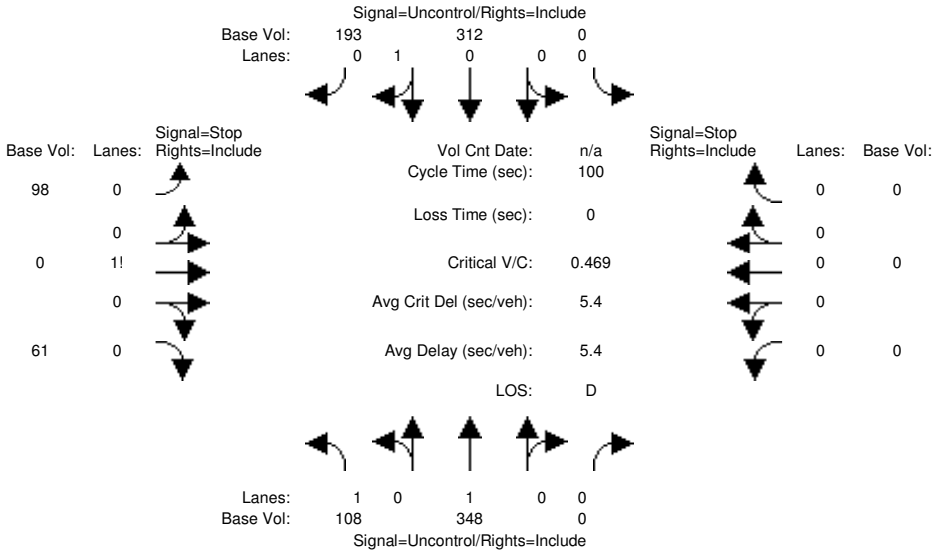
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing AM

Intersection #6: Silverado Trail / Pope Street




```
Street Name:         Silverado Trail                    Pope Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     108  348     0     0  312   193    98    0    61     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  108  348     0     0  312   193    98    0    61     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   117  378     0     0  339   210   107    0    66     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  117  378     0     0  339   210   107    0    66     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  549 xxxx xxxxx  xxxx xxxx xxxxx  1057 1057   444  xxxx xxxx xxxxx
Potent Cap.: 1021 xxxx xxxxx  xxxx xxxx xxxxx   249  225   614  xxxx xxxx xxxxx
Move Cap.:   1021 xxxx xxxxx  xxxx xxxx xxxxx   227  199   614  xxxx xxxx xxxxx
Volume/Cap:  0.12 xxxx  xxxx  xxxx xxxx  xxxx  0.47 0.00  0.11  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.4 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  9.0 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  300 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  3.4 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 32.2 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    D     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             32.2           xxxxxx
ApproachLOS:         *                *                D                *
Note: Queue reported is the number of cars per lane.
```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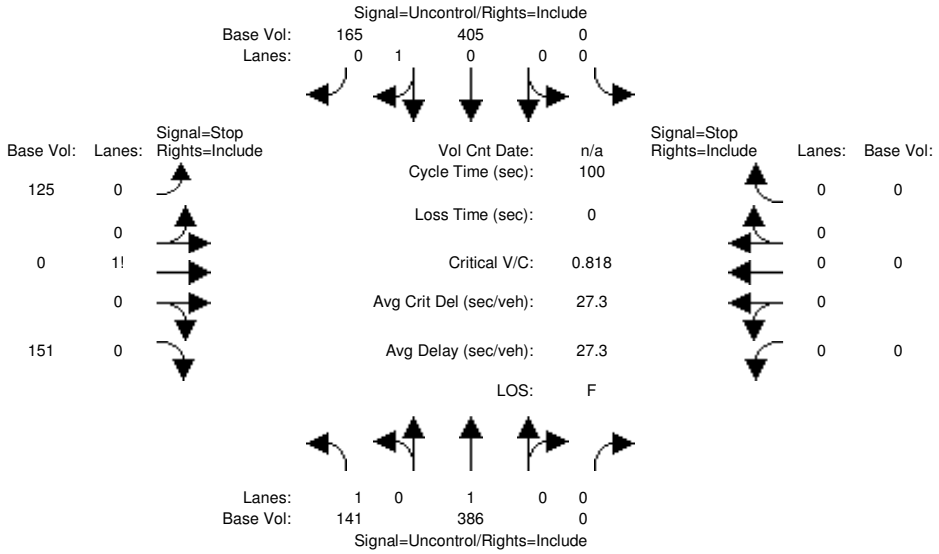
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
Existing PM

Intersection #6: Silverado Trail / Pope Street




```
Street Name:         Silverado Trail                     Pope Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     141  386     0     0  405   165   125    0   151     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  141  386     0     0  405   165   125    0   151     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   153  420     0     0  440   179   136    0   164     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  153  420     0     0  440   179   136    0   164     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  620 xxxx xxxxx  xxxx xxxx xxxxx  1256 1256   530  xxxx xxxx xxxxx
Potent Cap.:  961 xxxx xxxxx  xxxx xxxx xxxxx   189  171   549  xxxx xxxx xxxxx
Move Cap.:    961 xxxx xxxxx  xxxx xxxx xxxxx   166  144   549  xxxx xxxx xxxxx
Volume/Cap:  0.16 xxxx  xxxx  xxxx xxxx  xxxx  0.82 0.00  0.30  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.6 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  9.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  268 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 12.8 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  131 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    F     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx            131.1           xxxxxx
ApproachLOS:         *                *                F                *
Note: Queue reported is the number of cars per lane.
```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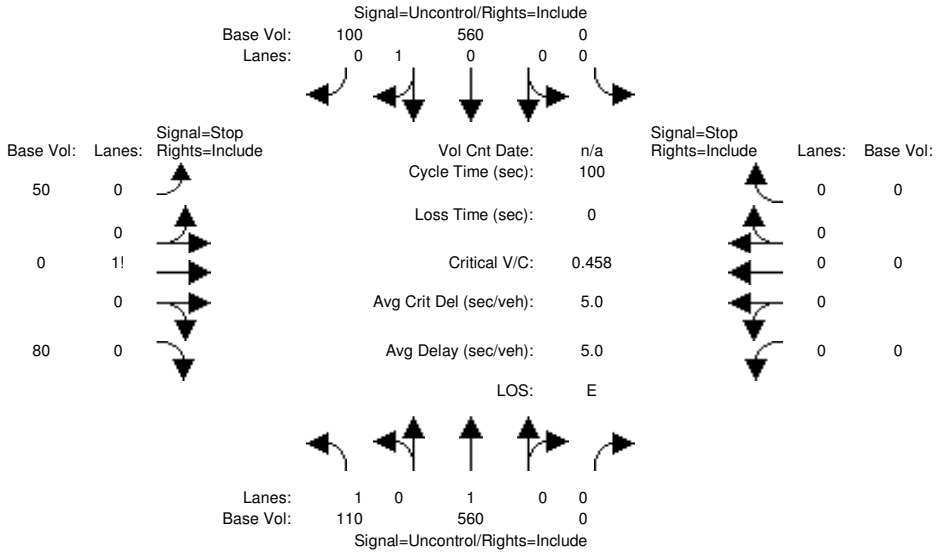
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
General Plan AM

Intersection #6: Silverado Trail / Pope Street




```
Street Name:         Silverado Trail                     Pope Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     110  560     0     0  560   100    50    0    80     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  110  560     0     0  560   100    50    0    80     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   120  609     0     0  609   109    54    0    87     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  120  609     0     0  609   109    54    0    87     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  717 xxxx xxxxx  xxxx xxxx xxxxx  1511 1511   663  xxxx xxxx xxxxx
Potent Cap.:  884 xxxx xxxxx  xxxx xxxx xxxxx   132  120   461  xxxx xxxx xxxxx
Move Cap.:    884 xxxx xxxxx  xxxx xxxx xxxxx   119  104   461  xxxx xxxx xxxxx
Volume/Cap:  0.14 xxxx  xxxx  xxxx xxxx  xxxx  0.46 0.00  0.19  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.5 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del:  9.7 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    A    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  218 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  3.9 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 47.4 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    E     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx             47.4           xxxxxx
ApproachLOS:         *                *                E                *
Note: Queue reported is the number of cars per lane.
```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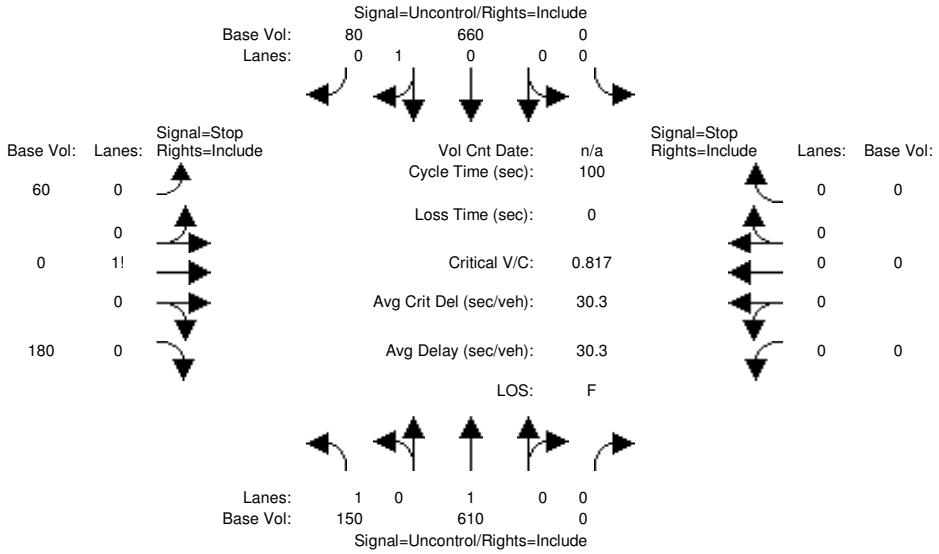
St. Helena General Plan
Existing AM

Level Of Service Computation Report
2000 HCM Unsignalized (Base Volume Alternative)
General Plan PM

Intersection #6: Silverado Trail / Pope Street




```
Street Name:         Silverado Trail                     Pope Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     150  610     0     0  660    80    60    0   180     0    0     0
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  150  610     0     0  660    80    60    0   180     0    0     0
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92  0.92 0.92  0.92
PHF Volume:   163  663     0     0  717    87    65    0   196     0    0     0
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
FinalVolume:  163  663     0     0  717    87    65    0   196     0    0     0
------------|---------------||---------------||---------------||---------------|
Critical Gap Module:
Critical Gp:  4.1 xxxx xxxxx xxxxx xxxx xxxxx   6.4  6.5   6.2 xxxxx xxxx xxxxx
FollowUpTim:  2.2 xxxx xxxxx xxxxx xxxx xxxxx   3.5  4.0   3.3 xxxxx xxxx xxxxx
------------|---------------||---------------||---------------||---------------|
Capacity Module:
Cnflict Vol:  804 xxxx xxxxx  xxxx xxxx xxxxx  1750 1750   761  xxxx xxxx xxxxx
Potent Cap.:  820 xxxx xxxxx  xxxx xxxx xxxxx    94   86   405  xxxx xxxx xxxxx
Move Cap.:    820 xxxx xxxxx  xxxx xxxx xxxxx    80   69   405  xxxx xxxx xxxxx
Volume/Cap:  0.20 xxxx  xxxx  xxxx xxxx  xxxx  0.82 0.00  0.48  xxxx xxxx  xxxx
------------|---------------||---------------||---------------||---------------|
Level Of Service Module:
2Way95thQ:    0.7 xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx xxxx xxxxx
Control Del: 10.5 xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx xxxx xxxxx
LOS by Move:    B    *     *     *    *     *     *    *     *     *    *     *
Movement:     LT - LTR - RT    LT - LTR - RT    LT - LTR - RT    LT - LTR - RT
Shared Cap.: xxxx xxxx xxxxx  xxxx xxxx xxxxx  xxxx  201 xxxxx  xxxx xxxx xxxxx
SharedQueue:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx 14.3 xxxxx xxxxx xxxx xxxxx
Shrd ConDel:xxxxx xxxx xxxxx xxxxx xxxx xxxxx xxxxx  213 xxxxx xxxxx xxxx xxxxx
Shared LOS:     *    *     *     *    *     *     *    F     *     *    *     *
ApproachDel:    xxxxxx           xxxxxx            212.9           xxxxxx
ApproachLOS:         *                *                F                *
Note: Queue reported is the number of cars per lane.
```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