

This section of the DEIR describes the existing public facilities and services in Napa County and evaluates the affects associated with General Plan Update. This analysis addresses County-wide and regional impacts on these facilities and services and identifies mitigation measures to lessen those impacts. Please note that the following discussion has been broken into sub-sections associated with the public service/utility service type (e.g., fire protection, water supply, and sewer).

4.13.1 FIRE PROTECTION AND EMERGENCY MEDICAL RESPONSE

4.13.1.1 EXISTING SETTING

FIRE PROTECTION

The California Department of Forestry and Fire Protection (CDF) and the Napa County Fire Department (NCFD) provide fire protection and emergency medical response to nearly 30,000 residents covering 728 square miles of unincorporated Napa County except for 83 parcels that are served by the America Canyon Fire Protection District (ACFPD). The Napa County branch of the CDF serves six northern Bay Area counties and several municipalities. The Sonoma-Lake-Napa CDF Unit Chief also serves as the County's Fire Chief, coordinating fire protection services for all County fire agencies.

The NCFD also provides fire protection and related services to smaller communities and various agencies in the unincorporated portion of the County. The NCFD owns the fire protection stations and equipment but contracts with CDF for the staffing and management of the facilities.

There are five local fire departments and several volunteer fire departments providing fire protection to various portions of the County. The ADFPD, Napa Fire Department (NFD), St. Helena Fire Department (SHFD), Calistoga Fire Department (CFD), and the Napa State Hospital Fire Department (NSHFD) provide services through contracts and aid agreements. The Schnell-Vista Fire Protection District (SVFPD), the Knights Valley Volunteer Fire Department (KVVFD), and the Mountain Volunteer Fire Department (MVFD) are located outside the County but provide limited services to the County under necessary circumstances.

Service Standards

The Insurance Services Office (ISO) rating is the recognized classification for a fire department or district's ability to defend against major fires, with "1" being the best and "10" being the poorest. The NCFD's ISO rating is average in areas served by water systems and considered poor in remote rural areas, which results in a higher ISO rating. The NCFD has an ISO rating of 6 in areas with fire hydrants and 9 in those areas of the County not having hydrants.

Funding

The NCFD and emergency medical response service providers are funded through a combination of property taxes and contracts with various municipalities. The local fire departments (i.e., NFD, CFD, etc.) are funded through a combination of property taxes and the each jurisdiction's General Fund.

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EMERGENCY MEDICAL RESPONSE

The Napa County Office of Emergency Services (OES) works with state agencies, County departments, and various community groups to coordinate and handle major disasters affecting County residents. In the case of a disaster, an Emergency Operations Center (EOC) is setup and staffed with agency professionals to coordinate logistics, resources, and recovery programs. The Angwin Community Ambulance (ACA), Piner's Ambulance, REACH, the California Highway Patrol Air Operations Unit (CHP) provides emergency medical services in Napa County. **Table 4.13.1-1** illustrates the Napa County emergency medical providers, service areas, facilities and capacities, and existing demand for each provider.

**TABLE 4.13.1-1
EMERGENCY MEDICAL RESPONSE PROVIDERS IN NAPA COUNTY**

Service Provider	Angwin Community Ambulance	Piner's Ambulance	REACH	California Highway Patrol Air Operation Unit
Service Area	Serves the community of Angwin, Pope Valley and 2/3 of the Lake Berryessa Area. Also covers 250 square miles of northeastern of the County including Zones 5 and 6 of the Napa County Exclusive Operating Area	All of Napa County	Northern California (including all of Napa County)	7,000 square mile service area
Facilities and Staffing	3 ambulances, with up to 40 volunteers (average 25 volunteers)	7 stations, 12 ambulances, 70 field employees, and 15 staff (administrative personnel)	5 bases of operation, 9 medical transport helicopters and 3 fixed-winged medical transport planes, 105 full-time employee and 20 part-time employees	One Cessna 185F airplane, one long-range helicopter, and one trained paramedic (as part of the helicopter flight crew)
Existing Demand	ACA receives an average of 290 calls annually	Between 2003 and 2004, Piner's received a total of 8,248 emergency (911) calls or an average of 687.3 calls per month. Of the 8,248 calls, 5,762 calls were for patient transport and the remaining were dry runs or non-transport related	Between 2003 and 2004, REACH responded to 21 emergency calls. During the same time period REACH also had 32 inter-facility transports (hospital to hospital) out of Napa County and 230 into Napa County.	The CHP transported 12 patients out of Napa County in 2003

Source: Napa County, BDR 2005.

Service Standards

The ACA responds to emergency service calls outside their service area when Piner's requires assistance. ACA can respond to all portions of its service area within 45 minutes. Piner's Ambulance follows the service standards outlined in the County's Emergency service contract. REACH has established the following as its service standard "Provide customer high quality air medical transport services in a safe and efficient manner". The CHP also follows service standards as set forth in the Napa County Office of Emergency Services protocol.

4.13.1.2 REGULATORY FRAMEWORK

STATE

California Occupational Safety and Health Administration

In accordance with California Code of Regulations Title 8 Sections 1270 "Fire Prevention" and 6773 "Fire Protection and Fire Equipment" the California Occupational Safety and Health Administration (Cal/OSHA) has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the handling of highly combustible materials, fire hose sizing requirements, restrictions on the use of compressed air, access roads, and the testing, maintenance and use of all fire fighting and emergency medical equipment.

Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. The preservation of life, property and the environment is an inherent responsibility of local, state, and federal government. Napa County, in cooperation with the cities of Napa, American Canyon, Yountville, St Helena, Calistoga, and special districts, prepared the Emergency Operations Plan to ensure the most effective and economical allocation of resources for protection of people and property in time of an emergency. The plan establishes the emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the Standardized Emergency Management System (SEMS). The objective of the plan is to incorporate and coordinate all the facilities and personnel of the County and Operational Area member jurisdictions into an efficient organization capable of responding effectively to any emergency.

California Department of Forestry

The California Department of Forestry (CDF) emphasizes the management and protection of California's natural resources; a goal that is accomplished through ongoing assessment and study of the State's natural resources and an extensive CDF Resource Management Program, which is implemented in Napa County. CDF oversees enforcement of County's forest practice regulations and manages the areas of the County that provide for commercial timber production, public recreation, and research and demonstration of good forest management practices.

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Fire Hazard Severity

California has enacted statewide laws aimed at reducing wildfire hazards in wildland-urban interface areas. These regulations cover topics such as fire prevention, vegetation management, notification and penalties, fire hazard severity zones, defensible space, setbacks, and exemptions. For the complete text of the Fire Hazard Zoning Field Guide view the Office of the State Fire Marshal's fire safety planning website located at: <http://osfm.fire.ca.gov/zoning.html>.

California Public Resources Code

State Responsibility Area. The California Public Resources Code requires the designation of state responsibility areas (SRAs), which are identified based on cover, beneficial water uses, probable erosion damage, fire risks, and hazards. The financial responsibility of preventing and suppressing wildland fires in the SRA is primarily the responsibility of the State. Fire protection in areas outside the SRA is the responsibility of local or Federal jurisdictions and is referred to as local responsibility areas and federal responsibility areas, respectively. Generally, when development density within a given SRA exceeds one dwelling unit per acre on a regional basis, the land is no longer classified as an SRA and becomes the responsibility of the local jurisdiction.

Defensible Space Requirements. In 1987, SB 1075 was adopted to require the California Board of Forestry to establish minimum fire safety standards that apply to the SRA. Subsequently, Public Resources Code Section 4290 required local jurisdictions to implement these fire safe standards. The concept of defensible space is the cornerstone of fire safety regulations. The intent is to reduce the intensity of a wildland fire by reducing the volume and density of fuels (e.g., vegetation that can transmit fire from the natural growth to a building or structure), to provide increased safety for fire equipment and evacuating civilians, and to provide a point of attack or defense from a wildland fire. Defensible space is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names, building identification, and fuel modification measures. Public Resources Code Section 4291 requires that a fire break of 30 to 100 feet be provided around structures in areas that may be subject to wildlifes (e.g., forested areas, brush or grass-covered lands).

Vegetation Management Program

The CDF has a fuel reduction program called the Vegetation Management Program. Limited funding is available to conduct fuel management activities primarily by burning on parcels or aggregates of parcels of 100 acres or more. The objective of the Vegetation Management Program is to prevent high intensity wildfire through fuel modification. If brush can be kept at the medium fuel load level as described above, then the intensity of fire can be reduced substantially.

California Fire Plan

The California Board of Forestry and the CDF have developed the California Fire Plan in an effort to reduce the overall costs and losses from wildfire in California. According to the California Fire Plan, the primary purpose of wildland fire protection in California is to protect the human health and safety together with the wide range of assets found on California wildlands. These assets include timber; range; recreation; water and watershed; plants; air quality; cultural and historic resources; unique scenic areas; buildings; and wildlife, plants, and ecosystem health.

The California Fire Plan defines a standard for measuring the level of fire protection service provided in an area, considers assets at risk, incorporates the cooperative interdependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis. A key product of the California Fire Plan is the development of wildfire safety zones to reduce the risks to residents and firefighters from future large wildfires. The California Fire Plan defines an assessment process for measuring the level of service provided by the fire protection system for wildland fire. This measure can be used to assess the department's ability to provide an equal level of protection to sites with similar land types, as required by Public Resources Code Section 4130. This measure is the percentage of fires that are successfully controlled before unacceptable costs are incurred. Knowledge of level of service will help define the risk to wildfire damage faced by public and private assets in the wildlands.

LOCAL

Napa County General Plan

The existing Napa County General Plan (General Plan) was adopted in 1983 and has gone through various amendments since its adoption. The General Plan provides countywide goals and policies aimed at protecting County residents and land from fire related hazards. The Land Use Element, the Conservation and Open Space Element, and Safety Element of the General Plan all contain specific goals and policies related to fire protection and the management of fire hazards in the County.

Napa County Fire Department Strategic Plan

In November 2005 the Napa County Fire Department implemented a five-year strategic plan. The strategic plan identifies goals and objectives for the Napa County Fire Department to enhance the quality of service and reduce the risk and harm to life, property and the environment for Napa County residents.

Napa Operational Area Hazard Mitigation Plan (OAHMP)

The OAHMP was developed to ensure the most effective and economical allocation of resources for protection of people and property prior to the onset of a natural or technological disaster, including fires. The OAHMP identifies the County's potential hazards, their likelihood and frequency of occurrence, and a set of near-term, mid-term, and long-term mitigation measures were created to address these risks. Reader is referred to Section 4.9, Human Health and Risk of Upset for a further discussion of the OAHMP.

Napa County Code

The County has adopted the 2000 Uniform Fire Code and Standards, as published by the International Conference of Building Officials, in County Code Chapter 15.32.010. The Uniform Fire Code establishes standards for fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, wine caves, hazardous materials storage and use, provisions intended to protect and assist first responders, industrial processes, and many other general and specialized fire-safety elements for new and existing buildings and premises.

Additional fire ordinances can be found in Title 8 Health and Safety, Title 15 Buildings and Construction, and Title 18 Zoning. The Napa County Fire Protection ordinances located in Title 8,

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Division III Fire Protection establish regulations and guidelines for burning and fireworks, while Chapter 15.32, also known as the California Fire Code with local amendments, provides regulations for building and construction fire safety. Chapter 18.84 of the County Code, the Fire Risk Combination District ordinance, establishes district fire classifications intended to minimize the potential for wildfires and the loss of life and property.

4.13.1.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to fire protection and emergency services would occur if implementation of the proposed project:

- Would result in substantial adverse physical impacts associated with the provision of 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.

The reader is referred to impacts 4.9.4 and 4.9.5 in Section 4.9 (Human Health/Risk of Upset) regarding emergency access and wildlife impacts.

METHODOLOGY

Evaluation of potential fire protection and emergency service impacts was based on consultation with County staff and protection and emergency service providers, review of the applicable California Department of Forestry fire codes and regulations and review of the existing Napa County General Plan and other relevant literature.

IMPACTS AND MITIGATION MEASURES

Fire Protection and Emergency Medical Services

Impact 4.13.1.1 Land uses and development under the proposed Napa County General Plan Update would increase the demand for additional fire protection and emergency medical services and facilities, which may result in physical environmental impacts. (Significant and Mitigable – All Alternatives)

Subsequent development and growth in the County would increase the demand of fire protection services in the County. As described in Section 3.0 (Project Description), the proposed General Plan Update (under all alternatives) would largely retain existing land use patterns and would focus development into and adjacent to existing cities and areas designated for rural and urban development. In addition, the County is projecting 10,000 to 12,500 acres of new vineyard development as well as associated winery development and other agricultural uses that would also add to the demand for fire protection.

To accommodate future growth (not directly associated with the proposed General Plan Update), planned improvements for the City of Napa Fire Department include the construction of a new fire station with increased staffing and adding two new engines over the next five years. The City of American Canyon Fire Protection District planned improvements include the construction of a new station, which is in the architectural planning stage. This facility will most likely be constructed either on State Route 29 or at Silver Oak Trail in American Canyon. The

addition of these stations and supporting equipment and the subsequent increase in staffing would provide additional service capacity to accommodate future growth in the cities. There are no planned improvements for the Angwin Community Ambulance, Piner's Ambulance, or the CHP Air Operation Unit as services and facilities are adequate to meet current and projected needs. REACH is in the process of adding on helicopter to the existing fleet and will soon begin improvements on the existing maintenance facility, in addition to the new hanger facility, which is currently being constructed in Santa Rosa. The location, size of facility and potential environmental impacts resulting for the provision of new fire protection and emergency medical facilities and equipment cannot be determined at this time. The physical impacts resulting from the construction of new fire protection and emergency medical related facilities are generally short-term and temporary air quality and noise impacts. Other adverse impacts (i.e., water quality, erosion, biological resources, etc.) may result, depending on site-specific conditions and proximity to waterways and other important resource areas. For purposes of the programmatic environmental analysis provided in this DEIR, it is assumed that such facilities would be placed within existing designated rural and urban areas of the County. As previously discussed, the NCFD and emergency medical response service providers are funded through a combination of property taxes and contracts with various municipalities and each local fire department (i.e., NFD, CFD, etc.) are funded through a combination of property taxes and the each jurisdiction's General Fund.

The "Napa Firewise" program is currently, and would continue to be, implemented under Alternatives A, B and C in the proposed General Plan Update as well as County Code provisions associated building requirements (Chapter 15.32) and fire risk zones (Chapter 18.84) and Public Resources Code Sections 4290 and 4291. "Napa Firewise" is a community-based fire awareness program to educate the residents of Napa County on the dangers wildland fire poses to them and their community. The program also provides steps homeowners and landowners can take to protect themselves, their family and neighbors and to reduce threats to their property from wildland fires. County Code and Public Resources Code provisions provide development standards and restrictions regarding structure design, fuel modification zone design, adequacy of emergency access, water for fire fighting and other associated standards.

The detailed discussion of fire protection service impacts specific to each of the alternatives is provided below. The reader is also referred to Impact 4.9.5 in Section 4.9 (Human Health/Risk of Upset) for a discussion of wildland fire hazards. Potential traffic operational impacts associated with emergency response is addressed in Section 4.4 (Transportation).

Alternative A

As identified in Section 3.0 (Project Description), this alternative would retain the existing land use designations under the current General Plan Land Use Map as well as the policy guidance set forth under the existing General Plan. Between the year 2005 and 2030, it is projected that there would be an additional 2,235 dwelling units and 16,014,000 square feet of non-residential uses in the unincorporated portion of the County (in addition to new vineyard, winery and other agricultural development that could occur by year 2030). This development would increase demands for fire protection services County-wide and would potentially require the construction of new facilities that could trigger adverse environmental effects (as noted above). This impact is considered **significant and mitigable** with the implementation of the mitigation measures identified below.

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Alternative B

This alternative would generally retain the existing land use designations under the current General Plan Land Use Map similar to Alternative A. However, this alternative would provide for additional growth within currently General Plan designated areas for rural and urban development (such as within the unincorporated community of Angwin) as well as re-use of the Pacific Coast/Boca site and Napa Pipe site and County-owned properties in the City of Napa. Between the year 2005 and 2030, it is projected that there would be an additional 3,885 dwelling units and 14,636,000 square feet of non-residential uses in the unincorporated portion of the County. In addition to the proposed land use map, Alternative B would include roadway improvements (associated with the proposed General Plan Update Circulation Element) in the southern portion of the County that could improve the ability to respond to emergencies. This development would increase demands for fire protection services County-wide as well as within the City of Napa would and would potentially require the construction of new facilities that could trigger adverse environmental effects (as noted above). This impact is considered **significant and mitigable** with the implementation of the mitigation measures identified below.

Alternative C

Alternative C includes all the potential development and General Plan Update proposed roadway improvements as Alternative B, with the exception of an increased development potential (e.g., 7,635 new dwelling units by year 2030) and the expansion of rural and urban uses in the unincorporated community of Angwin and establishment of a new RUL for the City of American Canyon. Similar to Alternative B, this development would increase demands for fire protection services County-wide and would potentially require the construction of new facilities that could trigger adverse environmental effects (as noted above). This impact is considered **significant and mitigable** with the implementation of the mitigation measures identified below.

Mitigation Measures

The following mitigation measure would apply to Alternatives A, B and C:

- MM 4.13.1.1a** The County shall include a General Plan policy that requires that facilities constructed in caves shall be required to conform to access and fire suppression requirements as determined by the Napa County Fire Department base on the cave's use or occupancy.
- MM 4.13.1.1b** The County shall include a General Plan policy that requires that all new development shall comply with established fire safety standards. Design plans shall be referred to the appropriate fire agency for comment to verify compliance with applicable requirements as to:
- Adequacy of water supply for firefighting.
 - Site design for fire department access in and equipment in and around structures.
 - Ability for a safe and efficient fire department response.
 - Site-specific built-in fire protection features.

MM 4.13.1.1c The County shall include a General Plan policy that requires that water wells and other critical infrastructure intended for emergency use shall be provided with a source of alternate power.

Implementation of the above mitigation measures, Mitigation Measure MM 4.9.4 as well as compliance with County Code (Chapters 15.32 and 18.84) and Public Resources Code Sections 4290 and 4291 (e.g., provisions associated with development standards and restrictions regarding structure design, fuel modification zone design, adequacy of emergency access, water for fire fighting) would ensure that subsequent development under the proposed General Plan Update would not adversely impact fire protection services. Thus, this impact would be **less than significant** for all alternatives.

4.13.2 LAW ENFORCEMENT

4.13.2.1 EXISTING SETTING

NAPA COUNTY SHERIFF'S DEPARTMENT

The Napa County Sheriff's Department (NCSD) provides law enforcement services to the unincorporated portions of the County and through mutual aid agreements with the Napa City Police Department, the Vallejo City Police Department and the California Highway Patrol (CHP). **Table 4.13.2-1** illustrates the location, service area, and facilities and staffing for each sheriff's station in Napa County. The NCSD bases staffing ratios on the County's overall population and in 2005, the NCSD used a staffing standard of 0.7 officers per every 1,000 residents (Loughran, 2006).

4.13 PUBLIC SERVICES AND UTILITIES

**TABLE 4.13.2-1
NAPA COUNTY SHERIFF'S DEPARTMENT STATIONS**

Staffed Police Stations	Headquarters 1125 Third Napa	7401 Solano Yountville	3111 St. Helena Highway St. Helena	Angwin Plaza Angwin	Lake Berryessa Substation 5520 Knoxville Road
Service Area	Beat 2, extends generally north to Trancas Street in the City of Napa, east to the Solano County line, south to the city limits of American Canyon, and west to the Sonoma County line	Beat 3, extends west to the Sonoma County Line, south to roughly Trancas Street in the City, east to Chiles Pope Valley, and north to Town of Rutherford	Beat 4, extends west to Sonoma County line, north to Lake County line, east to Angwin and south to Pope Valley Road	Beat 4	Beat 5, extends east to the Yolo and Solano County lines, south to the Solano County Line, west to Chiles Pope Road, and north to Highway 128. Beat 6, extends north to Lake County line, west to Chiles Pope Valley Road, south to Lake Berryessa, and east to Yolo County.
Facilities	One patrol deputy, 24 hours a day, on 12-hour shifts	One sergeant and two deputies Permanently stationed squad cars	One sergeant and four deputies	One sergeant and four deputies	One sergeant and four deputies

Source: Banducci, 2004, Napa County 2001.

LOCAL POLICE DEPARTMENTS

The NCSO provides contract law enforcement services through mutual aid agreements to the St. Helena Police Department, the City of Calistoga Police Department, the City of Napa Police Department, and the City of St. Helena Police Department. The NCSO also provides contract law enforcement services to the City of American Canyon and the Town of Yountville. **Table 4.13.2-2** illustrates the location, service area, facilities and staffing, and the existing demand for each station.

**TABLE 4.13.2-2
CITY POLICE STATIONS IN NAPA COUNTY**

Staffed Police Departments	St. Helena Police Department 1480 Main St, St. Helena	City of Calistoga Police Department 1235 Washington Street Calistoga	City of Napa Police Department 1539 First Street, Napa
Service Area	Provides law enforcement for 6,100 residents covering an area of approximately 4 square miles (frequently responds calls outside St. Helena city limits)	Calistoga city limits as well and frequent calls outside city limits	Service area is same as that as the Office of Emergency Services
Facilities	13 sworn officers, four dispatchers, and 2 community service officers, 5 patrol cars, Motorcycle, K-9, and bicycle patrol	11 sworn officers, 13 non-sworn personnel (6 dispatchers, 5 parking enforcement officers, a juvenile division officer, and a police technician)	76 sworn officers (127 total full-time employees) and 22 patrol cars
Existing Demand	More than 10,000 incidents annually	6,786 incidents in 2002 (latest available information)	15,059 incidents in 2003 (latest available information)

Source: Napa County, BDR 2005.

Funding and Mutual Aid Agreements

The NCSD is funded through the County's General Fund and mutual aid agreements with local city police departments. Mutual aid agreements are a formal agreement process where the various law enforcement jurisdictions manage and maintain their own personnel and facilities but can give or receive assistance whenever necessary. The local city police department's mutual aid agreements with the NCSD are funded through each City's General Fund (Talbot, 2006).

Service Standards

Napa County Sheriff's Department

In general a first priority response is within 5 minutes, a second priority is within 10 minutes and a third priority is within 15 minutes. The NCSD has an average response time after dispatch of 17 minutes. This response average includes alarms, which are considered low priority and can take up to 30 to 40 minutes to respond to. Emergency/in-progress responses typically have lower average response times. Individual station response can vary depending of locality of the call and the proximity of the beat officer in relation to the incident.

Local Police Departments

There are no established service standards for the County's local police departments. However, the departments typically respond to priority incidents within the city limits within 2 minutes or less 80% of the time (Talbot, 2006). Incidents outside the city limits vary depending how far away the incident is from the dispatched officer. Response times can vary from between 3.5 minutes to more than one-half hour depending on the priority of the incident and the distance and availability from the nearest officer.

4.13.2.2 REGULATORY FRAMEWORK

LOCAL

Napa County General Plan

The existing Napa County General Plan (General Plan) was adopted in 1983 and has gone through various amendments since its adoption. The General Plan provides countywide goals and policies to provide adequate law enforcement and related services for the protection of the County citizens. The Land Use Element and Safety Element of the General Plan contain specific goals and policies related to the countywide provision of law enforcement (public services).

Emergency Response/Evacuation Plans

The State of California passed legislation authorizing the Office of Emergency Services (OES) to prepare a Standard Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. Non-compliance with SEMS could result in the State withholding disaster relief from the non-complying jurisdiction in the event of an emergency disaster. The preservation of life, property and the environment is an inherent responsibility of local, state, and federal government. Napa County, in cooperation with the cities of Napa, American Canyon, Yountville, St Helena, Calistoga, and special districts,

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prepared the Emergency Operations Plan to ensure the most effective and economical allocation of resources for protection of people and property in time of an emergency. The plan establishes the emergency organization, assigns tasks, specifies policies and general procedures, and provides for coordination of planning efforts of the various emergency staff and service elements utilizing the Standardized Emergency Management System (SEMS). The objective of the plan is to incorporate and coordinate all the facilities and personnel of the County and Operational Area member jurisdictions into an efficient organization capable of responding effectively to any emergency.

4.13.2.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to police protection would occur if implementation of the proposed project:

- Would result in substantial adverse physical impacts associated with the provision of 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.

The reader is referred to Impact 4.9.4 in Section 4.9 (Human Health/Risk of Upset) regarding emergency access.

METHODOLOGY

Evaluation of potential law enforcement impacts was based on consultation with the staff from the Napa County Sheriff's Department and review of relevant General Plan policies and implementation measures.

IMPACTS AND MITIGATION MEASURES

Law Enforcement Service and Standards

Impact 4.13.2.1 Land uses and development under the proposed Napa County General Plan Update would increase the demand for law enforcement services. (Less Than Significant – Alternative A; Significant and Mitigable – Alternatives B and C)

As previously discussed, the Napa County Sheriff's Department (NCSA) provides law enforcement services to the unincorporated portions of the County and assists the Napa City Police Department, the Vallejo City Police Department and the California Highway Patrol (CHP), through mutual aid agreements. The NCSA bases staffing ratios on the County's overall population and in 2005, the NCSA used a staffing standard of 0.7 officers per every 1,000 residents. There are no established service standards for the County's Sheriff's or local police departments. The departments typically respond to priority incidents within the city limits within two (2) minutes or less 80% of the time. Incidents outside the city limits vary depending how far away the incident is from the dispatched officer. Potential traffic operational impacts associated with emergency response is addressed in Section 4.4 (Transportation).

All law enforcement services in the County are funded through the County's General Fund, individual city general funds, mutual aid agreements and other sources (e.g., grants), which are

generally anticipated to be adequate funding mechanism to meet the NCSO and local police department's projected staffing and service needs. However, it should be noted that funding levels of law enforcement services is ultimately decided by the Napa County Board of Supervisors and the local city and town councils for each incorporated city. Future growth within the County may require the construction or expansion of law enforcement facilities. Typical environmental effects regarding the construction and operation of a law enforcement facility involve issues with noise (intermittent noise associated with sirens), air quality (during the construction of the facility), biological resources (depending on location), cultural resources (depending on location), and public utilities (demand for electric, water and wastewater service). For purposes of the programmatic environmental analysis provided in this DEIR, it is assumed that such facilities would be placed within existing developed and urban areas of the County.

Alternative A

As previously discussed, implementation of Alternative A would include slow residential and employment growth with new development occurring only within existing urban areas. This slow growth scenario would result in limited demand increases for law enforcement and related services. Alternative A is anticipated to result in up to 5,013 new residents dispersed throughout the unincorporated County. Based on the standard of 0.7 officers per 1,000 residents, the County would need to add an additional four (4) officers and associated equipment for Alternative A. As noted above, this addition of law enforcement demand is anticipated to be addressed through existing funding mechanisms and the environmental effects of potential new or expanded law enforcement facilities have been programmatically addressed in this DEIR. Alternative A's impact would be **less than significant**.

Alternative B

Alternative B would involve some land use changes which would allow for additional development and/or redevelopment (e.g., redesignation of Napa Pipe and the Pacific Coast/Boca sites and re-use of County owned sites in the City of Napa). These changes to the land use map could result in concentrations of population necessitating additional services. Alternative B would also include roadway improvements (associated with the proposed General Plan Update Circulation Element), extension of recycled water to Coombsville and Carneros, as well as policy provisions for trails and public open space (proposed Recreation and Open Space Element in the General Plan Update). The roadway improvements in the southern portion of the County could improve the ability to respond to emergencies.

Overall, implementation of Alternative B is projected to result in up to 9,029 new residents in the unincorporated County. Based on the standard of 0.7 officers per 1,000 residents, the County would need to add an additional six (6) officers and related supporting equipment if Alternative B were implemented. However, it should be acknowledged that some of this growth would occur in the City of Napa (250 multi family units projected by year 2030 that could result in approximately 617 residents), generating the need for additional City police services. As noted above, the environmental effects of potential new or expanded law enforcement facilities have been programmatically addressed in this DEIR, however additional site-specific analysis would be required. Alternative B's impact would be **significant**, requiring implementation of the mitigation measures included below.

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Alternative C

Alternative C would involve some additional land use changes beyond those associated with Alternative B and allow for additional development and/or redevelopment (e.g., establishment of a new Rural-Urban Limit adjacent to the City of American Canyon in addition to the redesignation of Napa Pipe and the Pacific Coast/Boca sites) and further concentration of population in Angwin. Alternative C is projected to result in up to 18,063 new residents. Based on the standard of 0.7 officers per 1,000 residents, the County would need to add an additional thirteen (13) officers for Alternative C. However, it should be acknowledged that some of this growth would occur in the City of Napa (500 multi family units projected by year 2030 that could result in approximately 1,234 residents), generating the need for additional City police services. As noted above, this addition of law enforcement demand and the environmental effects of potential new or expanded law enforcement facilities have been programmatically addressed in this DEIR, however additional site-specific analysis would be required. Alternative C's impact would be **significant**, requiring implementation of the mitigation measures included below.

Mitigation Measures

- MM 4.13.2.1a** The County shall include a General Plan policy that requires that all new multifamily residential developments and non-residential developments resulting in substantial concentrations of daytime or nighttime populations to consult with County law enforcement to determine the need for special services and/or additional facilities, and to determine how those services and/or facilities can be provided prior to project approval. If the proposed project is adjacent to or within an incorporated city/town, consultation with their law enforcement agency shall also be required.
- MM 4.13.2.1b** New public safety facilities shall be located within already developed (i.e. non-agricultural) areas of the County and the County shall require site-specific analysis of new public safety facilities prior to their construction.

Implementation of the above mitigation measures would ensure that subsequent development under the proposed General Plan Update would not adversely impact public safety services. Thus, this impact would be **less than significant** for all alternatives.

4.13.3 WATER SUPPLY

4.13.3.1 EXISTING SETTING

The setting for water resources includes the various public and private water purveyors in Napa County. The cities of Napa, American Canyon, Calistoga, St. Helena, and the Town of Yountville provide public water within their respective corporate boundaries as well as delivering water to the unincorporated portions of the County. Other public water providers serving the County include: the Circle Oaks County Water District (COCWD), Congress Valley Water District (CVWD), Lake Berryessa Resort Improvement District (LBRID), Napa-Berryessa Resort Improvement District (NBRID), and the Spanish Flat Water District (SFWD). There are also several private water purveyors that supply water to the smaller communities in the County. The Napa County Flood and Water Conservation District is the "State Water" contractor and the individual cities, towns and water districts are considered "subcontractors" for potable water sources. The Town of Yountville and the City of American Canyon receive treated water from the State Water Project and the Congress Valley Water District receives treated water via City of Napa treatment and conveyance facilities. **Appendix J** includes the 2050 Napa Valley Water Resources Study

(October 2005), which contains detailed information regarding current city and County water supplies and demands as well as projections on water demands and future water supply projects under consideration for meeting future water demands. While this document does not address water supplies County-wide, it does represent the most current and comprehensive water supply analysis for Napa Valley area, which contains a majority of the County's water demands and supplies. Information from **Appendix J** as well as **Appendix H** are utilized in the analysis below.

As noted below and in Section 4.11 (Hydrology and Water Quality), the primary source of water for the cities within the County is surface water, while the primary source of water for the unincorporated area is groundwater (though some areas do utilize surface water, such as a portion of the unincorporated community of Angwin, and recycled water is currently being planned for the southern portion of the County). The largest source of groundwater for the County is the North Napa Valley Basin (which generally consistent to the "Main Basin" referred to in the 2050 Napa Valley Water Resources Study), Milliken-Sarco-Tulucay (MST) Subbasin and the Carneros Subbasin. As identified in Table 12 of Technical Memorandum No. 6 of **Appendix J**, total unincorporated water demand for current conditions under a normal year are within current supplies, while shortages are identified for multiple-dry year conditions (1,596 acre feet annually) and single-dry year conditions (3,176 acre-feet annually).

CITY OF AMERICAN CANYON

Water Supply

American Canyon's water supply is based on contracted entitlements drawn from two outside sources: the State Water Project (SWP) and the City of Vallejo. The City's SWP water supply is secured through a 1966 agreement between American Canyon County Water District (ACCD) and the Napa County Flood Control and Water Conservation District (NCFCWCD). The original agreement provided the City (as successor agency to ACCD) with an annual entitlement of SWP water through 2035 and established a service area that includes the current City boundaries and a section of the unincorporated County extending north to Soscol ridge. Although American Canyon's maximum annual entitlement remains at 5,200 acre-feet, there have been two ensuing water transfer agreements amending the City's entitlement schedule.

The first amendment to American Canyon's SWP entitlement occurred in 1998 following a water transfer agreement with the City of Calistoga. As part of a three-way agreement involving the City of Vallejo, American Canyon permanently transferred 500 acre-feet of its annual SWP entitlement to Calistoga. In addition to paying American Canyon a one-time compensation fee of \$500,000, Calistoga assumed all responsibilities of the entitlement, including payment to NCFCWCD. Calistoga was also required to reimburse Vallejo \$114,000 for the construction of facilities connecting American Canyon's distribution system to Vallejo's distribution system. This interconnection provides American Canyon the ability to purchase potable water from Vallejo under the terms and conditions of an earlier agreement (discussed below). The second amendment to American Canyon's SWP entitlement occurred in 2000 following its participation in a water transfer agreement between NCFCWCD and the Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. The City's share of the Kern County water transfer is 500 acre-feet.

The portion of American Canyon's water supply obtained from Vallejo is secured through a 1996 water supply agreement. This agreement entitles American Canyon to a maximum daily capacity of 1.0 million gallons (or 630 acre-feet annually). The agreement also enables

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American Canyon to purchase additional maximum day capacity from Vallejo over the course of five designated time periods: 1996-2001; 2002-2006; 2007-20011; 2012-2016; and 2017-2021. For each designated planning period, Vallejo agrees to make available a specified amount of additional capacity for purchase by American Canyon. The total amount of maximum daily capacity available to American Canyon over the next four planning periods in which Vallejo is obligated to reserve is 5.1 million gallons (this amount includes the City's base capacity of 1.0 million gallons). This amount equates to a total possible annual entitlement of 3,200 acre-feet. Any increase to the base daily entitlement of 1.0 million gallons, however, requires American Canyon to pay additional connection fees.

Beginning in 1996, American Canyon and Vallejo executed several addendums to this water supply agreement to secure additional water supplies. Most notably, a 2000 addendum provides American Canyon with an annual entitlement to 500 acre-feet of "permit water" drawn from Vallejo's water rights to Lindsey Slough. This water is delivered to American Canyon through the North Bay Aqueduct and allows the City to recover an equivalent amount of water previously transferred to the City of Calistoga. In addition, American Canyon maintains a separate addendum allowing it to purchase up to 500 acre-feet of raw water annually from Vallejo during water emergencies for agricultural, landscaping or golf course uses. The 1996 agreement, along with the aforementioned addendums, are in effect until mutually terminated.

TABLE 4.13.3-1
CITY OF AMERICAN CANYON AVAILABLE WATER SUPPLY (ACRE-FEET)

Year	State Water Project*	City of Vallejo	Permit Water
2003	4,500	630	500
2004	4,600	630	500
2005	4,700	630	500
2006	4,750	630	500
2007	4,800	630	500
2008	4,850	630	500

**American Canyon's SWP entitlements are scheduled to gradually increase each year through 2015 at which time the City shall reach its maximum entitlement of 5,200 acre-feet. Entitlements continue thereafter until 2035.*
Source: West Yost & Associates, 2005.

Water Demand

In 2002, American Canyon delivered approximately 922,948,800 million gallons (2,832 acre-feet) of potable water, resulting in a daily average of 2,528,627 (7.76 acre-feet) gallons. The City's maximum day water demand was 4.75 million gallons (14.57 acre-feet). The City currently provides water service to approximately 3,722 connections within its service area. Of this amount, 157 connections are located outside of the City.

**TABLE 4.13.3-2
CITY OF AMERICAN CANYON – WATER DEMAND (2002)**

Demand	Amount
Annual Water Demand:	922,948,800 gallons
Average Daily Water Demand:	2,528,627 gallons
Maximum Day Water Demand:	4.75 million gallons
Water Connections:	3,722
Population Served:	12,283

Source: West Yost & Associates, 2005.

Projected water demands for American Canyon were identified in its Water System Master Plan (2003) and further refined in the 2050 Napa Valley Water Resources Study (2005) and the City’s 2005 Urban Water Management Plan prepared by Winzler & Kelly (see **Appendix J**). Demands were determined by applying established water use factors (average gallons used per day) for each customer type according to land use projections for lands within its urban limit line and the airport industrial area. Although supplies are projected to be sufficient in normal years through the 2025 horizon evaluated in the City’s Urban Water Management Plan, the projected demand is expected to exceed supplies in single dry years and multiple dry years. The City’s plan also suggests demand management measures and water supply projects to address reliability and supply issues. **Table 4.13.3-3** presents the projected water demand for American Canyon through 2030.

**TABLE 4.13.3-3
CITY OF AMERICAN CANYON – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Year	Annual Demand
2006	4,679
2015	6,223
2020	6,459
2030	6,806

Source: West Yost & Associates, 2005.

Water Treatment, Distribution and Storage Facilities

American Canyon provides treatment of raw water drawn from the SWP and “permit water” from Vallejo at the American Canyon Water Treatment Plant (WTP). Both water sources are generated from the Sacramento-San Joaquin Delta and are conveyed and temporarily stored at the Napa Turnout Reservoir by the North Bay Aqueduct. The American Canyon WTP was constructed in 1976 and is located next to the Napa Turnout Reservoir in Jameson Canyon (State Highway 12). A new treatment facility utilizing membrane filtration was completed in 2004 and the current treatment capacity of 5.6 million gallons per day.

American Canyon’s water distribution system receives and distributes potable water generated from American Canyon WTP and the City of Vallejo. American Canyon’s water transmission system consists of a network of 10-inch to 20-inch water lines that serve the City as well unincorporated lands that extend as far north as Soscol Creek. The distribution system includes five pressure zones and is served by four treated water storage tanks with a total storage volume of 4.7 millions gallons.

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CITY OF NAPA

Water Supply

The City of Napa's water supply is drawn from three sources: Lake Hennessey, Milliken Reservoir, and the SWP. Napa's water rights to Lake Hennessey are secured through a license with the State Resources Control Board, Division of Water Rights. This license authorizes the City to divert and store up to 30,500 acre-feet of water annually from Conn, Sage and Chiles Creeks for beneficial use. Lake Hennessey was formed following the construction of the Conn Dam in 1946 and has an approximate storage capacity of 31,000 acre-feet. The City's Water System Optimization and Master Plan (1997) estimated that Lake Hennessey produced a firm yield (minimum yield in drought years) of approximately 5,000 acre-feet of water per year.

Napa's water rights to Milliken Reservoir are also secured through a license with the State Water Resources Control Board, Division of Water Rights. This license authorizes the City to divert and store up to 2,350 acre-feet of water annually from Milliken Creek, a tributary of the Napa River, for beneficial use. Milliken Reservoir was formed following the construction of the Milliken Dam in 1923 and has an approximate storage capacity of 1,980 acre-feet. The City's Water System Optimization and Master Plan (1997) estimated that Milliken Reservoir produced a firm yield of approximately 400 acre-feet of water per year. Milliken Reservoir is used as a supplemental water source between May and October when its turbidity levels can be effectively treated at the Milliken Water Treatment Plant.

The portion of Napa's water supply drawn from the SWP is secured through a 1966 agreement with NCFWCWD. SWP water is generated from the Sacramento-San Joaquin Delta near Barker Slough and is delivered to the Napa Turnout Reservoir in Jameson Canyon through the North Bay Aqueduct. The City's "original Table A" entitlement schedule includes annually increasing entitlements up to a maximum annual entitlement of 18,800 acre-feet by 2021. The City's SWP entitlement schedule was modified in 2000 following a water transfer agreement between NCFWCWD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified terms and conditions for NCFWCWD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Napa's share of the Kern County water transfer is 1,000 acre-feet. As a result of these amendments, the City's cumulative maximum annual SWP entitlement is 19,800 acre-feet by 2021.

TABLE 4.13.3-4
CITY OF NAPA – AVAILABLE WATER SUPPLY (ACRE-FEET)

Year	Lake Hennessey*	Milliken Reservoir*	State Water Project
2003	31,000	1,980	13,350
2004	31,000	1,980	13,600
2005	31,000	1,980	13,850
2006	31,000	1,980	14,100
2007	31,000	1,980	14,350
2008	31,000	1,980	14,600

* Napa's Water System Optimization and Master Plan (1997) estimated Lake Hennessey and Milliken Reservoir's annual firm yields at 5,000 acre-feet and 400 acre-feet respectively.

Source: West Yost & Associates, 2005.

Water Demand

In 2002, Napa delivered approximately 5.26 billion gallons (16,130 acre-feet) of potable water, resulting in an approximate daily average of 14.4 million gallons. This figure does not include SWP deliveries to the City of Calistoga (560 acre-feet), Town of Yountville (282 acre-feet), and the City of American Canyon (636 acres). The City’s maximum day water demand was approximately 30.7 million gallons. The City currently provides water service to approximately 24,293 connections. Of this amount, 2,187 connections are located outside of the City.

**TABLE 4.13.3-5
CITY OF NAPA – WATER DEMAND (2002)**

Demand	Amount
Annual Water Demand:	5,256,000,000
Average Daily Water Demand:	14.4 million gallons
Maximum Day Water Demand:	30.7 million gallons
Water Connections:	24,293
Population Served:	80,167

Source: West Yost & Associates, 2005

Projected water demands for Napa were identified in the City’s Water System Optimization and Master Plan (1997) and revised in the 2050 Napa Valley Water Resources Study (2005). Water demand projections through 2030 are shown in the table below.

**TABLE 4.13.3-6
CITY OF NAPA – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Year	Annual Demand
2010	17,370
2020	18,798
2030	19,746

Source: West Yost & Associates, 2005.

Water Treatment, Distribution and Storage Facilities

Napa provides treatment of raw water at three water treatment plants (WTP): Hennessey, Milliken, and Jameson Canyon. The Hennessey WTP was constructed in 1981 and has a treatment capacity of 20 MGD. The Milliken WTP was constructed in 1976 and has a treatment capacity of 4 MGD. The Jamieson Canyon WTP was constructed in 1986 and has a treatment capacity of 12 MGD. The City of Napa is currently designing an expansion of the Jamieson Canyon WTP to provide a maximum capacity of 24 MGD.

Napa’s distribution system receives and distributes potable water generated from its three water treatment plants: Hennessey, Milliken, and Jameson Canyon. The distribution system includes five pressure zones and is served by three clearwell tanks and 11 storage tanks. Pressure “Zone 3” serves as the City’s primary pressure zone and underlays the northwest, northeast, and south portion of its water service area. All three transmission lines (Conn, Milliken, and Jameson) gravity feed directly into Zone 3. “Zone 1” and “Zone 2” are located at lower elevations and

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receive water by “gravity” from Zone 3 via pressure regulating valves. Pressure Zones 4 and 5 are located at elevation above Zone 3 and water is “boosted” up to those areas by pump stations.

The City of Napa’s water system contains three major transmission pipeline; 1) the 36-inch diameter, 20 mile long Conn Pipeline that runs from Lake Hennessey south to Napa; 2) the Jamieson transmission pipeline that consists of a 42-inch diameter pipeline that runs north from the Jamieson Canyon WTP into town, splitting into 36-inch and 24-inch pipelines that run to the west and east side of town, respectively; and 3) the Milliken transmission pipeline, a 16-inch and 14-inch line is approximately three miles long and connects to the City’s distribution system near the intersection of Silverado Trail and Monticello Road

The City of Napa’s distribution systems includes 11 treated water storage tanks and 3 water treatment plant clearwells (tanks) with a total storage volume of over 33 million gallons.

TOWN OF YOUNTVILLE

Water Supply

Yountville’s water supply is drawn from two sources: SWP and Rector Reservoir. Historically, the Town’s primary water source is drawn from Rector Reservoir, which is operated and managed by the State of California’s Veterans Home in Yountville. The water supply is secured through an agreement with the State of California’s Department of Veterans Affairs, which administers operations at Rector Reservoir as well as the Rector Water Treatment Plant. The reservoir was formed following the construction of Rector Dam in 1946 and was subsequently raised in 1985, resulting in a total storage capacity of 4,600 acre-feet. The Town’s entitlement rights to Rector Reservoir, however, are lower priority than the water rights of the Veterans Home, Department of Fish and Game, and the Department of Mental Health (Napa State Hospital).

Yountville’s water supply drawn from the SWP is secured through a 1982 water supply agreement with NCFWCWD. The original agreement provided the Town with an annual entitlement of SWP water through 2035 and established a maximum annual entitlement of 500 acre-feet. However, the Town’s SWP entitlement was augmented in 2000 following a water transfer agreement between NCFWCWD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified the terms and conditions for NCFWCWD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Yountville’s share of the Kern County water transfer is 600 acre-feet. As a result, the Town’s cumulative maximum annual entitlement of SWP water is currently 1,100 acre-feet.

As in the case for the City of Calistoga, an important component in defining the source of Yountville’s water supply involves the Town’s 1982 agreement with the City of Napa to treat and convey its SWP entitlement. As part of the agreement, Yountville reimburses Napa for the costs associated with the treatment and conveyance of its SWP water in proportion to the amount of water delivered. Since Napa’s distribution system is comprised of three commingled water sources, Yountville’s SWP entitlement is essentially turned over to Napa in exchange for an equivalent amount of water drawn from one of Napa’s three sources: SWP, Lake Hennessey, and Milliken Reservoir. SWP deliveries to Yountville commenced in 1988.

**TABLE 4.13.3-7
TOWN OF YOUNTVILLE – WATER SUPPLY (ACRE FEET)**

Year	Rector Reservoir *	State Water Project **
2006	500	1,100
2007	500	1,100
2008	500	1,100
2009	500	1,100
2010	500	1,100

* Yountville has a water supply agreement with the California Department of Veterans Affairs entitling them to 500 acre-feet per year in most years, with reductions in critically dry years. (Need to verify length of agreement)

** Yountville’s SWP entitlements continue at 1,100 acre-feet per year through 2035.

Source: West Yost & Associates, 2005.

Water Demand

In the 2001-2002 fiscal year, Yountville delivered approximately 168.8 million gallons (518 acre-feet) of potable water, resulting in an approximate daily average of 462,466 gallons. The Town’s maximum day water demand was 733,000 gallons. Currently, the Town provides water service to approximately 714 connections. Of this amount, 32 connections are located outside of the Town near the intersection of Yountville Cross Road and the Silverado Trail.

**TABLE 4.13.3-8
TOWN OF YOUNTVILLE – WATER DEMAND (2001-2002)**

Demand	Amount
Annual Water Demand:	168.8 million gallons
Average Daily Water Demand:	462,466 gallons
Maximum Day Water Demand:	733,000 million gallons
Water Connections:	714
Population Served:	2,356

Source: West Yost & Associates, 2005.

Projected water demands for Yountville were identified in the Town’s *Water Supply Plan Update (2004)*. Water demand projections through 2030 are shown in the Table below.

**TABLE 4.13.3-9
TOWN OF YOUNTVILLE – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Year	Annual Demand
2010	679
2020	679
2030	679

Source: West Yost & Associates, 2005.

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Water Treatment, Distribution and Storage Facilities

Yountville does not own, lease, maintain, or operate water treatment facilities. Water delivered to the Town is treated by the City of Napa and the State of California's Veterans Home prior to entering the Town's distribution system.

Yountville's distribution system receives and delivers potable water generated from the supply of the State of California's Veterans Home and the City of Napa. The Town's distribution system is gravity fed and includes a single pressure zone. Since Yountville operates without treated water storage facilities, the distribution system is continually taking water from its interconnections with the Veterans Home or Napa.

CITY OF ST. HELENA

Water Supply

St. Helena's potable water supply is drawn from two sources: Bell Canyon Reservoir and two municipal wells collectively known as the "Stonebridge Wells." St. Helena is authorized to divert and store up to 3,800 acre-feet of water annually from Bell Creek for beneficial use. Bell Canyon Reservoir was formed following the construction of the Bell Canyon Dam in 1959 and has a maximum storage capacity of 2,350 acre-feet. The City's Urban Water Management Plan (2003) identified an annual safe yield for Bell Canyon Reservoir of 1,600 acre-feet based on annual runoff production during the 1986-1991 drought. In addition, the plan identified a safe yield for a critically dry year of 850 acre-feet based on annual runoff production during the 1976-1977 drought. Bell Canyon Reservoir is located northeast of St. Helena and is used as the primary water source throughout the year.

Water drawn from the Stonebridge Wells is used as a supplemental source to Bell Canyon Reservoir. The Stonebridge Wells consist of two adjacent wells developed in 1992 and 1996 and have current daily production capacities of .346 and .467 million gallons respectively.

In addition to its two potable water sources, St. Helena maintains a non-potable water source based on a pre-1914 appropriative water right to York Creek, a tributary of the Napa River. St. Helena's water right to York Creek enables it to divert and store up to 160 acre-feet of water annually at the City's Lower Reservoir. Lower Reservoir was formed following the construction of St. Helena Lower Dam in 1878 by the St. Helena Water Company, and through subsequent raises has a maximum storage capacity of approximately 225 acre-feet. Due to the cost associated with meeting increased federal and state water quality standards along with environmental considerations, St. Helena has not used water stored at the Lower Reservoir as part of its potable supply since 1980. Raw water drawn from the Lower Reservoir is currently used for landscape irrigation at the Robert Louis Stephenson Middle School and the Spring Mountain Winery.

**TABLE 4.13.3-10
CITY OF ST. HELENA – WATER SUPPLY (ACRE-FEET)**

Area	Amount
Bell Canyon Reservoir:	2,350
Stonebridge Well No. 1:	388*
Stonebridge Well No. 2:	523*
TOTAL:	3,261**

* Estimate based on current production capacity of 346,000 gallons per day for Well No.1 and 467,000 gallons per day for Well No. 2. St. Helena restricts its use of groundwater to no more than 20 percent of its total system demand under normal conditions and 30 percent during drought conditions.

** Total available water supply does not include storage capacity at the Lower Reservoir, which is currently used as an independent raw water source.

Source: West Yost & Associates, 2005.

Water Demand

In 2002, St. Helena delivered approximately 637.4 million gallons (1,956 acre-feet) of potable water, resulting in an approximate daily average of 1,746,467 gallons. The City's maximum day water demand was approximately 3.729 million gallons. The City currently provides water service to 2,458 connections. Of this amount, 355 water connections are located outside of the City.

**TABLE 4.13.3-11
CITY OF ST. HELENA – WATER DEMAND (2002)**

Demand	Amount
Annual Water Demand:	637.4 million gallons
Average Daily Water Demand:	1,746,467 gallons
Maximum Day Water Demand:	3.729 million gallons
Water Connections:	2,458
Population Served:	8,111

Source: West Yost & Associates, 2005.

Projected water demands for St. Helena were identified in its *Urban Water Management Plan (2003)* and refined in the *2050 Napa Valley Water Resources Study (2005)*. These demands were developed by calculating population projections identified in the City's *Water Master Plan – Water Demand Element Update (1999)* with current per capital water consumption rates for both inside and outside customers along with a fixed landscaping demand for its entire service area. Water demand projections through 2030 are shown in the table below.

**TABLE 4.13.3-12
CITY OF ST. HELENA – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Year	Annual Demand
2010	2,125
2020	2,179
2030	2,272

Source: West Yost & Associates, 2005.

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Water Treatment, Distribution and Storage Facilities

St. Helena provides treatment of raw water generated from Bell Canyon Reservoir at the Louis Stralla Water Treatment Plant (WTP). The Louis Stralla WTP was constructed in 1980 and receives raw water released from Bell Canyon Reservoir. Although the Louis Stralla WTP has a design daily treatment capacity of 4.3 million gallons, operating constraints associated with its differential pressure gauge limit its daily treatment capacity to 3.5 million gallons.

Raw water drawn from Stonebridge Well No. 1 and Stonebridge Well No. 2 is treated at the Stonebridge Water Treatment Facility (WTF). The Stonebridge WTF was constructed in 1992 and is comprised of a greensand filtering system to remove iron and manganese. Estimated daily treatment capacity when both wells are operating is 0.74 million gallons.

St. Helena's distribution system receives and distributes potable water generated from the Louis Stralla WTP and the Stonebridge WTF. The distribution system includes four pressure zones and is served by six treated water storage tanks. "Zone 1" serves as the City's primary pressure zone and includes almost the entire distribution system and approximately 2,369 service connections. Water is pumped up to higher pressure zones, which serve outlying residential and commercial areas.

St. Helena draws water from the Stonebridge WTF throughout the year to supplement production at the Louis Stralla WTP. Groundwater treated at the Stonebridge WTF enters the distribution system through a direct interconnection to Zone 1 near the crossing of Pope Street and the Napa River. St. Helena has six treated water storage reservoirs, with a total volume of approximately 4.3 million gallons.

CITY OF CALISTOGA

Water Supply

Calistoga's water supply is drawn from two sources: Kimball Reservoir and the SWP. Calistoga is authorized to divert and store up to 626 acre-feet of water annually from Kimball Creek for beneficial use. Kimball Reservoir was formed following the construction of the Kimball Canyon Dam in 1939. The dam was subsequently raised in 1948 and has a storage capacity of 409 acre-feet. The storage capacity of Kimball Reservoir, however, has been reduced to an estimated 291 acre-feet due to the gradual build up of sediment. Calistoga's Water Facilities Plan (2000) estimated that Kimball Reservoir produced yields during normal and below-normal years of 392 and 336 acre-feet respectively. Kimball Reservoir is located northeast of Calistoga and is used as the lead water source until storage levels within the reservoir fall below 30 million gallons.

The portion of Calistoga's water supply drawn from the SWP is secured through a 1982 agreement with NCFWCWD. The original agreement provided the City with an annual entitlement of SWP water through 2035, with a maximum annual entitlement of 500 acre-feet by 1990. In 1998, Calistoga's SWP entitlement was increased following a water transfer agreement with American Canyon. The agreement provides Calistoga with an additional 500 acre-feet of annual SWP entitlement made available in 25 acre-feet increments beginning in 2000 through 2019. The City's SWP entitlement was amended once again in 2000 following a water transfer agreement between NCFWCWD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified terms and conditions for NCFWCWD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Calistoga's share of the Kern County water transfer is 925 acre-feet. As a result, the City's cumulative maximum annual entitlement of SWP water is 1,925 acre-feet by 2019.

An important component in defining the source of Calistoga’s water supply derives from its 1982 agreement with the City of Napa to treat and convey its SWP entitlement. The agreement specified that Calistoga would reimburse Napa for the costs associated with the treatment and conveyance of SWP water in proportion to the amount of water delivered. Since Napa’s distribution system is comprised of three commingled water sources, Calistoga SWP entitlement is essentially turned over to Napa in exchange for an equivalent amount of water from one of Napa’s three sources: SWP, Lake Hennessey, and Milliken Reservoir. Significantly, the conveyance system used to transport potable water from the City’s interconnection with Napa (NBA Line) is limited to 0.9 million gallons per day: limiting deliveries to no more than 1,008 acre-feet per year.

**TABLE 4.13.3-13
CITY OF CALISTOGA – WATER SUPPLY (ACRE-FEET)**

Year	Kimball Reservoir *	State Water Project **
2003	392	1,525
2004	392	1,550
2005	392	1,575
2006	392	1,600
2007	392	1,625
2008	392	1,650

** Availability based on normal year yield conditions as of 2000. Also as of 2000, actual storage capacity for Kimball Reservoir is estimated at 291 acre-feet. Calistoga is required by DHS to dredge Kimball Reservoir by January 1, 2005. It is anticipated that this project will restore approximately 118 acre-feet of the reservoir’s original storage capacity (409 acre-feet).*

*** Calistoga’s SWP entitlements are scheduled to increase by 25 acre-feet per year through 2019 at which time the City shall reach its maximum entitlement of 1,925 acre-feet. Entitlements continue thereafter until 2035.*

Source: West Yost & Associates, 2005.

Water Demand

In 2001-2002, Calistoga delivered approximately 275 million gallons (843.65 acre-feet) of potable water, resulting in an approximate daily average of 753,425 gallons. The City’s maximum day water demand was 1.34 million gallons. Calistoga currently provides water service to approximately 1,440 connections. Of this amount, 72 connections are located outside of the City.

**TABLE 4.13.3-14
CITY OF CALISTOGA – WATER DEMAND (2001 – 2002)**

Demand	Amount
Annual Water Demand:	275 million gallons
Average Daily Water Demand:	753,425 gallons
Maximum Day Water Demand:	1.34 million gallons
Water Connections:	1,440
Population Served:	4,752

Source: West Yost & Associates, 2005.

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Projected water demands for Calistoga were identified in the *2050 Napa Valley Water Resources Study (2005)*. The study projected water demands for Calistoga through 2050 using a per capita demand of 169 gpcd per the City's *Water Facilities Plan (2000)* and adjusted using an annual growth rate of 1.35%.

**TABLE 4.13.3-15
CITY OF CALISTOGA – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Year	Annual Demand
2010	1,124
2020	1,285
2030	1,469

Source: West Yost & Associates, 2005.

Water Treatment, Distribution and Storage Facilities

Calistoga provides treatment of raw water generated from Kimball Reservoir at the Kimball Water Treatment Plant (WTP). Constructed in 1990, the Kimball WTP has a treatment capacity of 1.2 million gallons per day.

Calistoga's water distribution system receives and distributes treated water generated from Kimball WTP and the City of Napa. The City's distribution system consists of a network of two-through twelve-inch water lines that serve two pressure zones.

Water treated at the Kimball WTP is delivered to the City's distribution system by a transmission line that connects to the Feige Canyon Storage Tank. Water from the City of Napa is delivered to Calistoga through an interconnection near the crossing of Silverado Trail and Highway 128. Calistoga's connection to Napa's distribution system was completed in 1984 and is comprised of a 12.3 mile transmission line along the Silverado Trail and Deer Park Road. Calistoga has two treated water storage tanks that total 1.024 million gallons (not including a 100,000 gallon clearwell tank at the Kimball WTP).

CIRCLE OAKS COUNTY WATER DISTRICT

Water Supply

The Circle Oaks County Water District (COCWD) was established in 1962 to provide potable water and sewer services to a planned resort/residential community in Cappell Valley located in northeast Napa County. COCWD's water supply is generated from three wells and a spring source. The estimated supply available from each source is shown in the table below. Under normal conditions, the District draws water from its spring source during the summer and fall months while the wells are used primarily during the winter and spring months.

**TABLE 4.13.3-16
CIRCLE OAKS COUNTY WATER DISTRICT – WATER SUPPLY (ACRE-FEET)**

Source	Amount
Well No. 1:	116.14
Well No. 2:	22.06
Well No. 3:	10.30
Spring Source:	145.59
TOTAL	294.09

* These figures represent an estimate by COCWD using daily pump capacity rates for the affected wells and the maximum daily flow rate range for the spring source as of September 2001 (COCWD figures were multiplied by 365 to calculate annual availability). All four sources are subject to capacity constraints due to recharge requirements and hydrologic conditions.

Water Demand

In 2002, COCWD delivered approximately 17,189,200 gallons (53 acre-feet) of potable water, resulting in a daily average of 47,094 gallons. The District’s maximum water demand was 130,100 gallons. The District currently provides water service to 189 service connections.

**TABLE 4.13.3-17
CIRCLE OAKS COUNTY WATER DISTRICT – WATER DEMAND (2002)**

Demand	Amount
Annual Water Demand:	17,189,200 gallons (53 acre-feet)
Average Daily Water Demand:	47,094 gallons (0.14 acre-feet)
Maximum Day Water Demand:	130,100 (0.39 acre-feet)
Water Connections:	189
Population Served:	624

Projected water demands for COCWD were identified in its *Preliminary Engineering Report (2001)*. The report projected water demands for the District based on the number of lots served. Demands were determined by establishing a proportionate fixed daily water use factor for each developed lot based on current system demand through buildout.

**TABLE 4.13.3-18
CIRCLE OAKS COUNTY WATER DISTRICT – PROJECTED WATER DEMAND (ACRE-FEET) THROUGH 2030**

Lots Served	Average Day Demand*	Annual Demand
190	65,500 gallons	73.35
215	74,000 gallons	82.87
240	82,740 gallons	92.66
330	113,800 gallons	127.45

*Based on a daily water use factor of approximately 344 gallons per developed lot.

Water Treatment, Distribution and Storage Facilities

COCWD provides treatment of raw water generated from local groundwater and spring sources at the Circle Oaks Water Treatment Plant (WTP). Constructed in 1995, the Circle Oaks WTP filters and disinfects raw water prior to entering the District’s distribution system. The Circle Oaks WTP has a treatment capacity of approximately 97 gallons per minute, resulting in a daily treatment capacity of 140,000 gallons. A 100,000 gallon clearwell tank is also located at the WTP site.

The distribution system consists of a network of six, eight, ten, and twelve inch water lines. The distribution system includes two water pressure zones and is served by two storage tanks. Due to the topography of the service area, a pump station is required to lift treated water from Circle Oaks WTP’s 100,000 gallon clearwell tank into the primary pressure zone, “Zone One.” Zone One includes 108 service connections and is served by a 200,000 gallon storage tank. “Zone Two” includes 81 service connections and is served by a 50,000 gallon storage tank. A second pump station is required to lift potable water from Zone One to Zone Two.

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CONGRESS VALLEY WATER DISTRICT

Water Supply

Congress Valley Water District is supplied potable water from the City of Napa. Pursuant to its water supply agreement with Napa, the District is annually allocated 100 acre-feet of potable water through 2017. Napa's water supply is commingled between three sources: Lake Hennessey, Milliken Reservoir, and the State Water Project.

TABLE 4.13.3-19
CONGRESS VALLEY WATER DISTRICT – WATER SUPPLY (ACRE-FEET)

Source	Amount
City of Napa	100 (annual allocation)

Source: West Yost & Associates, 2005.

Water Demand

In 2002, the City of Napa delivered approximately 16,250,000 gallons (50 acre-feet) of potable water to CVWD, resulting in a daily average of 44,521 gallons. The District's maximum day water demand is unknown. The District currently provides water service to 74 connections. Of this amount, 72 connections are residential and 2 connections are agricultural.

TABLE 4.13.3-20
CONGRESS VALLEY WATER DISTRICT – WATER DEMAND (2002)

Demand	Amount
Annual Water Demand:	16,250,000 gallons
Average Water Demand:	44,521 gallons
Maximum Day Water Demand:	Not Available
Service Connections:	74
Population Served:	244

Source: West Yost & Associates, 2005.

Water Treatment, Distribution and Storage Facilities

CVWD does not own, lease, or operate treatment facilities. Water delivered to the District is treated by the City of Napa. CVWD's distribution system receives and delivers potable water generated from the City of Napa's distribution system. The District's system consists of eight to twelve inch water lines that are served by two connection points to Napa's water distribution system at Thompson Road and Stonebridge Drive/Sunset Road. The District is part of Napa's "Browns Valley – Zone No. 4." Water supply and pressure for this pressure zone is served by Napa's "B" Tank, which has a storage capacity of 1.0 million gallons.

LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT

Water Supply

The Lake Berryessa Resort Improvement District (LBRID) was established in 1965 to provide potable water and sewer services to a planned residential and recreational community along the northwestern shoreline of Lake Berryessa at Putah Creek.

LBRID’s water supply is drawn from Lake Berryessa. The District’s right to draw water from Lake Berryessa is secured through a 1999 agreement with NCFWCWD. NCFWCWD presently administers an agreement with the United States Department of the Interior, Bureau of Reclamation, for an annual water entitlement of 1,500 acre-feet from Lake Berryessa. In turn, NCFWCWD subcontracts this entitlement to several property owners in the Lake Berryessa area along with three special districts, including LBRID. As a subcontractor to NCFCWCD, the District is annually entitled to 200 acre-feet of water from Lake Berryessa through 2024.

**TABLE 4.13.3-21
LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT – WATER SUPPLY (ACRE-FEET)**

Source	Amount
Solano Project:	200 (annual entitlement) *

** Pursuant to its agreement with NCFCWCD, the District may request an increase to its annual entitlement of up to 20 percent, or 40 acre-feet. This annual entitlement continues through 2024.*

Water Demand

In 2001-2002, LBRID delivered approximately 23,464,800 gallons (72 acre-feet) of potable water, resulting in an approximate daily average of 64,287 gallons. The District’s maximum day water demand was approximately 140,000 gallons. LBRID currently provides water service to 171 service connections.

**TABLE 4.13.3-22
LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT – WATER DEMAND (2001 – 2002)**

Demand	Amount
Annual Water Demand:	23,464,800 gallons
Average Daily Water Demand:	64,287 gallons
Maximum Day Water Demand:	140,000 gallons
Service Connections:	171
Population Served:	564

** Projected water demands for LBRID are not available.*

Water Treatment, Distribution and Storage Facilities

LBRID provides treatment of raw water generated from Lake Berryessa at the Lake Berryessa Water Treatment Plant (WTP). Constructed in 1967, the Lake Berryessa WTP has a treatment capacity of 174 gallons per minute, resulting in a daily capacity of 250,000 gallons.

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The distribution system consists of a network of six, eight, ten, and twelve inch water lines that provide service to Unit Two of the Lake Berryessa Estates subdivision. The distribution system includes three water pressure zones and is served by three storage tanks. Due to the service area's topography, a pump station is required to lift treated water from Lake Berryessa WTP's 10,000 gallon clearwell tank into the distribution system.

**TABLE 4.13.3-23
LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT – DISTRIBUTION AND STORAGE CAPACITY**

	Amount
Storage Tank 1:	200,000 gallons
Storage Tank 2:	100,000 gallons
Storage Tank 3:	100,000 gallons
TOTAL:	400,000 gallons*

* Total does not include storage capacity at Lake Berryessa WTP's clearwell tank (10,000 gallons).

NAPA BERRYESSA RESORT IMPROVEMENT DISTRICT

Water Supply

The Napa-Berryessa Resort Improvement District (NBRID) was established in 1965 to provide potable water and sewer services to the Steele Park Resort and a planned recreational and residential development along the southern shoreline of Lake Berryessa.

NBRID's water supply is drawn from Lake Berryessa. The District's right to draw water from Lake Berryessa is secured through a 1999 agreement with NCFWCWD. NCFWCWD presently administers an agreement with the United States Department of the Interior, Bureau of Reclamation, for an annual water entitlement of 1,500 acre-feet from Lake Berryessa. In turn, NCFWCWD subcontracts this entitlement to several property owners in the Lake Berryessa area along with three special districts, including NBRID. As a subcontractor to NCFWCWD, the District is annually entitled to 200 acre-feet of water from Lake Berryessa through 2024.

**TABLE 4.13.3-24
NAPA – BERRYESSA RESORT IMPROVEMENT DISTRICT – WATER SUPPLY (ACRE-FEET)**

Source	Amount
Solano Project:	200 (annual entitlement) *

*Pursuant to its agreement with NCFWCWD, the District may request an increase to its annual entitlement of up to 20 percent, or 40 acre-feet. This annual entitlement continues through 2024.

Water Demand

In 2001-2002, NBRID delivered approximately 56,380,700 gallons (173 acre-feet) of potable water, resulting in a daily average of 154,468 gallons. The District's maximum day water demand was 392,000 gallons. The District currently provides water service to 314 service connections. Of this amount, one service connection serves the Steele Park Resort, while three service connections serve single-family residences located outside the Berryessa Highlands subdivision. One of these residential service connections serves a total of eight parcels.

TABLE 4.13.3-25
NAPA – BERRYESSA RESORT IMPROVEMENT DISTRICT – WATER DEMAND (2001 – 2002)

Demand	Amount
Annual Water Demand:	56,380,700 gallons
Average Daily Water Demand:	154,468 gallons
Maximum Day Demand:	392,000 gallons
Service Connections:	314
Population Served:	1,534

**Projected water demands for NBRID are not available.*

Water Treatment, Distribution and Storage Facilities

NBRID provides treatment of raw water generated from Lake Berryessa at the Napa-Berryessa Water Treatment Plant (WTP). Constructed in 1968, the Napa-Berryessa WTP has a treatment capacity of approximately 425 gallons per minute, resulting in a daily treatment capacity of 612,000 gallons.

TABLE 4.13.3-26
NAPA – BERRYESSA RESORT IMPROVEMENT DISTRICT – TREATMENT AND STORAGE CAPACITY

Water Source:	Solano Project (Lake Berryessa)
Treatment Capacity:	425 gallons per minute; or 612,000 gallons per day
Clearwell Tank Capacity:	35,000 gallons

The distribution system consists of a network of six, eight, ten, and twelve inch water lines. The distribution system provides water service Unit One and Unit Two of the Berryessa Highlands, Steele Park Resort, and three single-family residences located outside the subdivision. The distribution system includes six water pressure zones and is served by a 500,000 gallon storage tank.

SPANISH FLAT WATER DISTRICT

Water Supply

The Spanish Flat Water District (SFWD) was established in 1963 to provide potable water and sewer services to the "Spanish Flat" area along the western shoreline of Lake Berryessa. In 1977, SFWD annexed a non-contiguous residential subdivision north of the Spanish Flat service area known as "Berryessa Pines."

SFWD's water supply is drawn from Lake Berryessa. The District's right to draw water from Lake Berryessa is secured through a 1999 agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). NCFCWCD presently administers an agreement with the United States Department of the Interior, Bureau of Reclamation, for an annual water entitlement of 1,500 acre-feet from Lake Berryessa. In turn, NCFCWCD subcontracts this entitlement to several property owners in the Lake Berryessa area along with three special

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districts, including SFWD. As a subcontractor to NCFCWD, the District is annually entitled to 200 acre-feet of water from Lake Berryessa through 2024. This entitlement serves the District's two service areas: Spanish Flat and Berryessa Pines.

TABLE 4.13.3-27
SPANISH FLAT WATER DISTRICT – WATER SUPPLY (ACRE-FEET)

Source	Amount
Solano Project:	200 (annual entitlement) *

* Pursuant to its agreement with NCFCWCD, the District may request an increase to its annual entitlement of up to 20 percent, or 40 acre-feet. This annual entitlement continues through 2024.

Water Demand

Spanish Flat Area

In 2002, SFWD delivered approximately 32,400,000 gallons (99 acre-feet) of potable water to the Spanish Flat service area. This amount results in an approximate daily average of 88,767 gallons. The service area's maximum day water demand was approximately 179,000 gallons. The District currently provides water service to 46 service connections in the Spanish Flat service area.

TABLE 4.13.3-28
SPANISH FLAT AREA – WATER DEMAND (2002)

Demand	Amount
Annual Water Demand:	32,400,000 gallons
Average Water Demand:	88,767 gallons
Maximum Day Water Demand:	179,000 gallons
Water Connections:	46
Population Served:	871

* Projected water demands for the Spanish Flat service area are not available.

Berryessa Pines Area

In 2002, SFWD delivered approximately 10,800,000 gallons (33 acre-feet) of potable water to the Berryessa Pines' service area. This amount results in a daily average of 29,589 gallons. The service area's maximum day water demand was 97,000 gallons. The District currently provides water service to 73 service connections in the Berryessa Pines' service area.

TABLE 4.13.3-29
BERRYESSA PINES AREA – WATER DEMAND (2002)

Demand	Amount
Annual Water Demand:	10,800,000 gallons
Average Water Demand:	29,589 gallons
Maximum Day Water Demand:	97,000 gallons
Water Connections:	73
Population Served:	241

* Projected water demands for the Berryessa Pines service area are not available.

Water Treatment, Distribution and Storage Facilities

Spanish Flat Area

SFWD provides treatment of raw water generated from Lake Berryessa for the Spanish Flat service area at the Spanish Flat Water Treatment Plant (WTP). The Spanish Flat WTP has a rated treatment capacity of 152 gallons per minute. However, the District estimates that the actual treatment capacity of the Spanish Flat WTP is approximately 100 gallons per minute, resulting in a daily treatment capacity of 144,000 gallons.

**TABLE 4.13.3-30
SPANISH FLAT TREATMENT AND STORAGE CAPACITY**

Water Source:	Solano Project (Lake Berryessa)
Treatment Capacity:	100 gallons per minute; or 144,000 gallons per day
Clearwell Tank Capacity:	5,234 gallons *

**Estimate includes storage capacity of transmission line.*

The distribution system includes a network of six and eight inch water lines. The distribution system includes three water pressure zones and is served by six storage tanks. Due to the service area's topography, a pump station is required to lift potable water from the Spanish Flat WTP's clearwell tank into the distribution system. A summary of the storage tanks is included below.

**TABLE 4.13.3-31
SPANISH FLAT DISTRIBUTION STORAGE CAPACITY**

	Amount
Storage Tank 1:	24,000 gallons
Storage Tank 2:	24,000 gallons
Storage Tank 3:	24,000 gallons
Storage Tank 4:	12,000 gallons
Storage Tank 5:	24,000 gallons
Storage Tank 6:	24,000 gallons
TOTAL	132,000 gallons*

** Total does not include storage capacity at the Spanish Flat WTP's clearwell tank.*

Berryessa Pines Area

SFWD provides treatment of raw water generated from Lake Berryessa for the Berryessa Pines service area at the Berryessa Pines Water Treatment Plant (WTP). The Berryessa Pines WTP typically runs at 100 gallons per minute during the summer months to meet system demands. Actual rated treatment capacity is not available.

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**TABLE 4.13.3-32
BERRYESSA PINES AREA TREATMENT AND STORAGE CAPACITY**

Water Source:	Solano Project (Lake Berryessa)
Treatment Capacity:	100 gallons per minute; or 144,000 gallons per day
Clearwell Tank Capacity:	1,778 gallons

The distribution system includes a network of six, eight, ten, and twelve inch water lines. The Berryessa Pines service area includes the Berryessa Pines subdivision. The distribution system includes one water pressure zone and is served by a 100,000 storage tank.

PLANNED IMPROVEMENTS BY PUBLIC WATER SERVICE PROVIDERS

Table 4.13.3-33 provides an overview of planned water improvements by public water service providers.

**TABLE 4.13.3-33
NAPA COUNTY PUBLIC WATER SUPPLY PROVIDERS AND PLANNED IMPROVEMENTS**

Public Provider	Planned or Programmed Improvements
City of Napa	Currently in easement negotiations to construct a 5.0 million gallon treated water storage tank near the Napa State Hospital to increase treated water storage capacity to 33.1 million gallons
City of American Canyon	Currently constructing storage tanks to increase capacity of 9.1 million gallons. Also negotiating a long-term water supply agreement with the City of St. Helena to purchase an additional 1,000 af of entitlement from the State Water Project and undertaking a new study of water and sewer capacity.
Circle Oaks County Water District	Pursuing financing options to replace the deteriorating 50,000 gallon storage tank with a new 200,000 gallon tank.
Lake Berryessa Resort Improvement District	Currently undertaking several deferred maintenance projects, including water line replacements. Improvements to WTP scheduled to increase chlorine contact time with treated water to comply with DHS water quality standards.
Napa-Berryessa Resort Improvement District	Improvements to the District's water treatment and implementing a system-wide energy efficiency review to reduce the District's energy costs.
Spanish Flat Water District	In the finishing phases of constructing two new water storage tanks to increase treated water capacity.
City of Calistoga	Planning to construct an additional storage tank near the Siverado Trail on Mt. Washington and a new pipeline from to tie into the existing distribution system.
City of St. Helena	In the early planning phase of a recycled water project. Other improvements include, dredging Ball Canyon Reservoir to increase its capacity, replacing or extending 22 main water lines, various Diversion Dam modifications, removing York Creek Dam, upgrading the Meadow wood/Holmes storage tank, upgrading the Napa-Connection to the pump, upgrading the existing WTP and constructing a new well field.

Source: Napa County Public Works 2006.

PRIVATE WATER SUPPLY PURVEYORS

The private water purveyors include: Cannon Park Water Company, Howell Mountain Mutual Water Company, La Tierra Heights Mutual Water Company, Linda Falls Terrace Mutual Water Company, Linda Vista Mutual Water Company, Mapes Heights Mutual Water Company, Meyers Water Company, Milton Road Water Company, Rutherford Hill Mutual Water Company, Tucker Acres Mutual Water Company, Vaillima Estates Mutual Water Company, and the Woodland Ridge Mutual Water Company. The Meyers Water Company is the sole private provider regulated by the California Public Utilities Commission; however, all other private providers are subject to water standards established by the California Department of Health Services (DHS) and the Napa County Department of Environmental Management. **Table 4.13.3-34** describes the service area and distribution system for each private water purveyor in the County. In addition to these providers, Pacific Union College in the unincorporated community of Angwin operate a water supply and distribution system for the college site and associated college housing. This system is supplied by groundwater.

**TABLE 4.13.3-34
PRIVATE WATER SUPPLY PROVIDERS**

Private Providers	Service Area	Distribution System
Cannon Park Water Company	Provides potable water service to approx. eight residential connections located in the vicinity of Cannon Park Drive’s intersection with Deer Park Road, east of St. Helena.	The distribution system is served by a local well.
Howell Mountain Mutual Water Company	Provides potable water service to approx. 386 residential connections throughout the communities of Angwin and Deer Park, east of St. Helena.	The distribution system is served by the “Friesen Lakes,” a network of nine man-made reservoirs located in the Conn Creek Watershed.
La Tierra Heights Mutual Water Company	Provides potable water service to approx. 19 residential connections in the “La Tierra Subdivision” located in the vicinity of Sunset Drive and La Tierra Drive’s intersection with Howell Mountain Road, east of St. Helena.	The distribution system is served by a local well.
Linda Falls Terrace Mutual Water Company	Provides potable water service to approx. 14 residential connections in the “Linda Falls Terrace Subdivision” located in the vicinity of Linda Falls Terrace Drive’s intersection with Howell Mountain Road, east of St. Helena.	The distribution system is served by two local wells.
Linda Vista Mutual Water Company	Provides potable water service to approx. 30 residential connections located in the vicinity of Crestmont Drive’s intersection with Deer Park Road, east of St. Helena.	The distribution system is served by two local wells.
Mapes Heights Mutual Water Company	Provides potable water service to approx. 8 residential connections located along Kortum Canyon Road, west of Calistoga.	The system is served by a local well.
Meyers Water Company	Provides potable water service to approx. 92 residential connections in the “Edgerly Island Subdivision” located along Milton Road, south of City of Napa. Service area includes the southern portion of the Napa River Reclamation District No. 2109.	The distribution system is served by a local well.
Milton Road Water Company	Provides potable water service to approx. 24 residential connections located along Milton Road, south of the City of Napa. Service area includes northern portion of the Napa River Reclamation District No. 2109.	The distribution system is served by a local well.

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Private Providers	Service Area	Distribution System
Rutherford Hill Mutual Water Company	Provides potable water service to approx. 4 residential connections and the Auberge Du Soleil Resort and Restaurant located in the vicinity of Rutherford Hill Road's intersection with Silverado Trail, south of St. Helena.	The distribution system is served by two local wells.
Tucker Acres Mutual Water Company	Provides potable water service to approx. 39 residential connections located in the vicinity of Tucker Road's intersection with Hwy 29, south of Calistoga.	The distribution system is served by a local well.
Vailima Estates Mutual Water Company	Provides potable water service to approx. 14 residential connections located in the vicinity of Bournemouth Road's intersection with Silverado Trail, north of St. Helena.	The distribution system is served by two local wells.
Woodland Ridge Mutual Water Company	Provides potable water service to approx. 9 residential connections located along Howell Mountain Road, east of St. Helena.	The distribution system is served by two local wells.

Source: LAFCO 2003c.

4.13.3.2 REGULATORY FRAMEWORK

STATE

Senate Bill (SB) 610 and Assembly Bill (AB) 901

During the 2001 regular session of the State Legislature, SB 610 and AB 910 – Water Supply Planning, were signed and became effective January 1, 2002. SB 610 amends Public Resources Code section 21151.9, requiring any EIR, negative declaration, or mitigated negative declaration for a qualifying project to include consultation with affected water supply agencies (current law applied only to NOPs). SB 610 also amends the following: Water Code 10656 and 10657 to restrict state funding for agencies that fail to submit their urban water management plan to the Department of Water Resources; and Water Code section 10910 to describe the water supply assessment that must be undertaken for projects referred under PRC Section 21151.9, including an analysis of groundwater supplies. Water agencies would be given 90 days from the start of consultation in which to provide a water supply assessment to the CEQA lead agency; Water Code section 10910 would also specify the circumstances under which a project for which a water supply assessment was once prepared would be required to obtain another assessment. AB 901 amends Water Code section 10631, expanding the contents of the urban water management plans to include further information on future water supply projects and programs and groundwater supplies.

Senate Bill (SB) 221

SB 221 adds Government Code section 66455.3, requiring that the local water agency be sent a copy of any proposed residential subdivision of more than 500 dwelling units within 5 days of the subdivision application being accepted as complete for processing by the city or county. It adds Government Code section 66473.7, establishing detailed requirements for determining whether a "sufficient water supply" exists to support any proposed residential subdivisions of more than 500 dwellings, including any such subdivision involving a development agreement. When approving a qualifying subdivision tentative map, the city or county must include a condition requiring a sufficient water supply to be available. Proof of availability must be requested of and provided by the applicable public water system. If there is no public water

system, the city or county must undertake the analysis described in section 66473.7. The analysis must include consideration of effects on other users of water and groundwater.

LOCAL

Napa County Flood and Water Conservation District

Established in 1951, the Napa County Flood Control and Water Conservation District (NCFCWCD) was formed by a special act of the California Legislature to provide a wide range of municipal services for the residents of Napa County. In particular, the District was formed to facilitate the procurement of domestic water supplies and provide for the control of flood and storm waters within the County. The District's formation provided the mechanism allowing the County to participate in government programs to preserve and enhance local water supplies and obtain federal and state assistance to finance flood control projects. The focus of this study is the District's water conservation services (water supply).

In 1963, NCFCWCD's water conservation services were initiated following an agreement with the California Department of Water Resources (DWR). The agreement was amended in 2000 and provides the District with an annual entitlement of water drawn from the State Water Project (SWP). The District's entitlements are gradually increased each year until its maximum annual entitlement of 29,025 acre-feet is reached in 2021; entitlements continue thereafter until 2035 when all SWP contracts are due to expire. In exchange for an annual entitlement, the District is responsible for repayment of costs for the construction, maintenance, and operation of SWP facilities. Notably, along with the Solano County Water Agency (SCWA), the District is responsible for the costs associated with the construction and operation of the North Bay Aqueduct (NBA), which facilitates delivery of SWP entitlements to Napa and Solano Counties.

The construction of the NBA was completed in two phases: the "Napa Phase" and the "Solano Phase." The Napa Phase was completed in 1968 and involved the construction of temporary and permanent facilities in Napa and Solano Counties. This phase included a temporary transmission line connecting a SWP pumping plant in Cordelia (Solano County) with the Putah South Canal. This temporary transmission line enabled the District to begin receiving non-project water drawn from Lake Berryessa as part of the federal government's Solano Project. The District's access to the Solano Project was secured through an interim agreement with the Solano County Flood Control and Water Conservation District (predecessor to SCWA). In 1988, the Solano Phase of the NBA was completed, resulting in a 27-mile transmission line connecting Napa County to the Sacramento-San Joaquin Delta. Project water delivered to the District is stored at the Napa Turnout Reservoir in Jameson Canyon.

NCFCWCD's agreement with DWR enables the District to subcontract its annual entitlement with local agencies. Significantly, this feature allows the cost of SWP water to be passed directly to the subcontractors. Between 1966 and 1982, the District reached subcontracting agreements with the Cities of Calistoga and Napa, Town of Yountville, and the American Canyon County Water District (predecessor to the City of American Canyon). These agreements provide each subcontractor with an annual share of the District's SWP entitlement through 2035. In exchange, each subcontractor contributes to the cost associated with the purchase and delivery of SWP water in proportion to the amount of entitlement. Collectively, the District's SWP subcontractors are referred to as "member units." Payments to DWR for SWP entitlements are facilitated through two fees: a transportation charge and a water charge. The transportation charge is based on a proportionate share of the capital and operating cost associated with the infrastructure and facilities needed to capture and convey water to Napa County. The water

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charge is based on each acre-foot delivered. Both fees are reviewed on an annual basis by DWR and are calculated to recapture all project costs by 2035.

In addition to its agreement with DWR, NCFCWCD maintains a water supply agreement with the United States Department of the Interior, Bureau of Reclamation, for an annual entitlement of water drawn from the Solano Project. Renewed in 1999, this agreement provides the District with an annual allocation of 1,500 acre-feet of water from Lake Berryessa through 2024. The District subcontracts this entitlement to several individual property owners in the Lake Berryessa area, as well as to three special districts: Lake Berryessa Resort Improvement District (LBRID), Napa-Berryessa Resort Improvement District (NBRID), and Spanish Flat Water District. Each subcontractor is responsible for the construction and operation of their own intake and delivery system to Lake Berryessa.

NCFCWCD does not provide water service to its subcontractors. The District administers the availability of water supplies through agreements with DWR and the Bureau of Reclamation. Estimates for water demand are determined by each individual subcontractor. NCFCWCD does not own, lease, or operate water treatment, distribution or storage facilities.

Napa County Code Provisions Associated with Water Supply

The following is a summary of key County Code provisions associated with water supply systems.

Approved Water Supply Systems (County Code Chapter 13.04)

This provision of the County Code regulates water supply systems associated with public utilities, public water systems and individual water systems and defines “sustained yield” as the ability of a well facility to provide a sustained water supply of one gallon per minute per dwelling unit at a stable drawdown level (County Code Section 13.04.040 and 13.04.050).

Local Public Water Systems (County Code Chapter 13.08)

County Code Chapter 13.08 requires public water systems to submit plans and specifications on the design and operation of water supply systems in compliance with state regulations. In addition, these provisions include the ability for the County to enforce the proper operation and maintenance of public water systems.

Wells (County Code Chapter 13.12)

This chapter of the County Code regulates the design, construction and operation of various well types in the County and requires the approval of a permit for the operation of wells.

Napa County Groundwater Ordinance (County Code Chapter 13.15)

The Napa County Board of Supervisors adopted a groundwater ordinance in 1996 (County Code Chapter 13.15), revised in 2003, to regulate the extraction, use, and preservation of the County’s groundwater resources. Compliance with this ordinance applies to development of new water systems or improvements to an existing water system that may use groundwater. Specifically, the ordinance applies to agricultural land development or re-development activities located on parcels within areas including the Milliken-Sarco-Tulocay (MST), Pope Valley, Chiles Valley, Capell Valley, and Carneros groundwater basins. The ordinance identifies issuance of groundwater permits based on three types of applications exempt, ministerial, and required and the process by which compliance with the ordinance is determined. Applications

for a groundwater permit require identification of existing and future uses of any existing water system which is supplied by groundwater, potential alternative water sources, the number of existing and future connections, intent of groundwater use, and an assessment of the potential impacts to the affected groundwater basin. Because groundwater resources are highly valued in the County, further guidance for activities conducted within the MST groundwater deficient area have been developed, as detailed below.

Guidelines for Projects within the Milliken-Sarco-Tulocay Groundwater Deficient Area

The Milliken-Sarco-Tulocay area is a groundwater deficient area. Due to the sensitive nature of the MST groundwater basin, the County requires special consultation to determine the need for a groundwater permit. This particularly applies to construction projects, erosion control plans for new or expanded agricultural projects, and new or expanded wineries that intend to use groundwater from the MST basin. Depending on the governing authority (either the Environmental Management or Conservation Development and Planning Department), the appropriate department will determine which of the following three situations is applicable to the proposed project and its potential effect on the MST groundwater basin.

No groundwater permit is required. A groundwater permit would not be required if agricultural land development is less than or equal to a 0.25 acre, for additions or alterations to existing dwellings, or for swimming pools that are not filled with water from the MST.

A ministerial groundwater permit is required. Ministerial groundwater permits for new residential units and agricultural land re-development require compliance with water use conditions. For new residential units, the total amount of water used on the parcel must be less than 0.6 acre-feet per year (ac-ft/yr). Re-development of agricultural land must limit the total water use on the parcel to an average of 0.3 acre feet per acre per year calculated as an average over a three-year period, with no yearly use exceeding the total average by more than 15 percent. All water use must be reported to the Department of Public Works under both types of development where a ministerial groundwater permit is issued.

A groundwater permit is required. Groundwater permits are issued upon compliance with the “no net increase” and “fair share” standards. The “no net increase” standard encourages applicants to reduce their impact on the MST by giving up an existing groundwater use, changing practices to reduce consumption, or by importing water from outside the MST (only applies for agricultural activities). If the additional water required by the proposed use would not meet the “no net increase” standard, the Planning Department or applicant must conduct a California Environmental Quality Act (CEQA) review to assess the potential environmental impacts of the proposed use. Additionally, the proposed use must comply with the “fair share” standard that no more than 0.3 acre-feet (ac-ft) of groundwater per acre of land owned are used.

4.13.3.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following significance thresholds are based on Appendix G from the State CEQA Guidelines and apply to the proposed project’s water supply system. A project is considered to have a significant water supply impact on the environment when it would:

- 1) Result in a substantial depletion of groundwater supplies or substantial interference with groundwater recharge such that there would be a net deficit in aquifer volume or a

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lowering of the local groundwater table level. Depletion of groundwater would be considered substantial if resulted in a net increase in groundwater usage in the Milliken-Sarco-Tulocay groundwater basin or result in groundwater extraction that would exceed the amount of groundwater in storage over the long term (normal, dry and multiple dry years). (The reader is referred to Section 4.11, Hydrology and Water Quality, for further discussion of associated hydrologic impacts and Section 4.6, Fisheries, regarding the consideration of flow impacts on fisheries.)

- 2) Result in the need for new water supplies or entitlements, or result in the need for new or expanded local or regional water treatment or distribution facilities that would result in a physical impact to the environment.

METHODOLOGY

Preparation of this water supply evaluation is based on consultation with various water purveyors, Napa County Department of Water Resources staff, the existing Napa County General Plan, the 2050 Napa Valley Water Resources Study (see **Appendix J**) and hydrologic modeling associated with the various new vineyard development scenarios evaluated under Section 4.11 (Hydrology and Water Quality) (see **Appendix H**). The following impact analysis is focused on municipal water supplies and infrastructure issues associated with water supply delivery. The reader is also referred to the impact analysis under Section 4.11, Hydrology and Water Quality regarding the environmental effects related to drainage and ground water supplies.

As noted in Section 4.0, unincorporated land uses that would be subject to the proposed General Plan Update (under all alternatives) are not expected to reach full build out by the year 2030 and that the DEIR utilizes growth projections for residential, commercial, industrial and vineyard development anticipated by the year 2030. The following impact analysis is based on anticipated water supply demands for growth under each alternative by the year 2030 as well as overall water supply demands projected for the year 2020 and 2050 for incorporated and unincorporated growth in Napa Valley based on the 2050 Napa Valley Water Resources Study. The DEIR utilizes water supply demands factors from this report to estimate water demands by alternative.

IMPACTS AND MITIGATION MEASURES

Water Supply Impacts

- Impact 4.13.3.1** Land uses and development under the proposed General Plan Update would increase the demand for additional sources of potable and irrigation water as well as additional or expanded treatment and distribution facilities to meet projected demands at year 2030 and at year 2050. (Significant and Unavoidable – All Alternatives)

The 2050 Napa Valley Water Resources Study evaluated available water supplies versus current and projected demands under three different supply scenarios: normal year, multiple dry year and single (critically) dry year for the unincorporated portion of the County and the cities within the Napa Valley. **Table 4.13.3-35** provides a summary of projected water supplies for the years 2020 and 2050 for the Main Basin for the unincorporated area of the County. The water source identified in **Table 4.13.3-35** consists primarily of groundwater, but does include surface water and recycled water (see **Appendix J**, Technical Memo No. 6). **Table 4.13.3-36** and **-37** shows water demands versus water supply for the unincorporated area as well as incorporated (cities)

and unincorporated demands for years 2020 and 2050 (Table 4.13.3-37 includes water supplies associated with the cities identified in Appendix J, Technical Memorandum No. 4). Because of uncertainty in the groundwater capacity of the MST and Carneros basins, the Main Basin unincorporated demands were combined with the incorporated demands (also in the Main Basin) to generate overall comparison of Main Basin supplies and demands. Water demands include urban and rural land uses, wineries, vineyards and other crops projected for years 2020 and 2050 (see Appendix J).

**TABLE 4.13.3-35
SUMMARY OF PROJECTED UNINCORPORATED AREA MAIN BASIN WATER SUPPLIES**

Water Supply Year	Yield Condition	2020	2050
Wet	Maximum Yield ¹ (in acre-feet annually)	36,972	37,400
Normal	Average Yield ² (in acre-feet annually)	35,076	35,504
Multiple-Dry Year	Reliable Yield ³ (in acre-feet annually)	32,232	32,660
Single Dry Year	Perennial Yield ⁴ (in acre-feet annually)	30,652	31,080

¹ Maximum Yield – Total water supplies in a wet year with a zero percent exceedence probability.

² Average Yield – Water that would be available in a normal year with a 60 percent exceedence probability.

³ Reliable Yield – Water that would be available in a multiple-dry year with an 85 percent exceedence probability.

⁴ Perennial Yield – Water that would be available in a single-dry year with a 100 percent exceedence probability.

Source: 2050 Napa Valley Water Resources Study. West Yost and Associates, October 2005.

**TABLE 4.13.3-36
COMPARISON OF PROJECTED UNINCORPORATED AREA MAIN BASIN WATER SUPPLY AND DEMAND**

Water Supply Year	Estimated Water Supply (in acre-feet annually)	Estimated Demand (in acre-feet annually)	Excess Supply or (Shortfall) (in acre-feet annually)
Year 2020			
Normal	35,076	36,416	(1,340)
Multiple-Dry Year	32,232	36,416	(4,184)
Single Dry Year	30,652	36,416	(5,764)
Year 2050			
Normal	35,504	41,148	(5,644)
Multiple-Dry Year	32,660	41,148	(8,488)
Single Dry Year	31,080	41,148	(10,068)

Source: 2050 Napa Valley Water Resources Study. West Yost and Associates, October 2005.

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**TABLE 4.13.3-37
COMPARISON OF COMBINED INCORPORATED AND UNINCORPORATED AREA MAIN BASIN WATER SUPPLY AND DEMAND**

Water Supply Year	Estimated Water Supply (in acre-feet annually)	Estimated Demand (in acre-feet annually)	Excess Supply or (Shortfall) (in acre-feet annually)
Year 2020			
Normal	79,462	65,816	13,646
Multiple-Dry Year	60,349	61,406	(1,057)
Single Dry Year	51,721	61,406	(9,685)
Year 2050			
Normal	80,022	74,988	5,034
Multiple-Dry Year	60,865	69,912	(9,047)
Single Dry Year	52,240	69,912	(17,672)

Source: 2050 Napa Valley Water Resources Study. West Yost and Associates, October 2005.

In addition to these demands, future growth under the General Plan Update would increase demands in other portions of the County outside of the Napa Valley. This would include growth in the unincorporated community of Angwin and other rural communities outside of the Napa Valley as well as growth in the agricultural areas of the County (e.g., interior valleys such as Pope Valley). Based on the new vineyard development scenarios utilized in the hydrologic modeling conducted for the General Plan Update (see **Appendix H**), there could be approximately 8,896 acres of new vineyard development outside of the study area (Main Basin) of the 2050 Napa Valley Water Resources Study, which could generate a water demand of 9,875 acre-feet annually (using a water demand of 1.11 acre-feet per acre based on Table 6 of Technical Memorandum No. 3 of the 2050 Napa Valley Water Resources Study).

As shown in the above tables, future growth projected in the Napa Valley is anticipated to exceed current and projected water supply sources under year 2020 and 2050 and would further exacerbate groundwater conditions for MST and Carneros basins. In addition, the cities of American Canyon, St. Helena and Calistoga (some which currently provide or may provide in the future water supply to adjoining unincorporated areas) are projected to experience water treatment plant production deficiencies during maximum day demands for years 2020 and 2050 (see Table 4 of Technical Memorandum No. 7 of the 2050 Napa Valley Water Resources Study [**Appendix J**]).

The cities within the County are currently considering several measures to improve future water supply conditions, which are summarized below (the reader is referred to pages 11 through 14 Technical Memorandum No. 7 of the 2050 Napa Valley Water Resources Study [**Appendix J**]):

- Water treatment plant improvements to maximize use of existing water sources.
- Obtain agreements for reliable dry water supplies to be imported by the North Bay Aqueduct.
- Purchase additional State Water Project entitlements for additional water.

- Initiate conjunctive use programs by storing excess water in the ground and/or balancing of the use of surface water and groundwater during wet years (surface water use only) and dry years (use of groundwater).
- Continued work to further expand the use of recycled water (currently projected to be able to generate 4,000 to 5,000 acre-feet annually based on Technical Memorandum No. 4 of the 2050 Napa Valley Water Resources Study [**Appendix J**]). This option is also being pursued by the County and Napa Sanitation District to address groundwater supply issues in the MST and Carneros basins.
- Maximize use of existing reservoirs in the County.
- Improvements to existing water distribution systems to reduce water system loss.
- Continued implementation of water conservation best management practices (BMPs).

In addition to these local projects, the local jurisdictions are considering a regional project that would involve maximizing the use of the North Bay Aqueduct for the purposes of acquiring imported dry year water supplies likely from water rights holders in the Sacramento Valley (referred to as "Fill the Pipe"). This additional dry water supply would only be available to existing State Water Project contractors (cities of Napa, American Canyon, Calistoga and the Town of Yountville). The project would require the acquisition of up to 7,604 acre-feet of dry year water supplies for a single dry year and up to 559 acre-feet per year of dry year supplies for up to six years (totaling approximately 3,354 acre-feet). While this project would assist the cities, it would not provide water for the County. As noted above, County efforts to improve water supplies in Napa Valley (Main, MST and Carneros basins) consist of expanding recycled water use.

The possible environmental effects of these water supply improvement project are summarized in **Table 4.13.3-38**. However, it should be noted that only the water supply improvement project currently under consideration by the County (use of recycled water to the MST and Carneros basins under General Plan Update Alternatives B and C) is programmatically evaluated in this DEIR. As noted above, the use of recycled water to supplement water demands of the unincorporated area is not anticipated to meet the County's future water demands in Napa Valley. With no additional sources identified for the unincorporated area, groundwater overdraft would occur that would impact existing wells and could require the re-drilling to deepen wells and/or restrictions regarding groundwater usage that could limit land uses.

**TABLE 4.13.3-38
TYPES OF POTENTIAL ENVIRONMENTAL IMPACTS THAT COULD BE CAUSED BY NEW WATER SUPPLY PROJECTS, WATER RIGHTS TRANSFERS, AND RELATED INFRASTRUCTURE**

Types of Potentially Affected Resources	Related and Potential Impacts
Surface Water Hydrology	Changes in the magnitude and timing of flows in affected streams; changes in the level of affected reservoirs and lakes.
Geology and Soils	Increase in erosion and sedimentation from construction activities; change in sediment transport in streams; geologic hazards could cause problems for new facilities and their operators if they are not sited carefully.

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Types of Potentially Affected Resources	Related and Potential Impacts
Water Quality	Changes in stream and reservoir/lake temperature, dissolved oxygen, turbidity, total suspended solids, and other water quality parameters of concern during construction and operation of new facilities.
Fishery Resources including Special-status Species	Change in the amount and quality of fishery habitat in affect streams and reservoirs/lakes, and potential fish entrainment at possible diversion sites in lakes and streams.
Wetlands and Riparian Habitat	Changes in the amount or functions and values of various types of wetlands from the construction of new facilities, or in riparian areas from changes in the operation of reservoir/lakes and changes in streamflows. Riparian habitat could be affected by hydrology changes or new construction and is especially important habitat for wildlife and botanical species.
Botanical Resources including Special-status Species	Disturbance to rare plants and their habitat and other types of vegetation from construction activities or changes in hydrology along streams and at reservoirs and lakes.
Wildlife Resources including Special-status Species	Changes in the amount and quality of affected wildlife habitat near affected reservoir/lakes, and streams and where appurtenant facilities would be located.
Recreation	Changes in the quantity or quality of recreation opportunities, including fishing, boating, hiking, and whitewater rafting affected reservoirs/lakes and in affected streams; some impacts could also occur during construction and operation of new conveyance, treatment, storage, and pumping facilities.
Visual Resources	Changes in reservoir/lake levels, and streamflows and the addition of new project facilities could affect the visual environment. New pipelines, pumping stations, or transmission lines near or in residential areas or highly visited areas would cause negative impacts.
Agriculture	Some irrigated land or grazing land could be taken out of production where project conveyance facilities need to be located and to accommodate growth. The availability of surface water supplies for agricultural uses could increase.
Cultural Resources	Historic, prehistoric, and ethnographic resources could be affected by hydrology changes or the construction and maintenance of new facilities.
Compatibility with Existing Land Uses and Other Policies and Plans	Some new project facilities may not be compatible with surrounding land uses, or may be inconsistent with related federal, state, tribal, and local plans and policies (including those of the U.S. Forest Service, USFWS, and California Department of Fish and Game).
Mineral Resources	New project facilities could interfere with the extraction of minerals at known or yet-to-be-discovered mineral sites.
Public Utilities	The routing and sitting of new project facilities could interfere with the operation or maintenance of existing or planned public utilities, including communication and energy infrastructure.

Types of Potentially Affected Resources	Related and Potential Impacts
Socioeconomic Resources	Customers of the water purveyors and other would enjoy the socioeconomic benefits associated with a more reliable water supply and related economic growth. Water rates would likely increase to help pay for new facilities. Facility construction would cause short-term and beneficial employment and income impacts. Energy or mineral impacts would also cause related socioeconomic effects.
Air Quality and Noise	Air emissions from construction equipment and traffic and loud noises could occur during the construction phase of new projects. New pumping stations would likely cause adverse noise impacts for nearby residents and recreationists.
Transportation	Local roads would experience traffic increases during construction.
Public Health and Safety	Construction activities could create some safety hazards.
Growth-inducing Effects	New system infrastructure and water supply projects would likely cause growth-inducing impacts.

Water supply impacts specific to each alternative is further described below.

Alternative A

As identified in Section 3.0 (Project Description), this alternative would retain the existing land use designations under the current General Plan Land Use Map as well as the policy guidance set forth under the existing General Plan. Between the year 2005 and 2030, it is projected that there would be an additional 2,235 dwelling units and 16,014,000 square feet of non-residential uses in the unincorporated portion of the County (in addition to the 10,000 to 12,500 acres of new vineyard development anticipated by year 2030). Using water demand factors from **Appendix J** (see Technical Memorandum No. 2 for factors used for commercial and industrial uses from the City of American Canyon and Technical Memorandum No. 3 for unincorporated water demands for residential uses), this development would generate 842 acre-feet annually of residential water demand and 2,780 acre-feet annually for non-residential uses. Some of this development that would occur within the city's service areas. As noted above, by year 2020, the County as a whole is anticipating water shortages in dry years and multiple dry years, and some unincorporated areas relying on ground water may also experience shortages in normal years. While mitigation measures are identified below to minimize this impact, it is difficult to determine the specific feasibility of future water supply projects, and this impact would remain **significant and unavoidable** for Alternative A.

Alternative B

This alternative would generally retain the existing land use designations under the current General Plan Land Use Map similar to Alternative A. However, this alternative would provide for additional growth within currently General Plan designated areas for rural and urban development (such as within the unincorporated community of Angwin) as well as re-use of the Pacific Coast/Boca site and Napa Pipe site and County-owned sites within the City of Napa. Between the year 2005 and 2030, it is projected that there would be an additional 3,885 dwelling units and 14,636,000 square feet of non-residential uses in the unincorporated portion of the

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County. Based on using the water demand factors described above for Alternative A (including residential factors for the City of Napa), this development would generate 1,539 acre-feet annually of residential water demand and 2,541 acre-feet annually for non-residential uses. Some of this development that would occur adjoining the cities and within their service areas. As noted above, by year 2020, the County as a whole is anticipating water shortages in dry years and multiple dry years, and some unincorporated areas relying on ground water may also experience shortages in normal years. While mitigation measures are identified below to minimize this impact, it is difficult to determine their specific feasibility of future water supply projects, and this impact would remain **significant and unavoidable** for Alternative B.

Alternative C

Between the year 2005 and 2030, it is projected that there would be an additional 7,635 dwelling units and 12,990,000 square feet of non-residential uses in the unincorporated portion of the County under this alternative. Alternative C would involve some additional land use changes beyond Alternative B that would allow for additional development/redevelopment (e.g., redesignation of Napa Pipe and Pacific Coast/Boca sites, potential expansion of the rural and urban uses in Angwin and establishment of a new RUL for the City of American Canyon). Based on using the water demand factors described above for Alternative A (including residential factors for the City of Napa), this development would generate 3,077 acre-feet annually of residential water demand and 2,255 acre-feet annually for non-residential uses. Some of this development that would occur adjoining the cities and within their service areas. As noted above, by 2020, the County is anticipating water shortages in dry years and multiple dry years, and some of the unincorporated areas relying on ground water may also experience shortages in normal years. While mitigation measures are identified below to minimize this impact, it is difficult to determine their specific feasibility of future water supply projects, and this impact would remain **significant and unavoidable** for Alternative C.

Mitigation Measures

The following mitigation measures would apply to all three alternatives:

MM 4.13.3.1a The County shall include a policy in the General Plan that requires the County to periodically review its groundwater ordinance based on available studies and monitoring data, and shall review all discretionary projects proposing the use of groundwater to ensure they will not significantly impact groundwater availability or use over the long term. In some areas, this analysis may utilize quantitative standards based on technical studies and established by ordinance; in other areas, this analysis may involve comparing the projected rate of groundwater use to the calculated rate of recharge. The most detailed review and the most stringent standards will be applied in officially designated groundwater deficient areas, such as the MST.

MM 4.13.3.1b The County shall include a policy in the General Plan that requires verification of adequate water supply and distribution facilities for development projects prior to their approvals. This will include (as applicable) coordination with the cities, public and private water purveyors to verify water supply adequacy and may be satisfied as part of compliance with County Code provisions and/or state law requirements (i.e., Senate Bill 610 and Senate Bill 221).

Implementation of the above mitigation measures as well as mitigation measures MM 4.11.4, MM 4.11.5a through e (which would primarily be applied to vineyard development projects) and

County Code provisions under chapters 13.04, 13.08, 13.12 and 13.15 would require verification of adequate water supply, protection of groundwater resources and recharge areas, utilization of conservation measures and use of recycled water would reduce water supply impacts. As noted above, the County (cities and unincorporated area) is projecting water supply shortfalls in year 2020 and 2050 for the Napa Valley. Several projects are under consideration for mitigating these shortfalls. However, not all of these projects have been approved or fully developed to ensure meeting the anticipated shortfalls in years 2020 and 2050. Thus, this impact is considered **significant and unavoidable** for all three alternatives.

4.13.4 SEWER SERVICE

4.13.4.1 EXISTING SETTING

There are several wastewater service providers in Napa County serving various portions of the County including: the Napa Sanitation District (NSD), Lake Berryessa Resort Improvement District (LBRID), Napa Berryessa Resort Improvement District (NBRID), Napa River Reclamation District #2109 (NRRD), Spanish Flat Water District (SFWD), Circle Oaks County Water District (COCWD), and American Canyon Public Works Department. The NSD serves 13 non-contiguous areas encompassing 12,448 acres and provides wastewater service to over 33,000 customers and serves the majority of the City of Napa and some southern portions of the County. The LBRID has a contiguous service area encompassing 2,030 acres and currently has between 150-160 connections. The NBRID service area consists of approximately 1,899 acres and includes the Steele Park Resort and provides service to 270 to 280 homes. The NRRD currently serves 138 connections, with the service area encompassing the western side of Edgerly Island near the San Pablo Bay and the area known as the Ingersoll tract, which includes 30 existing connections. **Table 4.13.4-1** illustrates the County's sewer providers, service area, facilities, planned improvements, and capacity compared to existing demand.

As indicated, the SFWD serves four non-contiguous, unincorporated portions of the County, encompassing 1,178 acres and serves 165 sewer line connections. The COCWD provides sewer service to 252 non-contiguous acres in the unincorporated County with 189 sewer line connections; whereas, the City of American Canyon Public Works Department operates the American Canyon WTP and provides service to two non-contiguous portions of the unincorporated County, encompassing 2,672 acres. The NSD operates six pump stations, 267 miles of conveyance pipelines, 250 miles of sewer laterals, and one Wastewater Treatment Plant (WTP). The NSD current capacity exceeds existing demands (15.4 mgd dry flows and 14 mgd wet flows) and has adequate capacity to accommodate projected future growth (Heeley, 2004). However, the NSD has plans that include, but are not limited to, improving reclaimed water storage facilities, replacing pump stations, and rehabilitating deteriorated pipelines. The LBRID has one WPT seven sewer treatment/evaporation ponds, one storage tank, and various lift/pump stations. The WTP has a current capacity of 0.85 mgd and receives an average of 0.20 mgd; therefore, the capacity is adequate to accommodate existing and project demands. To improve system efficiency, the district is in the process of obtaining permits for an irrigation field and other infrastructure improvements.

The NBRID has one evaporation pond, one spray field and one WTP, with a design capacity of 0.176 mgd. The capacity exceeds existing demand, as the district receives approximately 0.66 mgd of average dry weather flows. Even with sufficient capacity, the district plans to rehabilitate and/or replace monitoring wells and other deteriorated sewer infrastructure. The NRRD operates the NRRD WTP, three large evaporation ponds, three flood control pumps and also maintain 15 septic tanks that receive flow from 138 connections. The NRRD WTP capacity exceeds existing and projected demand, with a capacity of 0.40 mgd and an average dry weather flow of 0.20 mgd. The NRRD does not have any planned system or facility

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improvements. The SFWD operates the Berryessa Pines WTP, which consists of an aeration system and an injector used to convey sewage flows. The Berryessa Pines WTP capacity exceeds existing and projected demand, with a capacity of 0.053 mgd and peak flows of 0.047 mgd; therefore, there are no expansion or improvements planned.

**TABLE 4.13.4-1
SEWER SERVICE PROVIDERS**

Provider	Service Area	Facilities	Capacity	Existing Demand	Planned Improvements	Capacity Compared to Existing Demand
Napa Sanitation District (NSD)	13 non-contiguous areas consisting of 12,448 acres. The majority of the City of Napa as well as unincorporated portions of southern Napa County. ¹ Provides sewer service to over 33,000 connections.	Six pump stations, 267 miles of pipeline, 250 miles of sewer laterals, and one wastewater treatment plant (WWTP) located at 15 Soscol Ferry Road. ¹	The WWTP has a permitted average dry weather capacity of 15.4 mgd which it has never reached. ¹	Demand for sewer service is approx. 6.8 mgd during dry weather flow and approx. 14 mgd during wet weather flow. ¹	With \$103 Million allocated in the 5-year budget, plans to expand water reclamation program, improve reclaimed water storage facilities, make improvements to, and/or replace pump stations, and improve, rehabilitate and expand sewer pipelines. ¹	Capacity exceeds demand. Permitted average dry weather capacity of 15.4 mgd and a demand of approx. 14 mgd during wet weather flow. NSD WWTP has adequate capacity for future growth and is set up to accommodate more components. ¹
Lake Berryessa Resort Improvement District	A contiguous, unincorporated area consisting of 2,030 acres. Provides sewer service to 150-160 homes. ²	WWTP Seven sewer treatment ponds (total capacity of 35 acre feet). One storage tank Lift stations. ²	WWTP design capacity of 0.85 mgd. 91,000 gallons (storage tank). ²	Average dry weather flow of 0.20 mgd; average wet weather flow is unknown. ²	Gain a permit to install an irrigation field and sewer infrastructure improvements. ²	WWTP design capacity of 0.85 mgd and average dry weather flow of 0.20 mgd. Occasionally heavy rains can inundate tank. ²
Napa Berryessa Resort Improvement District	A contiguous, unincorporated area consisting of 1,899 acres including the Steele Park Resort. Serves 270-280 homes. ²	WWTP and one pond Employs a spray field ²	WWTP design capacity of 0.176 mgd. The pond's capacity is 1.6 mgd. ²	Average dry weather flow of 0.066 mgd; average wet weather flow is unknown. ²	Replace and/or rehabilitate monitoring wells and sewer infrastructure. ²	WWTP design capacity of 0.176 mgd and average dry weather flow of 0.066 mgd. Occasionally wet weather flow exceeds maximum RWQCB limit. ²

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Provider	Service Area	Facilities	Capacity	Existing Demand	Planned Improvements	Capacity Compared to Existing Demand
Napa River Reclamation District #2109 (NRRD)	Provides sewer service for an estimated district population of 350 people and to 138 sewer connections. Jurisdiction includes the western side of Ederly Island near San Pablo Bay and an annexed section of property north of Ederly Island area called the Ingersoll tract which includes about 30 homes. ³	NRRD WWTP Three large evaporation ponds Three flood control pumps. Owns approx. 15 septic tanks (8x10x14) that collect raw sewage from all 138 connections. Effluent is pumped out of the septic tanks to the "mound filtration system." ³	The WWTP has a capacity of 0.040 mgd.10 Mound filtration system has an effluent capacity of 1.040 mgd. ³	2003 demand for sewer service was approx. 0.016 mgd during dry weather flow and 0.020 mgd during wet weather flow. ³	Currently there are no planned improvements, however, there has been some discussion to replace parts on the WWTP within the next few years. ³	Capacity exceeds demand. The WWTP has a capacity of 0.040 mgd, which it has never reached10 and an average wet weather flow of 0.020 mgd.
Spanish Flat Water District	Four non-contiguous, unincorporated areas consisting of 1,178 acres including the Spanish Flat resort. 165 sewer line connections. ⁴	Berryessa Pines WWTP: consists of an aeration system that conveys sewage collected from the 99-lot subdivision to 2 adjacent ponds using percolation and evaporation. 42 of the lots within the subdivision gravity feed directly to the sewer plant. An ejector system is used to convey sewage from the remaining 57 lots. Spanish Flat WWTP	Berryessa Pines WWTP ponds: 2.5 million gallons.12 Spanish Flat WWTP: 0.053 mgd (design capacity). ⁴	Spanish Flat WWTP: average dry weather flow: 22,150 gallons per day; peak dry weather flow: 46,515 gallons per day. Average wet weather flow: 23,479 gallons per day; peak wet weather flow: 47,697 gallons per day. ⁴ Berryessa Pines WWTP: data not available.	None.	Capacity exceeds demand. Spanish Flat WWTP: 0.053 mgd (design capacity) and a peak wet weather flow of 47,697 gallons per day.
Circle Oaks County Water District	Four non-contiguous, unincorporated areas consisting of approx. 252 acres and 189 sewer lines. ⁵	3 sewage treatment ponds and associated pumps. ⁵	The average dry weather flow for the pond system is 72,000 gallons per day. ⁵	The high avg. flow dry weather month is September, with a daily avg. of 48,553 gallons. The high avg. flow wet weather month is February, with a daily avg. of 133,718 gallons. ⁵	None.	Demand exceeds capacity. Capacity of the pond system is 72,000 gpd and the high avg. wet weather flow is 133,718 gallons per day.

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Provider	Service Area	Facilities	Capacity	Existing Demand	Planned Improvements	Capacity Compared to Existing Demand
American Canyon Public Works Department	Two incorporated non-contiguous areas consisting of 2,672 acres. Service area is defined as Soscol Creek to the north, Solano County to the east and south, and the Napa River to the west. ⁶	American Canyon WWTP	Treatment capacity has been designed to meet projected demand of 2.5 mgd during dry weather flow and 5.0 mgd during peak wet weather flow. ⁶	1.14 mgd during dry weather flow and 1.32 mgd during peak wet weather flow. ⁶	Looking to implement cyclic valve operations which would help reduce energy usage by 25%. Make improvements to the lift stations which would also help to conserve energy. ⁶	Capacity exceeds demand. Treatment capacity designed to meet 2.5 mgd during dry weather flow and 5.0 mgd during peak wet weather flow, while existing dry weather flow and wet weather flow are 1.14 mgd and 1.32 mgd respectively. ⁶

1 Heeley 2004.
 2 Martinez 2004.
 3 Hoffman 2004.
 4 Silva 2004.
 5 Simonds 2004.
 6 Foley 2004.

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The COCWD operates and maintains three evaporation ponds and associated pumps. It is important to note that the current demand exceeds the capacity, with the pond system having a capacity of 72,000 gallons per day but receiving peak wet weather flows of 133,718 gallons per day. The COCWD needs system improvements and additional pond capacity to accommodate existing and projected flows. The American Canyon WTP and conveyance system's capacity exceeds existing and projected demands. The facility is designed to accommodate 2.5/5.0 mgd of dry/wet weather flows and receives on an average of 1.14 mgd of dry flows and 1.32 mgd of wet weather flows. The City is planning to implement cyclic valve operations and make improvements to lift stations to conserve energy and improve overall system efficiency.

4.13.4.2 REGULATORY FRAMEWORK

FEDERAL

Clean Water Act

The Clean Water Act (CWA) regulates the water quality of all discharges into waters of the United States including wetlands, perennial and intermittent stream channels. Section 401, Title 33, Section 1341 of the CWA sets forth water quality certification requirements for "any applicant applying for a federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." Section 404, Title 33, Section 1344 of the CWA in part authorizes the U.S. Army Corps of Engineers to:

- Set requirements and standards pertaining to such discharges: subparagraph (e);
- Issue permits "for the discharge of dredged or fill material into the navigable waters at specified disposal sites": subparagraph (a);
- Specify the disposal sites for such permits: subparagraph (b);
- Deny or restrict the use of specified disposal sites if "the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies and fishery areas": subparagraph (c);
- Specify type of and conditions for non-prohibited discharges: subparagraph (f);
- Provide for individual State or interstate compact administration of general permit programs: subparagraphs (g), (h), and (j);
- Withdraw approval of such State or interstate permit programs: subparagraph (i);
- Ensure public availability of permits and permit applications: subparagraph (o);
- Exempt certain Federal or State projects from regulation under this Section: subparagraph (r); and,
- Determine conditions and penalties for violation of permit conditions or limitations: subparagraph (s).

- Section 401 certification is required prior to final issuance of Section 404 permits from the U.S. Army Corps of Engineers.

LOCAL

Napa County Sanitation District

The Napa Sanitation District (NSD) is located in the Napa Valley and provides wastewater collection, treatment and disposal services to the residents and businesses in the City of Napa and surrounding unincorporated areas of Napa County. NSD has been serving the public since it was organized under the California Health and Safety Code in November 1945. As a Special District, NSD is an independent local agency governed by 3 elected officials from the City and County, as well as 2 public appointees. There are over 33,000 connections within NSD's Sphere of Influence of approximately 23 square miles of service area.

Napa County Code Title 13

Title 13 "Water, Sewers and Public Services" of the Napa County Code regulates individual, private and public sewage systems within the unincorporated portions of the County. Napa County Code Title 13 includes connection requirements, permits and applicable fees, system location, design and operation requirements to ensure public safety and lessen environmental related impacts. County Code specifically includes required site evaluations on soil conditions, percolation tests, depth to groundwater (sewage disposal areas must have a three foot separation from the seasonal high groundwater levels, and distances from wells, creeks, slopes and reserve areas. In addition, County Code includes required details regarding operation and maintenance of sewage facilities.

4.13.4.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to wastewater service would occur if implementation of the proposed project would result in the following:

- Project exceeds wastewater treatment requirement of the applicable Regional Water Quality Control Board;
- Require or result in the construction of new water or wastewater treatment facilities or expansion or existing facilities, the construction of which could cause significant environmental effects; or,
- 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.

METHODOLOGY

Preparation of this impact analysis was based on consultation with LAFCO and Napa County wastewater service providers and review of existing and proposed General Plan policies and the Napa County Code.

4.13 PUBLIC SERVICES AND UTILITIES

IMPACTS AND MITIGATION MEASURES

Sewer Treatment and Conveyance

Impact 4.13.4.1 Land uses and development under the proposed Napa County General Plan Update would require additional sewer treatment capacity and conveyance facilities to accommodate the increase in demand. (Significant and Mitigable – All Alternatives).

As discussed above, the prediction of sewage flows, projections, and estimates are determined by population based information, which were provided by KMA. Sewer flows vary based on variations of land use and demographics. For the purposes of this analysis it is assumed that residential land uses could generate 300 gallons per day per residential unit (flow rate used by a several agencies for wastewater planning [e.g., Sacramento Regional Sanitation District and the City of Jackson]), while non-residential uses generation rates were 30 gallons per day per employee (factors used in the Napa County Airport Industrial Area Specific Plan). As of 2005, the County's service providers had adequate capacity to meet the existing demand; however, there could be a shortage in some provider's treatment or conveyance capacity if development were to expand into the unincorporated portions of the County. To ensure efficient operations, various providers are planning and currently undertaking various modification and rehabilitation efforts to improve system efficiency and reduce potentially physical impacts (see **Table 4.13.4-1**) as well as maintain compliance with wastewater discharge requirements of the RWQCB and state. As indicated in **Table 4.13.4-1**, the NSD plans to expand its water reclamation program, improve existing reclaimed water storage facilities, replace or upgrade pump stations, and improve rehabilitate and expand existing conveyance lines. The LBRID is in the process of obtaining a permit to install an irrigation field and other modifications and improvements to existing infrastructure and the NBRID plans the replacement and /or the rehabilitation of existing monitoring well and sewer conveyance and transmission infrastructure. Both of these districts are considering the formation of assessment districts for the funding of needed infrastructure repairs. Additionally, the American Canyon Public Works Department is looking to implement cyclic valve operations on existing facilities and other modifications to improve the overall treatment and conveyance system, and is undertaking a review of their system capacity. These efforts are likely to give the various service providers adequate treatment and service capacity to meet the projected demands within their service area boundaries. Potential environmental effects associated with wastewater system improvements could include, but are not limited to, construction and operational air quality and noise effects, biological resource impacts, habitat and aquatic resources, geologic and hydrologic impacts from both construction and operation, hazards and growth inducement. These potential environmental effects would be addressed as part of consideration of those improvements by service providers.

As noted above, the Napa County Code regulates individual, private and public sewage systems within the unincorporated portions of the County. Napa County Code Title 13 includes connection requirements, permits and applicable fees, system location, design and operation requirements to ensure public safety and lessen environmental related impacts. County Code specifically includes required site evaluations on soil conditions, percolation tests, depth to groundwater (sewage disposal areas must have a three foot separation from the seasonal high groundwater levels, and distances from wells, creeks, slopes and reserve areas. In addition, County Code includes required details regarding operation and maintenance of sewage facilities.

Sewer impacts specific to each alternative is further described below.

Alternative A

This alternative would retain the existing land use designations under the current General Plan Land Use Map as well as the policy guidance set forth under the existing General Plan. Between the year 2005 and 2030, it is projected that there would be an additional 2,235 dwelling units and 16,014,000 square feet of non-residential uses in the unincorporated portion of the County (in addition to the 10,000 to 12,500 acres of new vineyard development anticipated by year 2030). Based on the sewer demand factors described above, Alternative A could result in an increase in sewer service demand of 0.99 mgd by the year 2030, with some of this demand occurring in areas serviced by the cities of American Canyon and Napa (e.g., anticipated job growth in the Airport Industrial Area). This increase in sewer service demand could result in potentially significant service impacts. Thus, this impact would be considered **significant and mitigable** with the implementation of mitigation measures identified below.

Alternative B

This alternative would generally retain the existing land use designations under the current General Plan Land Use Map similar to Alternative A. However, this alternative would provide for additional growth within currently General Plan designated areas for rural and urban development (such as within the unincorporated community of Angwin) as well as re-use of the Pacific Coast/Boca site and Napa Pipe site and County-owned sites within the City of Napa. Between the year 2005 and 2030, it is projected that there would be an additional 3,885 dwelling units and 14,636,000 square feet of non-residential uses in the unincorporated portion of the County. Based on the sewer demand factors described above, Alternative B could result in an increase in sewer service demand of 1.50 mgd by the year 2030, with some of this demand occurring in areas serviced by the cities of American Canyon and Napa (e.g., anticipated job growth in the Airport Industrial Area and development of the Napa Pipe and the Pacific Coast/Boca sites). This increase in sewer service demand could result in potentially significant service impacts. Thus, this impact would be considered **significant and mitigable** with the implementation of mitigation measures identified below.

Alternative C

Between the year 2005 and 2030, it is projected that there would be an additional 7,635 dwelling units and 12,990,000 square feet of non-residential uses in the unincorporated portion of the County under this alternative. Alternative C would involve some additional land use changes beyond Alternative B that would allow for additional development/redevelopment (e.g., redesignation of Napa Pipe and Pacific Coast/Boca sites, potential expansion of the rural and urban uses in Angwin and establishment of a new RUL for the City of American Canyon). Based on the sewer demand factors described above, Alternative C could result in an increase in sewer service demand of 2.55 mgd by the year 2030, with some of this demand occurring in areas serviced by the cities of American Canyon and Napa (e.g., anticipated job growth in the Airport Industrial Area and development of the Napa Pipe and the Pacific Coast/Boca sites). This increase in sewer service demand could result in potentially significant service impacts. Thus, this impact would be considered **significant and mitigable** with the implementation of mitigation measures identified below.

Mitigation Measures

The following mitigation measure would apply to all three alternatives:

4.13 PUBLIC SERVICES AND UTILITIES

- MM 4.13.4.1** The County shall include a policy in the General Plan that requires (as part of continued implementation of County Code Title 13 Division 2 provisions associated with sewer systems) verification of adequate wastewater service for development projects prior to their approvals. This will include coordination with wastewater service purveyors to verify adequate capacity and infrastructure either exists or will be available upon operation of the development project.

Implementation of the above mitigation measure and adherence to the existing County Code requirements and implementation of would ensure that the environmental effects of providing additional treatment capacity and conveyance facilities to accommodate the increase in demand associated with Alternatives A, B, and C would be **less than significant**.

4.13.5 SOLID WASTE

4.13.5.1 EXISTING SETTING

There are currently five solid waste providers and two joint powers agencies/authorities in Napa County. Solid waste providers include the Upper Valley Disposal Service (UVDS), Berryessa Garbage Service (BGS), Napa Recycling and Waste Services (NRWS), Napa County Recycling and Waste Services (NCRWS), and American Canyon Recycling and Disposal (ACRD). The joint power agencies/authorities in the County include the Upper Valley Waste Management Agency (UVWMA) and the Napa Vallejo Waste Management Authority (NVWMA). These joint power agencies do not provide solid waste collection or disposal services. The UVWMA was formed to provide the coordination of economic and regional waste management services to meet the requirements set forth in the California Integrated Waste Management Act. The UVWMA includes Yountville, St. Helena, Calistoga, and the northern unincorporated portions of the County. The NVWMA includes the City's of Napa, Vallejo, American Canyon and the southern portion of the unincorporated county. The NVWMA was formed to coordinate all solid waste and recycling services within its watershed. The NVWMA owns and operates the Devlin Road Recycling/Transfer Station and the Hazardous Waste Collection Facility and the American Canyon sanitary landfill and active transfer station. The Devlin Road Recycling and Transfer Facility receives an average of 560 tons of waste daily and has permitted capacity to handle up to 1,600 tons of solid waste per day.

The UVDS collects and disposes solid waste and recycling materials at the Clover Flat landfill, which is located, 4380 Silverado Trail, just south of Calistoga. The Clover Flat landfill is permitted to receive up to 600 tons of waste daily and has an ultimate permitted capacity of 5,100,000 cubic yards. This facility has a remaining capacity of 3,081,046 cubic yards and is permitted through 2021, which is the facility's anticipated closing date. BGS uses the Potrero Hills landfill which receives up to 4,330 tons of waste daily and had 13,800,000 cubic yards of remaining capacity as of 2001. The NRWS, NRWCS, and ACRD transport waste to Devlin Road Recycling and Transfer Facility, which is ultimately disposed of at the Keller Canyon landfill in Contra Costa County, which is permitted to receive 3,500 tons of waste per day. As of January 2004, the Keller Canyon Landfill had 64.8 million cubic yards of remaining capacity and has enough permitted capacity to receive solid waste through 2030, which is its anticipated closure date (California Integrated Waste Management Board, April 2006).

4.13.5.2 REGULATORY FRAMEWORK

FEDERAL

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 to address the huge volumes of municipal and industrial solid waste generated nationwide. After several amendments, the Act as it stands today governs the management of solid and hazardous waste and underground storage tanks (USTs). RCRA, enacted in 1976, is an amendment to the Solid Waste Disposal Act of 1965. RCRA has been amended several times, with the most substantial changes made by the Hazardous and Solid Waste Amendments (HSWA) of 1984. RCRA is a combination of the first solid waste statutes and all subsequent amendments. RCRA authorizes EPA to regulate waste management activities. RCRA authorizes states to develop and enforce their own waste management programs, in lieu of the federal program, if a state's waste management program is substantially equivalent to, consistent with, and no less stringent than the federal program.

STATE

California Integrated Waste Management Act

The California Integrated Waste Management Act of 1989 (AB 939) requires every city and county in the State to prepare a Source Reduction and Recycling Element to its Solid Waste Management Plan that identifies how each jurisdiction will meet the mandatory State waste diversion goals of 25 percent by 1995 and 50 percent by 2000 and beyond. The purpose of AB 939 is to "reduce, recycle, and re-use solid waste generated in the State to the maximum extent feasible." The term "integrated waste management" refers to the use of a variety of waste management practices to safely and effectively handle the municipal solid waste stream with the least adverse impact on human health and the environment. The Act has established a waste management hierarchy, as follows: Source Reduction; Recycling; Composting; Transformation; and Disposal. Based on the most recent California Integrated Waste Management Board (CIWMB) data, Napa County is in full compliance with AB 939 and has continued to improve its solid waste diversion programs. There are four AB 939 reporting jurisdictions in Napa County (UVWMA, City of Napa, City of American Canyon, the remaining portions of the unincorporated County). The most recent CIWMB approved diversion rates are from 2002 and indicated that UVWMA diverted approximately 56 percent, the City of Napa diverted 56 percent, the City of American Canyon diverted approximately 53 percent, and the unincorporated portions of the County diverted 69 percent, respectively. The Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE) are components of AB 939 and are included in the County's Integrated Waste Management Plan. The approval dates of applicable AB 939 planning documents for each jurisdiction is provided in **Table 4.13.5-1** below.

4.13 PUBLIC SERVICES AND UTILITIES

**TABLE 4.13.5-1
APPROVAL DATES OF AB 939 PLANNING DOCUMENTS**

Jurisdiction	SRRE	NDFE	HHWE	Siting Element	Summary Plan
American Canyon	April 1997	June 1996	October 1994	N/A	N/A
City of Napa	September 1994	June 1996	July 1997	N/A	N/A
Upper Valley Waste Management Agency	July 1997	July 1997	July 1997	N/A	N/A
Remaining Unincorporated County	April 1997	February 1995	February 1995	July 1997	N/A
County-wide			July 1997	July 1997	

Source: Napa County Environmental Management Department. October 2006.

Notes: 1. Base year correction October 1997.

2. Base year correction October 1997 – new base year 2003.

California Integrated Waste Management Board Model Ordinance

Subsequent to the Integrated Waste Management Act, additional legislation was passed to assist local jurisdictions in accomplishing the goals of AB 939. The California Solid Waste Re-use and Recycling Access Act of 1991 (Sections 42900-42911 of the Public Resources Code) directs the California Integrated Waste Management Board (CIWMB) to draft a “model ordinance” (which Sacramento County has adopted) relating to adequate areas for collecting and loading recyclable materials in development projects.

The model ordinance is used by the County as the basis for imposing recycling conditions on new development projects and on existing projects that add 30 percent or more to their existing floor area. The model ordinance requires that any new development project, for which an application is submitted on or after September 1, 1994, include “adequate, accessible, and convenient areas for collecting and loading recyclable materials.” For subdivisions of single-family detached homes, recycling areas are required to serve only the needs of the home within that subdivision. The ordinance is not currently implemented by the County but is expected to be included by mid 2007.

4.13.5.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to solid waste service would occur if implementation of the proposed project would result in the following:

- Production of quantities of solid waste that would exceed the capacity of the landfill(s) that will serve the project’s solid waste disposal needs.
- Non-compliance with federal, state, and local statutes and regulations related to solid waste.

METHODOLOGY

Evaluation of potential impacts on solid waste facilities and services was based on consultation with County staff, as well as review of other pertinent literature.

Solid Waste Service**Impact 4.13.5.1 Land uses and development under the proposed Napa County General Plan Update would increase solid waste generation and the demand for related services. (Less Than Significant Impact – All Alternatives)**

As previously discussed, the solid waste providers in the County consist of UVDS, BGS, NRWS, NCRWS, and ACRD and the County is currently meeting the source reduction requirements of AB 939. These providers collect the County's solid waste from various transfer stations and ultimately dispose of it at the Keller Canyon landfill and the Clover Flat landfill. The capacity at each facility exceeds current and projected demand. As of January 2004, the Keller Canyon Landfill had 64.8 million cubic yards of remaining capacity and has enough permitted capacity to receive solid waste through 2030, which is its anticipated closure date (California Integrated Waste Management Board, April 2006). In addition, the County would continue to implement the Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE) that are included in the County's Integrated Waste Management Plan, which would ensure continued compliance with AB 939 under the proposed General Plan Update (all alternatives).

Solid waste impacts specific to each alternative is further described below.

Alternative A

Based on the latest CIWMB estimates, per capital solid waste disposal in the County is approximately 1.97 tons of solid waste a year and 2.9 pounds per day per employee for businesses. Implementation of Alternative A would increase solid waste generation in approximately 15,609 tons of solid waste generated annually by the year 2030 over current conditions. As noted above, there adequate capacity at landfill facilities utilized by the County and the County would continue to implement the Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE) that are included in the County's Integrated Waste Management Plan, which would ensure continued compliance with AB 939 under the proposed General Plan Update. Thus, Alternative A would have a **less than significant** solid waste service impact.

Alternative B

Based on the latest CIWMB estimates, per capital solid waste disposal in the County is approximately 1.97 tons of solid waste a year and 2.9 pounds per day per employee for businesses. Implementation of Alternative B would increase solid waste generation in approximately 23,637 tons of solid waste generated annually by the year 2030 over current conditions. As noted above, there adequate capacity at landfill facilities utilized by the County and the County would continue to implement the Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE) that are included in the County's Integrated Waste Management Plan, which would ensure continued compliance with AB 939 under the proposed General Plan Update. Thus, Alternative B would have a **less than significant** solid waste service impact.

4.13 PUBLIC SERVICES AND UTILITIES

Alternative C

Based on the latest CIWMB estimates, per capital solid waste disposal in the County is approximately 1.97 tons of solid waste a year and 2.9 pounds per day per employee for businesses. Implementation of Alternative C would increase solid waste generation in approximately 40,137 tons of solid waste generated annually by the year 2030 over current conditions. As noted above, there adequate capacity at landfill facilities utilized by the County and the County would continue to implement the Source Reduction and Recycling Element (SRRE), Non-disposal Facility Element (NDFE) and Household Hazardous Waste Element (HHWE) that are included in the County's Integrated Waste Management Plan, which would ensure continued compliance with AB 939 under the proposed General Plan Update. Thus, Alternative C would have a **less than significant** solid waste service impact.

Mitigation Measures

None required.

4.13.6 PUBLIC SCHOOLS

4.13.6.1 EXISTING SETTING

The public school districts serving Napa County include the Napa Valley Unified School District (NVUSD), St. Helena Unified School District (SHUCD), Calistoga Joint Unified School District (CJUSD), Howell Mountain Elementary School District (HMESD), Pope Valley Union Elementary School District (PVUESD), and the Fairfield-Suisun Joint Unified School District (FSJUSD). **Table 4.13.6-1** illustrates the service area, number of schools, and capacity of each district.

**TABLE 4.13.6-1
NAPA COUNTY SCHOOL DISTRICTS**

School District	NVUSD*	SHUSD*	CJUSD*	HMESD	PVUESD	FSUSD
Service area	City of Napa, Town of Yountville, American Canyon	City of St. Helena	City of Calistoga	Unincorporated portions of the County including Angwin	Unincorporated portions of the County including Pope Valley	Extends from Yolo County into southeastern Napa County
Number of Schools	32 schools	5 schools	3 schools	1 school	1 school	28 schools
Capacity ¹	Not available (current enrollment 17,000 students in K-12)	1,785 (current enrollment 1,486)	815 (current enrollment 950)	Total capacity is dependent on teacher demand, resulting from student attendance - (current enrollment 79 students in K-8)	100 students (current enrollment (64 students in K-8)	Not available (current enrollment 23,277 students in K-12)

Source: Napa County, BDR 2005.

Notes: *These districts also serve unincorporated portions of the County.

1. Current enrollments figures are based on 2003-2004 figures.

Existing Demand

As indicated in **Table 4.13.6-1**, the NVUSD had 17,000 students in K-12 during the 2003-2004 school years. As classrooms become fuller, the district builds modular classrooms to accommodate increases in student population. The SHUSD had a current enrollment of 1,486 students in K-12 during the 2003-2004 school year. The SHUSD has experienced a slow downward trend in middle and high school enrollments; however, has experienced an increase in elementary school enrollment over that same time period. The CJUSD, which had 79 students for the 2003-2004 school year, has had a decreasing student enrollment since 2002. The existing enrollment for the HMESD, PVUESD, and the FSUSD are illustrated in **Table 4.13.6-1** and have not indicated any recent trends in declining or increasing student enrollment totals.

4.13.6.2 REGULATORY FRAMEWORK

STATE

Leroy F. Greene School Facilities Act of 1998 (SB 50)

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill No. 50 or SB 50 (Stats. 1998, Ch.407), governs a school district's authority to levy school impact fees. This comprehensive legislation, together with the \$9.2 billion education bond act approved by the voters in November 1998 as "Proposition 1A", reforms methods of school construction financing in California. SB 50 instituted a new school facility program by which school districts can apply for state construction and modernization funds. It imposed limitations on the power of cities and counties to require mitigation of school facilities impacts as a condition of approving new development and provided the authority for school districts to levy fees at three different levels:

Level I fees are the current statutory fees allowed under Education Code 17620. This code section provides the basic authority for school districts to levy a fee against residential and commercial construction for the purpose of funding school construction or reconstruction of facilities. These fees vary by district for residential construction and commercial construction and are increased biannually.

Level II developer fees are outlined in Government Code Section 65995.5, allowing school districts to impose a higher fee on residential construction if certain conditions are met. These conditions include having a substantial percentage of students on multi-track year-round scheduling, having an assumed debt equal to 15-30% of the district's bonding capacity (percentage is based on revenue sources for repayment), having at least 20% of the district's teaching stations housed in relocatable classrooms, and having placed a local bond on the ballot in the past four years which received at least 50% plus one of the votes cast. A Facility Needs Assessment must demonstrate the need for new school facilities for unhoused pupils is attributable to projected enrollment growth from the construction of new residential units over the next 5 years.

Level III developer fees are outlined in Government Code Section 655995.7. If State funding becomes unavailable, this code section authorizes a school district that has been approved to collect Level II fees to collect a higher fee on residential construction. This fee is equal to twice the amount of Level II fees. However, if a district eventually receives State funding, this excess fee may be reimbursed to the developers or subtracted from the amount of state funding.

4.13 PUBLIC SERVICES AND UTILITIES

The Kindergarten-University Public Education Facilities Bond Act of 2002 (Prop 47)

This act was approved by voters in November 2002 and provides for a bond issue of \$13.05 billion to fund necessary education facilities to relieve overcrowding and to repair older schools. Funds will be targeted at areas of greatest need and must be spent according to strict accountability measures. Funds will also be used to upgrade and build new classrooms in the California Community Colleges, the California State University, and the University of California in order to provide adequate higher education facilities to accommodate growing student enrollment.

California Department of Education

The California Department of Education (CDE) School Facilities Planning Division (SFPD) has prepared a School Site Selection and Approval Guide that provides criteria for locating appropriate school sites in the State of California. School site and size recommendations were changed by the CDE in 2000 to reflect various changes in educational conditions, such as lowering of class sizes and use of advanced technology. The expanded use of school buildings and grounds for community and agency joint use and concern for the safety of the students and staff members also influenced the modification of the CDE recommendations.

Specific recommendations for school size are provided in the publication: *School Site Analysis and Development*. This document suggests a ratio of 1:2 between buildings and land. CDE is aware that in a number of cases, primarily in urban settings, smaller sites cannot accommodate this ratio. In such cases, the SFPD may approve an amount of acreage less than the recommended gross site size and building-to-ground ratio.

Certain health and safety requirements for school site selection are governed by state regulations and the policies of the SFPD relating to:

- Proximity to airports, high-voltage power transmission lines, railroads, and major roadways;
- Presence of toxic and hazardous substances;
- Hazardous facilities and hazardous air emissions within one-quarter mile;
- Proximity to high-pressure natural gas lines, propane storage facilities, gasoline lines, pressurized sewer lines, or high-pressure water pipelines;
- Noise;
- Results of geological studies or soil analyses; and
- Traffic and school bus safety issues.

4.13.6.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to public schools would occur if implementation of the proposed project:

- Would result in substantial adverse physical impacts associated with the provision of 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.

METHODOLOGY

Evaluation of potential public school impacts associated with the implementation of the proposed Napa County General Plan Update from consultation with school district staff.

IMPACTS AND MITIGATION MEASURES

Public School Facilities

Impact 4.13.6.1 Land uses and development under the proposed Napa County General Plan Update would increase population and subsequent student enrollment in the County District's schools and may require the construction of new school facilities to serve the increased demand. (Less Than Significant – All Alternatives)

Typical environmental effects as a result of the construction and operation of new school facilities include, air quality (during construction and operation), noise (during construction and operation), biological and cultural resources (depending on location), public services (electric, water and wastewater), and traffic (during construction and operation). Such school development would occur within the development areas evaluated in the technical analysis of this EIR. Because specific locations for public schools have not been identified, site-specific environmental impacts of constructing the facilities cannot be determined at this time. However, it is reasonable to assume that the construction of schools and related facilities would occur in areas designated for urban development or in immediate proximity where the environmental effects of generalized growth have been programmatically evaluated in this DEIR. Additionally, new public school facilities must undergo rigorous site-specific CEQA and California Board of Education evaluation prior to construction to identify and lessen environmental related impacts.

California Government Code Sections 65995 (h) and 65996 (b) provide full and complete school facilities mitigation. Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provision of adequate school facilities and Section 65996 (b) states that the provisions of the Government Code provide full and complete school facilities mitigation. In Napa County, project applicants proposing new building square footage are directed to the applicable school district to pay required fees prior to permit issuance.

Potential public school impacts specific to each alternative is further described below.

Alternative A

Implementation of Alternative A would include slow residential and employment growth with new development occurring only within existing urban areas and result in a population increase of approximately 5,013 people. Given that the growth under this alternative would occur in urbanized areas, the majority of new students would likely attend schools within the NVUSD, SHUSD, CJUSD and HMESD. To meet the anticipated demand, the NVUSD has completed

4.13 PUBLIC SERVICES AND UTILITIES

Canyon Oaks, which is the new elementary school at the corner of American Canyon Road and Flosden Road. The District is also planning a new high school facility at the same location and has indicated that the high school will open within the next ten years. The City of Calistoga is projected to add only 200 additional residents through 2030 and has purchased property on Money Lane to construct a new middle school. However, the District is experiencing a steady decline in student population and has postponed the construction of the facility for at least the next 3 to 5 years. Other planned improvements include several renovations to the existing Calistoga Junior/Senior High School. Additionally, this facility will be converted exclusively to a high school once the proposed middle school has been constructed. The District does not have any other future planned improvements.

As mentioned above, all new public school facilities must undergo rigorous site-specific CEQA and California Board of Education evaluation prior to construction to identify and lessen environmental related impacts. In addition, Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provision of adequate school facilities and Section 65996 (b) states that the provisions of the Government Code provide full and complete school facilities mitigation. School districts in Napa County collect fees during the building permit process based on new building square footage and are entitled to adjust these fees as needed consistent with the Government Code. Thus, this impact would be **less than significant** for Alternative A.

Alternative B

As noted above, Alternative B would involve some land use changes which would allow for additional development and/or redevelopment (e.g., redesignation of Napa Pipe and the Pacific Coast/Boca sites and reuse of County-owned sites in the City of Napa). Implementation of Alternative B would result in up to 9,029 new residents, with the majority of new students would likely attend schools within the NVUSD, SHUSD, CJUSD and HMESD. The planned improvements within these districts are discussed above under Alternative A and would accommodate the growth associated with this alternative. In addition, Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provision of adequate school facilities and Section 65996 (b) states that the provisions of the Government Code provide full and complete school facilities mitigation. School districts in Napa County collect fees during the building permit process based on new building square footage and are entitled to adjust these fees as needed consistent with the Government Code. Thus, this impact would be **less than significant** for Alternative B.

Alternative C

Alternative C would involve some additional land use changes beyond those associated with Alternative B and allow for additional development and/or redevelopment (e.g., establishment of a new Rural-Urban Limit adjacent to the City of American Canyon and expansion of rural/urban areas in the unincorporated community of Angwin in addition to the redesignation of Napa Pipe and the Pacific Coast/Boca sites and reuse of County-owned sites in the City of Napa). The increased density of residential and mixed uses with retail and possible live work units would increase the student population within the NVUSD, SHUSD, CJUSD and HMESD service area boundaries. As indicated, the NVUSD has completed Canyon Oaks, which is the new elementary school at the corner of American Canyon Road and Flosden Road. The District is

also planning a new high school facility at the same location and has indicated that the high school will open within the next ten years. The SHUSD, HMESD, and the PVUESD are anticipated to remain under capacity throughout the horizon of the General Plan Update; therefore, does not have any planned or programmed improvements. In addition, Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provision of adequate school facilities and Section 65996 (b) states that the provisions of the Government Code provide full and complete school facilities mitigation. School districts in Napa County collect fees during the building permit process based on new building square footage and are entitled to adjust these fees as needed consistent with the Government Code. Thus, this impact would be **less than significant** for Alternative C.

Mitigation Measures

None required.

4.13.7 ELECTRICITY AND NATURAL GAS

4.13.7.1 EXISTING SETTING

ELECTRICITY

The majority of electricity in Napa County is produced and delivered by the PG&E. PG&E provides electrical energy to residences and commercial, industrial, mining, agricultural customers as well as transportation, communication, and utility service providers (TCU) throughout the County. There are currently five energy-producing facilities within the County rated at 0.1 megawatt (MW) or greater, including two oil/gas plants, one hydroelectric operation, and one landfill gas facility. There is also an anaerobic digester at the Soscol water treatment facility, which produces methane gas. **Table 4.13.7-1** includes the name, facility type, primary fuel used, and capacity in MWs, the year the facility was brought on-line, and the facility owner/operator.

**TABLE 4.13.7-1
EXISTING ENERGY PRODUCING FACILITIES IN NAPA COUNTY**

	Monticello Dam	American Canyon Powerplant	Napa State Hospital	Pacific Union College	Yountville COGEN	Soscol Water Recycling Facility
Facility Type	Hydroelectric	Waste to energy	Oil/gas	Oil/gas	Oil/gas	Waste to Energy
Primary Fuel	Hydro	Landfill gas	Natural gas	Natural gas	Natural Gas	Methane
Capacity (Mega Watts)	11.9	1.76	1.6	1.38	3.0	.415
Year on-line	1983	1985	1984	2005	1986	2001
Owner	Solano Irrigation District	Gas Recovery Systems Inc.,	Napa State Hospital	Pacific Union College	Yountville Cogen Association	Napa Sanitation District

Source: California Energy Commission, 2005.

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In addition to the facilities producing 0.1 MW or greater, there are several residences and businesses that own and operate smaller electrical generating facilities throughout the County. Various wineries meet their some electrical needs through solar (photovoltaic) and wind powered generation systems. There are currently 119 small-scale, typically residential solar systems between 5 to 20 kilowatt (kW), approved for operation in the County. However, only 83 of the 119 are constructed and in operation (Napa County, BDR 2005).

The current solar generation capacity in the County is 1,867 kW (or 1.8 MW) for systems of 30 kW or greater, which represents less than 1% of the County's peak demand. There are various project underway or proposed which would nearly double the County's current solar capacity. The City of Napa plans to install over an acre of solar panels at the base of the Conn Dam to support operations at the Hennessey Pump Station. When fully operational, these panels are expected to have a peak production capacity of approximately 365 kW. Additionally, Napa Valley College plans to install a solar system, which would have a peak production 1,188 kW. These two systems would provide the County with an additional 1,533 kW of peak solar power generation capacity when fully operational (Napa County, BDR 2005).

Electrical Consumption

Peak electrical demands and consumption are typically higher during the hot and dry summer months. Electrical consumption is based on the conversion of kilo-watt/hours converted to British thermal units (BTUs) and barrel of oil equivalent (BOE). BOE conversions are based on the weight of a barrel of oil being 0.136 tons making 1 BOE equal to 5,396,745 (BTUs). Residential consumption peaked in 2000 and again in 2003; when the County's residences consumed 207.6 and 224.3 BOEs, respectively. However, even during these peak consumption periods, the residential sector accounted for 38% (2002) and 43% (2003), which shows that residential electrical consumption in the County has actually decreased since 1990, when residential consumption accounted for 46% of total demand. This equates to approximately a 1% decrease in residential electrical demand annually (Napa County, BDR 2005).

The electrical demand from the County's commercial sector has remained relatively constant over the same time period (1990-2003), where it ranged from between 31% to 33% of the County's total demand. Commercial peak demand also occurred in 2003, with a demand of 171.5 BOEs, which was actually a 41% increase over 1990 (121.3 BOEs); however, commercial electrical demand in the County has remained fairly constant, representing approximately 32% of the County's overall demand annually (Napa County, BDR 2005).

The County's industrial sector accounted for 15% to 17% of the County's overall electrical demands between 1990 and 2003. Industrial consumption peaked in 1999 at 89.5 BOEs; however, has actually decreased to 83.5 thousand BOEs since 1999, representing approximately 16% of the County's overall electrical demand (Napa County, BDR 2005).

The County's mining sector represented 0.5% of the County's total in 1990 but increased to over 9% by 1997, mainly because of the operations at the McLaughlin Gold Mine. Mining operations increased demand from 1.8 BOEs in 1990 to over 45.1 BOEs, or a 2700% increase. However, since the cessation of the McLaughlin operations, industrial electrical demands have returned to pre-1997 levels and in 2003, accounting for 0.3% (or 1.8 thousand BOE) of the County's total electrical energy demand (Napa County, BDR 2005).

The transportation, communications, and utilities (TCU) sector, agriculture, and water pumping activities in the County accounted for a relatively small portion of the County's overall electrical demand between 1990 and 2000 and have remained constant since 2000. The TCU sector

accounted for 2.5% of County's total electrical consumption in 1990 but increased to 4.5% in 2000. Between 1990 and 2000, the TCU sector electrical demand increased from 9.8 BOE to 24.5 thousand BOE (a 150% increase). However, since 2000, the TCU demands have leveled off and represent approximately 4.8 percent of the County's total demand (or 24.4 thousand BOEs). (Napa County, BDR 2005).

Electrical Transmission

There are three major transmission corridors in the County. There are two 110-161 kV lines and two 220-287 kV lines on the same transmission route that pass from east to west through the City of American County, along the southern border of the County near Mare Island. There are two 220-287 kV lines that cross through the County just south of the City of Napa and two 110-161 kV lines that pass from west to east through the City of St. Helena, along the northern edge of Lake Hennessey. There is also a 110-161 kV lines that run northwest from Sonoma County to the cities of Napa and St. Helena before heading westward and back into Sonoma County. There are also a 60-92 KV lines that continues northward from the City of St. Helena through the City of Calistoga and onwards to Lake County. There is a 220-287 kV transmission line that runs northwest from the Homestake Substation (discussed below), which is located near the County's northern border.

There are nine electrical substations in the County owned by PG&E and two substations owned by other utilities. PG&E facilities include the Highway, Tulocay, Basalt, Napa, Pueblo, Silverado, St. Helena, Monticello, and Calistoga Substations. The Cordelia Interim Pumps and Homestake Substations are owned and operated by private utility companies.

Transmission Capacity

The normal capacity for Napa County is estimated at 390 mega volt-amperes (MVA). Under a worst-case scenario or emergency conditions (emergency) the County's transmission capacity could be reduced to 270 MVA. Emergency conditions are typically defined when electric loads or serving capacity is reduced. The Pueblo Substation has adequate capacity to meet current demands; however, the voltage device will provide additional capacity and flexibility during emergency conditions (Napa County, BDR 2005).

Electrical Production versus Consumption

Napa County consumes more energy than it produces. As indicated in **Table 4.13.7-1**, there are five energy-producing facilities with a capacity of 0.1 MW or greater and one cogeneration facility with a capacity of 412 kW. Also, as previously indicated, there are a number of smaller solar facilities with an additional 1,867 MW of capacity. Together these facilities have a combined capacity of 21.92 MW. The County's peak demand in 2004 was 235 MW, leaving a shortfall of approximately 212.87 MW between production capacity and demand. The smaller facilities (i.e., winery and other private systems) are not considered significant enough to contribute the County's overall capacity.

NATURAL GAS

Natural Gas Consumption

Napa County does not have a natural gas producing facility and must purchase and import all natural gas consumed in the County. Natural gas consumption in Napa County has varied by as much as 25% over the past 13 years. Between 1990 and 2003 natural gas consumption has

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outpaced that of electrical energy consumption; however, has remained fairly constant since 1990. Napa County natural gas consumption peaked in 1999 at 724.28 thousand BOE but decreased by 12% by 2003, primarily due to a reduction in residential natural gas demand. Natural gas consumption in other sectors (i.e., commercial and industrial users) also showed slight decreases since 1999. Napa County consumed an average of 5.04 BOE for all sectors in 2003.

Interesting to note that residential natural gas consumption has not kept pace with the population growth in the County since 1990 and has actually dropped by approximately 1.2% annually since peak consumption in 1999. Residences consume more natural gas than any other land use in the County and accounted for between 57.7% and 67.3% of the countywide total between 1990 and 2003. In 2003, County residences consumed 388.21 BOE or 58.5% of all natural gas consumption. Although the County's population increased by 18% between 1990 and 2003, the overall percentage of natural gas consumption decreased from 1990 levels when residences consumed 397.9 BOE (compared to 388.21 BOE consumed in 2003). Residential Per Capita use of natural gas has also dropped nearly 17% (1.2% per year) during the same time period from 3.6 BOE in 1990 to 2.95 BOE in 2003 (Napa County, BDR 2005).

The County's commercial sector consumes the second largest amount of natural gas, accounting for an average of between 24.5% and 31% of all natural gas consumption between 1990 and 2003. The most recent data indicates that the County's commercial sector consumed 185.77 BOE in 2003, or 28% of the total natural gas consumption. Napa County industries consumed 8% to 14% of the County's total consumption between 1990 and 2003 with 85.58 BOE consumed (13% of the County's total) in 2003. TCU, mining, and agriculture sectors consumed less than 1% of total natural gas consumption over the same time period (Napa County, BDR 2005).

Natural Gas Transmission

As previously indicated, there are no natural gas production facilities in Napa County. The primary natural gas transmission pipelines are generally located in the southern and western portions of the County and consist of two 12-inch diameter pipelines that run northwest through the Napa Valley. These pipelines provide the bulk of natural gas for the cities of Napa, Yountville, St. Helena, and Calistoga. These pipelines connect with various larger pipelines (up to 32-inches in diameter), which cross from east to west through Carneros County, the Napa River Marshes, and the Jamison/American Canyon areas. The Napa natural gas metering station is at the convergence/connection point of the 12-inch diameter and larger pipelines. PG&E natural gas facilities are designed to accommodate an abnormal peak day (APD), which are days expected to occur once every 90 years on average. An APD equates to a 29.8-degree average daily temperature in Napa County. The expected APD was in 2004 with a peak hour demand of 2,190 cubic feet per hour. Based on consideration of historical growth in Napa County, there are no foreseen natural gas transmission capacity constraints and no natural gas system upgrades are planned or required through 2010, including pipelines or other conveyance facilities. (Napa County, BDR 2005),

Vehicle Energy Consumption

Napa County's gasoline and diesel vehicle energy consumption has generally increased annually since 1993. **Table 4.13.7-2** illustrates the County's gasoline consumption in millions of gallons and per capita use between 1993 and 2003.

**TABLE 4.13.7-2
NAPA COUNTY VEHICLE ENERGY CONSUMPTION GASOLINE (1993-2003)**

Year	Gasoline (millions gallons)	Per Capita (gallons)
1993	48.77	423.92
1994	49.18	423.68
1995	48.15	412.64
1996	49.38	418.51
1997	50.97	425.41
1998	52.94	435.39
1999	55.79	453.47
2000	57.37	461.65
2001	58.90	461.09
2002	60.57	465.93
2003	61.94	470.09

Source: U.S. Census Bureau, 2002.

As indicated in **Table 4.13.7-2**, gasoline consumption in the County decreased in 1995, which represented the lowest consumption rate over the eleven-year period between 1993 and 2005. While diesel energy consumption in Napa County has generally increased since 1997, it has steadily been decreasing since peak consumption in 2000. **Table 4.13.7-3** illustrates the County's diesel consumption in millions of gallons and per capita diesel use.

**TABLE 4.13.7-3
NAPA COUNTY VEHICLE ENERGY CONSUMPTION DIESEL (1997-2003)**

Year	Diesel (millions gallons)	Per Capita (gallons)
1997	2.81	23.41
1998	2.96	23.34
1999	3.46	28.08
2000	4.76	38.30
2001	4.68	36.65
2002	4.39	33.76
2003	4.21	31.98

Source: U.S. Census Bureau, 2002.

As indicated in **Table 4.13.7-3**, the County's diesel has generally increased since 1997 and peaked in 2000. However, diesel consumption in both gallons consumed and per capita use in the County has steadily decreased since 2000. Even during the peak consumption year (2000), Napa County's per capita use of 38.30 gallons was well below the state's annual average of 77.73 gallons per capita.

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4.13.7.2 REGULATORY FRAMEWORK

STATE

California Building Energy Efficiency Standards

Title 24, Part 6 of the California Code of Regulations, known as the Building Energy Efficiency Standards, 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. After adoption of the California Energy Security and Reliability Act of 2000 (AB 970), the California Energy Commission produced changes to the Building Energy Efficiency Standards. In November 2003 the California Energy Commission adopted these updated standards. The California Building Standards Commission adopted the 2005 changes in July 2003 and the updated standards took effect on October 1, 2005. Included in the update were requirements identified under Senate Bill 5X, part of which requires the California Energy Commission to adopt energy efficiency standards for outdoor lighting.

4.13.7.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to public schools would occur if implementation of the proposed project:

- Would result in substantial adverse physical impacts associated with the provision of new or physically altered facilities, the construction of which could cause significant environmental impacts for any public electrical or natural gas service providers or would result in inefficient, wasteful and unnecessary consumption of energy (based on State CEQA Guidelines Appendix F).

METHODOLOGY

This analysis is based on population and census data from ABAG, U.S Census 2000 data, and consultation with California Energy Commission (CEC) and the Napa County Background Data Report.

IMPACTS AND MITIGATION MEASURES

Provision of Electric and Natural Gas Resources

Impact 4.13.7.1 Land uses and development under the proposed Napa County General Plan Update would increase energy use and the demand for electrical and natural gas facilities and related infrastructure. (Less Than Significant – All Alternatives)

The County's providers have sufficient electrical transmission capacity and natural gas resources to accommodate the demand associated the proposed General Plan Update through 2010 for each of the three alternatives. The latest California Independent System Operator (Cal-ISO) approved Grid Expansion Plan for PG&E's service territory, which identifies projects to increase the existing capacity, indicates that no new facilities are required over the next five years to accommodate the County's anticipated demand. However, additional electrical transmission

capacity would be required to meet the County's demand between 2011 and 2015. Additional transmission capacity would be needed at the Tulocay Substation by 2015, which would accommodate the increased demand and capacity shortfall. To accommodate the projected demand, PG&E is currently working on the Tulocay 230/60 kV Transformer Project and the Pueblo Voltage Support Project. The Tulocay Transformer Project is anticipated for completion by 2007 and will include a redundant Tulocay transformer to improve reliability and reduce customer outages within the radial system. The Pueblo Voltage Support Project was completed in July 2005, which included the installation of an 8 MVA voltage device at the Pueblo Substation. The Pueblo Substation has adequate capacity to meet current demands; however, the voltage device will provide additional capacity and flexibility during emergency conditions (Jones and Stokes/EDAW, 2005). The environmental effects of obtaining more power, developing new power plants, or constructing new electrical and natural gas transmission lines and generation infrastructure to accommodate future growth could include air quality, biological resources, cultural resources (depending on location), hazardous materials, land use, noise and vibration, traffic, visual resources, soil related impacts, and human health and safety hazards, which would be evaluated in further detail for each specific energy-related project. This DEIR programmatically considers the environmental effects of potential infrastructure improvements within the County as part of growth anticipated by year 2030

Subsequent development under the each of the alternatives would be required to comply with recently adopted changes to Title 24 of the California Code of Regulations regarding energy efficiency that were effective in September 2005. These new energy efficiency standards were developed in response to the state's energy crisis as well as AB 970 and SB 5X in regards to improving residential and nonresidential building energy efficiency, minimizing impacts to peak energy usage periods and to reduce impacts on overall state energy needs. Natural gas and electrical consumption would increase under all alternative scenarios, which are measured in barrel of oil equivalents (BOEs) for all sectors (i.e., residential, commercial, industrial, etc.). The County's per capita natural gas consumption since 1995 has average approximately 5.22 BOEs per capita and the County's electrical consumption for all sectors since 1995 has been 4.02 BOEs per capita.

As further described below by alternative, the proposed General Plan Update would retain existing land use patterns of the County that emphasize the concentration of new urban and rural development into and adjacent to existing cities and unincorporated communities where services exist and thus reducing energy and resource usage from new growth (as opposed to substantial expansion of urban areas). However, it is acknowledged that vehicle miles traveled are anticipated to increase in the County by the year 2030 and that such growth (while efficient) would contribute to environmental effects including climate change. The reader is referred to Section 4.8 (Air Quality) for further discussion regarding potential impacts associated with climate change.

Potential energy impacts specific to each alternative is further described below.

Alternative A

Implementation of Alternative A would result in an increased demand of approximately 26.16 BOEs of natural gas and other gas sources (e.g., propane) and require approximately 20.15 BOEs of electrical service by year 2030. New growth under Alternative A would largely occur in urbanized areas; therefore, any new or expanded natural gas and electrical infrastructure would be placed underground, and when feasible, co-located with other utilities in trenches. In addition, this growth pattern would emphasize the concentration of new urban and rural development into and adjacent to existing cities and unincorporated communities where

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services exist and thus reducing energy and resource usage from new growth (as opposed to substantial expansion of urban areas). County Code Chapter 13.60 requires that all utilities be constructed in public and roadway rights of way to reduce visual and aesthetic impacts and potential safety hazards. The electrical system improvements discussed above would provide adequate transmission capacity to accommodate the increased demand and anticipated capacity shortfall. Additionally, the environmental review of providing new or expanded electrical and natural gas services is handled on a case-by-case basis in conjunction with individual development projects or infrastructure expansion projects (though this DEIR programmatically considers the environmental effects of infrastructure improvements within the County as part of growth anticipated by year 2030). No specific infrastructure improvements have been identified by service providers that would be necessitated by the implementation of Alternative A; therefore, **less than significant** impacts would result.

Alternative B

Alternative B would involve some land use changes which would allow for additional development and/or redevelopment (e.g., redesignation of Napa Pipe and the Pacific Coast/Boca sites and reuse of County-owned sites in the City of Napa). Implementation of Alternative B would result in up to 9,029 new residents Alternative B would require approximately 47.13 BOEs of natural gas and other gas sources (e.g., propane) and require approximately 36.29 BOEs of electrical service by the year 2030. This growth pattern would emphasize the concentration and densification (e.g., Napa Pipe, Pacific Coast/Boca and County-owned sites) of new urban and rural development into and adjacent to existing cities and unincorporated communities where services exist and thus reducing energy and resource usage from new growth (as opposed to substantial expansion of urban areas). Compliance with County Code requirements and the improvements discussed above would ensure adequate electrical natural gas and electrical service to implement this alternative and given that no site-specific or other specific infrastructure improvements have been identified by service providers that would be necessitated by the implementation of this alternative, **less than significant** impacts are anticipated.

Alternative C

Alternative C would involve some additional land use changes beyond those associated with Alternative B and allow for additional development and/or redevelopment (e.g., establishment of a new Rural-Urban Limit adjacent to the City of American Canyon and expansion of rural/urban areas in the unincorporated community of Angwin in addition to the redesignation of Napa Pipe and the Pacific Coast/Boca sites). The increased density of residential and mixed uses with retail would require an additional 94.28 BOEs of natural gas and other gas sources (e.g., propane) and would increase electrical consumption by approximately 72.61 BOEs by the year 2030. This growth pattern would emphasize the concentration and densification (e.g., Napa Pipe, Pacific Coast/Boca and County-owned sites) of new urban and rural development into and adjacent to existing cities and unincorporated communities where services exist and thus reducing energy and resource usage from new growth (as opposed to substantial expansion of urban areas). Compliance with County Code requirements and the improvements discussed above would ensure adequate electrical natural gas and electrical service to implement this alternative and given that no site-specific or other specific infrastructure improvements have been identified by service providers that would be necessitated by the implementation of this alternative, **less than significant** impacts are anticipated.

Mitigation Measures

None required.

4.13.8 SOCIAL SERVICES

4.13.8.1 EXISTING SETTING

There are several agencies in Napa County providing social services including Public Assistance, Cal-Works, Child Protective Services (CPS), Adult Protective Services (APS), In-Home Support Services, and Veteran Services. **Table 4.13.8-1** illustrates the service area, facilities, capacity, existing demand, planned improvements, and service standards for each social service provider in Napa County.

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**TABLE 4.13.8-1
NAPA COUNTY SOCIAL SERVICES**

Social Service	Public Assistance ¹	Cal-Works ²	Child Protective Services ³	Adult Protective Services ⁴	In-Home Supportive Services ⁴	Veteran's Services ⁴
Service Area	Napa County	Napa County	Napa County	Napa County	Napa County	Napa County
Facilities	2261 Elm Street, Building K, Napa	650 Imperial Way, Napa	2344 Old Sonoma Road, Napa	900 Coombs Street, Napa	900 Coombs Street, Napa	900 Coombs Street, Napa
Capacity	Currently staff is sufficient; however, during times of vacancies it is a challenge to maintain performance levels.	Under the projected staffing ratio (have regular vacancies).	Currently understaffed.	Currently staff is sufficient.	Currently staff is sufficient.	Currently staff is sufficient.
Existing Demand	3,262 open Food Stamp/Medi Cal cases with 269 pending in the Public Assistance Division. 258 open Foster Care cases with 4 cases pending.	617 existing cases	1,496 referrals in 2003	350 referrals in 2003	523 open cases as of May2004	450 referrals in 2003
Planned Improvements	To offer the Express Lane Eligibility Program to the Calistoga School District as requested.	Start a pre-employment workshop program by September 2004.	Long-term statewide effort to reform CPS over the next 5-10 years including focus on prevention and an outcome based system.	None.	Creating a supervisory position.	None.
Service Standards	Adhere to rules and regulations set forth by the state for each program. Each program has a separate manual. Agency procedures manual defines County policy and instructions for each program.	Includes general assistance and Tribal temporary aid for needy families. Follows Federal Department of Social Services Division 40 manual and the state Laws in Welfare and Institutions Code.	Follows the Federal Department of Social Services Division 31 manual, and the state Laws in Welfare and Institutions Code.	Follows the State Department of Social Services Division 33 Regulation and the state Laws in Welfare and Institutions Code.	Follows the State Department of Social Services Division 30 Regulation, the Welfare Institutions Code and the Code of Federal Regulations.	Follows the California Military and Veterans Code.

¹ Washburn 2004

² Bryan 2004

³ Schultz 2004

⁴ Casteller 2004

4.13.8.3 IMPACTS AND MITIGATION MEASURES

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines (2005) Appendix G. A significant impact to public schools would occur if implementation of the proposed project:

- Would result in substantial adverse physical impacts associated with the provision of new or physically altered 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 social service providers.

METHODOLOGY

Preparation of this analysis was based on information contained in the Napa County BDR and consultation with social service provider staff members.

IMPACTS AND MITIGATION MEASURES

Impact 4.13.8.1 Land uses and development under the proposed Napa County General Plan Update would increase the demand for the social services. (Less Than Significant – All Alternatives)

Continued growth in the unincorporated area of the County under the General Plan Update (all alternatives) would increase the demand for social services identified in **Table 4.13.8-1**. As indicated in **Table 4.13.8-1**, Cal-Works and CPS would need to add additional staff members to meet any increase in demand, as these departments are currently understaffed. The only planned improvement that has the potential to result in physical impacts is the County's Public Assistance Program, which plans to add an express lane; however, this improvement would occur at the existing facility and little or no impacts on the physical environment are anticipated. Other improvements are administrative in nature and include, but are not limited to, establishing an Eligibility Program for the Calistoga School District, the creation of a supervisory position for the In-Home Services Department and the long-term state-wide effort to reform CPS over the next 5-10 years including focus on prevention and an outcome based system.

Potential social service impacts specific to each alternative is further described below.

Alternative A

Implementation of Alternative A would increase the County's population by approximately 5,013 people with growth occurring only within existing urban areas. As identified above, a limited amount of improvements required to accommodate future growth that are not expected to result in adverse physical impacts to the environment. Thus, Alternative A's impact would be **less than significant**.

Alternative B

Alternative B would involve some land use changes which would allow for additional development and/or redevelopment (e.g., redesignation of Napa Pipe and the Pacific Coast/Boca sites and reuse of County-owned sites in the City of Napa). Implementation of Alternative B would result in up to 9,029 new residents. As identified above, a limited amount of

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improvements required to accommodate future growth that are not expected to result in adverse physical impacts to the environment. Thus, Alternative B's impact would be **less than significant**.

Alternative C

Alternative C would include all the same changes as Alternative B, but would also include General Plan and zoning changes (e.g., establishment of a new Rural-Urban Limit adjacent to the City of American Canyon and expansion of urban/rural areas in the unincorporated community of Angwin) to allow for additional housing. This Alternative could result in up to 18,063 new residents. As identified above, a limited amount of improvements required to accommodate future growth that are not expected to result in adverse physical impacts to the environment. Thus, Alternative C's impact would be **less than significant**.

Mitigation Measures

None required.

4.13.9 PARKS AND RECREATION

4.13.9.1 EXISTING SETTING

In 2005, nearly 80% of the County's population lived in urbanized areas, which was a direct result of the policy of focusing growth around the County's incorporated communities. The County population was 134,100 in 2005 and is anticipated to reach 153,400 residents by 2030, an increase of 19,300 persons. This includes the unincorporated portions of the as well as the cities and communities of American Canyon, Calistoga, Napa, St. Helena and Yountville. There are approximately 507,000 acres in Napa County, with nearly 450,000 acres or eighty-nine percent, consisting of private and public open space.

Open space are lands which are primarily either undeveloped or developed only with improvements which are necessary for the preservation of natural resources and the provision of recreational activities. The term "open space" as used in Napa County is not associated with a single land use. Napa County considers open space as those lands, which support an array of activities and amenities, both measurable and intangible and is not limited to recreational uses. The majority of the open space, 337,000 acres is under private ownership and is used for a variety of activities. Farming and grazing represent one-third of the private activities with the remainder used as rural residences, hunting, fishing, biking and other privately sponsored events. Approximately 14,400 acres or four-percent of the privately held open space lands are protected through permanent conservation easements.

The majority of public open space or dedicated open space is concentrated primarily in the eastern portion of the County and although some distance for many residents, these lands are available for public use and enjoyment. However, the access, signage and trail designations at some of these facilities are not well marked and in some instances, not present. Dedicated open space includes publicly held lands, which are perpetually dedicated for open space purposes. It is important to note that private open space dedication is possible only through easements, which include public beneficiary and non-profit operating restrictions. The Federal government, which includes the Bureau of Land Management and the Bureau of Reclamation, is the largest public landholder in the County, overseeing nearly 63,000 acres. Lake Berryessa and the surrounding area are under the jurisdiction of the Bureau of Reclamation.

The State of California controls the second most open space of any public agency in the County. The Department of Fish and Game oversees the largest amount of State held land and manages the wetland preserves near the mouth of the Napa River and the Oak woodlands and grasslands north of Lake Berryessa. Preserves are dedicated open space whose primary purpose is the preservation of native plants and wildlife, significant landscape features, and valuable natural resources. The California Department of Parks and Recreation also operates and maintains the Robert Louis Stevenson State Park and Bothe-Napa State Park. Various other state agencies (i.e., Veterans Affairs, University of California, and the Department of Mental Health) own and maintain smaller open space areas throughout the County. The City of Napa and the City of Vallejo own and operate water supply reservoirs in the County and the City of American Canyon owns and operates Newell Ranch.

The largest expanse of accessible public open space within close proximity to where most of the County residents live is south of the City of Napa in the Napa-Sonoma marshes and Napa River floodplain, which is owned and managed by the Department of Fish and Game. The area is used primarily for habitat purposes but is open to the public for various hunting activities and fishing. The Bothe-Napa State Park, the Robert Louis Stevenson State Park and Bale Grist Mill encompass important public open space areas in the north end of the Napa Valley. These facilities offer camping, trails to the top of Mt. St. Helena and through portions of the palisades near Calistoga.

Skyline Park is an 850-acre open space regional park that is owned by the state but operated and maintained by a non-profit organization through a lease by Napa County. The park offers several activities including, but not limited to, camping, RV amenities, and miles of hiking, mountain biking and equestrian trails, an archery range, and a native plant garden.

TYPES OF PARKS

The following are dedicated open space areas available for public use and recreational purposes in Napa County. Neighborhood Parks are small, usually less than 5 acres in size, within easy walking distance of primary users. These facilities provide urban recreational opportunities; however, are typically focused on young children and families. Community parks are typically 10 to 40 acres in size in urban settings and typically focus on larger activities and sporting events. Community parks are usually greater than 50 acres, serving local residents as well as visitors from other communities. Regional parks typically include significant natural features and are primarily focused on providing nature-based recreation activities.

TYPES OF RECREATION

By far the most popular recreational activities are walking for fitness and fun, walking pets, sightseeing and wildlife viewing followed by bicycling, swimming and picnicking (California Department of Parks and Recreation, 2002). Recreation is defined as any activity undertaken voluntarily and without compensation, which renews ones health and spirit. Urban recreation includes recreation involving highly developed parks and recreational facilities (i.e., sports fields, running tracks, swimming pools, etc.). Nature-based recreation involves recreational activities that take place in and around and are focused on the natural environment, including but not limited to, hiking, equestrian and mountain bike riding, and swimming in rivers and lakes. Commercial recreation opportunities are those activities that are provided by for-profit businesses or corporations, excluding recreational activities provided under contract or a concession agreement with a public agency. Motorized recreation includes any recreational activities involving a motor or an engine.

4.13 PUBLIC SERVICES AND UTILITIES

4.13.9.2 REGULATORY FRAMEWORK

STATE

The Quimby Act (California Government Code Section 66477) states that “the legislative body of a city or county may, by ordinance, require the dedication of land or impose a requirement of the payment of fees in lieu thereof, or a combination of both, for park or recreational purposes as a condition to the approval of a tentative or parcel map. It should be noted that the Quimby Act only applies to the acquisition of new parkland and does not apply to the physical development of new park facilities or associated operations and maintenance costs. The Quimby Act effectively preserves open space needed to develop parkland and recreational facilities; however, the actual development of parks and other recreational facilities is subject to discretionary approval and is evaluated on a case-by-case basis with new residential development.

LOCAL

Napa County Park and Open Space Advisory Committee

A Napa County Parks & Open Space Advisory Committee was created to determine the vision, structure, and goals of the County’s future parks organization. The mission of the Parks & Open Space Advisory Committee was to:

- Return to the Board of Supervisors with recommendations on allocating approximately \$1 million in State Proposition 40 parks bond funds; and
- Study, hold hearings, and provide recommendations to the Board regarding information of a permanent County parks and open space agency.

The Advisory Committee has now dissolved with the creation of the Napa County Park and Open Space District.

STANDARDS OF SIGNIFICANCE

The following standards are based on State CEQA Guidelines Appendix G. A significant impact to recreational facilities would occur if implementation of the proposed General Plan would result in the following:

- 1) Increase the demand for recreational opportunities and facilities that result in the need to construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

DEIR sections 4.1 through 4.14 evaluate the environmental effects of proposed General Plan Update Recreation and Open Space Element policy provisions associated with recreation and trail facilities.

METHODOLOGY

Preparation of this section was based on consultation with County Staff, the existing General Plan and related polices, and information.

IMPACTS AND MITIGATION MEASURES

Increased Demand for Park and Recreational Facilities

Impact 4.13.9.1 Land uses and development under the proposed Napa County General Plan Update would increase population that result in an increase in the demand for recreational opportunities and facilities. (Significant and Mitigable – All Alternatives)

As noted above, approximately 80 percent of the County's total population lives in incorporated cities that maintain urban park facilities, while recreation opportunities in the unincorporated area of the County consists of largely outdoor passive recreation (e.g., hiking, picnicking, mountain biking, equestrian, wildlife viewing, camping and recreation opportunities at Lake Berryessa). There is currently 5,456 acres of dedicated open space areas that are open to public access within 15 minutes of the County's cities. In addition, the County currently has 76 miles of completed, maintained and publicly accessible non-motorized trails, 25 miles of public off-highway vehicle dirt roads and trails and proposals for nearly 200 miles of non-motorized trails (e.g., incomplete segments of the San Francisco Bay Trail and the Bay Ridge Trail).

Growth under the proposed General Plan Update (under all alternatives) would increase the demand for recreation opportunities and facilities. Potential recreation impacts specific to each alternative is further described below.

Alternative A

Implementation of Alternative A would increase the County's population by approximately 5,013 people by the year 2030. This increase in population would add to the demand for recreation opportunities in the County. This impact would be **significant and mitigable** with the implementation of the mitigation measures identified below.

Alternative B

Implementation of Alternative B would result in 9,029 new residents by year 2030. As noted in Section 3.0 (Project Description), this alternative includes the re-use of County-owned sites within the City of Napa that would generate up to 617 persons that would increase the demand of City recreation facilities. This increase in population would add to the demand for recreation opportunities in the County. This impact would be **significant and mitigable** with the implementation of the mitigation measures identified below.

Alternative C

This Alternative could result in up to 18,063 new residents by the year 2030. As noted in Section 3.0 (Project Description), this alternative includes the re-use of County-owned sites within the City of Napa that would generate up to 1,234 persons that would increase the demand of City recreation facilities. This increase in population would add to the demand for recreation opportunities in the County. This impact would be **significant and mitigable** with the implementation of the mitigation measures identified below.

Mitigation Measures

The following mitigation measures would apply to all three alternatives.

4.13 PUBLIC SERVICES AND UTILITIES

- MM 4.13.9.1a** The County shall include a policy in the General Plan that increases (by the year 2030) the amount of dedicated open space available, improved and managed for nature-based recreation by the general public by improving access to existing public lands and by selective public acquisition from willing landowners of fee title ownership, easements, and/or license agreements over high priority open space lands.
- MM 4.13.9.1b** The County shall include a policy in the General Plan that increases (by the year 2030) the number and length of non-motorized, off-street trails available for walkers, joggers, bicyclists and equestrians. This will include provisions for the completion of the San Francisco Bay Trail through the County and sections of the Bay Area Ridge Trail.
- MM 4.13.9.1c** The County shall include a policy in the General Plan that (by the year 2030) that ensures that the majority of Napa County residents live within close proximity of parks offering a variety of nature-based recreation opportunities by at least doubling the acreage of publicly accessible open space within a 15-minute driving time of each of the county's four cities and one town.

The following mitigation measure would apply to Alternatives B and C.

- MM 4.13.9.1e** The County shall include a policy in the General Plan that requires the development of recreation facilities and/or participation in the funding of planned recreation facilities (e.g., parkland dedication fees) for anticipated multifamily development in the unincorporated community of Angwin and at the Napa Pipe, Pacific Coast/Boca sites and County-owned sites within the City of Napa.

Implementation of the above mitigation measures would ensure that recreational facilities are provided to meet demand of growth under the proposed General Plan Update and would result in a **less than significant** impact for Alternatives A, B and C. The environmental effects of the provision of publicly accessible open space and trail expansion within the County has been programmatically evaluated in the sections 4.1 through 4.14 of this DEIR.

REFERENCES

- Jones & Stokes/EDAW, Inc. 2005. *Napa County Baseline Data Report, Version I*. November. Oakland, CA.
- Napa County. *Emergency Operations Plan*. Napa County, 2001.
- Napa County. *Napa County General Plan*. Napa County, 1983.
- Napa County Department of Emergency Services. *Personal Conversation with Neil O'Hare and Patti Deweese*. April 18, 2006.
- Napa County Fire Department. *Personal conversation with Gabriel Avina*. April 17, 2006.
- Napa Flood and Water Conservation District Website. Available at: <http://www.napaflooddistrict.org/>
- Napa County Sanitation District Website. Available at: <http://www.napasanitiationdistrict.com/>
- Napa County Sheriff's Department. *Personal conversation with Sgt. Matt Talbot*. April 17, 2006.
- Napa County Sheriff's Department. *Personal conversation with Michael Loughran*. April 14, 2006.