LOCAL AGENCY FORMATION COMMISSION OF NAPA COUNTY

COMPREHENSIVE WATER SERVICE STUDY
MUNICIPAL SERVICE REVIEW

Final Report
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INTRODUCTION

On January 1, 2001, the Cortese-Knox-Hertzberg Local Government Reorganization Act became the governing law of LAFCOs. One change brought by this Act was the creation of a new LAFCO function, the service review. California Government Code §56430 states that prior to any review or update of a sphere of influence, the Commission shall conduct a service review – a comprehensive evaluation of the ability of the agency to provide service within its existing jurisdiction and within its sphere. Government Code §56425(f) states that the Commission shall update all spheres every five years, meaning that the Commission must also conduct service reviews on a five year cycle. Each of the 58 LAFCOs may adopt their own approach to fulfilling the service review and sphere update requirements.

To fulfill these responsibilities, LAFCO of Napa County adopted a schedule for service reviews and sphere updates to begin in late 2001 and end in late 2005. In developing this schedule, the Commission determined that the complex assignment before it must be accomplished through a series of studies. Some of these studies are designed to conduct an analysis of one type of service across many agencies and/or areas in Napa County, while other studies focus on the breadth of services offered by one agency. Overlap is an inherent component of this approach – any given agency may be evaluated in the context of several studies. As a result, there is the possibility that reports later in the schedule will give rise to reconsideration of conclusions drawn in an earlier study. In addition, this approach means that LAFCO will not fully meet its statutory obligations until the completion of its adopted schedule. When the schedule is completed, the Commission will evaluate the need for future studies and develop a schedule for the 2006-2010 cycle.

LAFCO of Napa County's *Comprehensive Water Service Study* is a countywide service review of all forms of publicly provided water service in Napa County. The objective of the study is to evaluate service in terms of present and future capacities along with identifying the relevant issues surrounding the supply and demand of water for each of the 13 local agencies included in the report. The report includes study sections for each agency. These study sections provide an overview of each agency's development and an outline of their water systems and services. This includes evaluating each agency's supply, treatment, storage, and distribution systems. Each study section also includes written determinations, which were adopted by the Commission and address nine specific service factors enumerated in Government Code §56430. These service factors are:

1. Infrastructure needs or deficiencies.
2. Growth and population projections for the affected areas.
3. Financing constraints and opportunities.
4. Cost avoidance opportunities.
5. Opportunities for rate restructuring.
6. Opportunities for shared facilities.
7. Government structure options.
8. Evaluation of management efficiencies.
9. Local accountability and governance.

The *Comprehensive Water Service Study* was prepared in two phases. "Phase One" involved the development of study sections for each agency. This phase culminated in a draft report, which was circulated for agency and public review and presented to the Commission at a public workshop on June 12, 2003. "Phase Two" involved the development of written determinations, which were subject to a public review process prior to their adoption by the Commission. This report codifies both phases.

Additional Components:

In addition to reviewing the services of the 13 public agencies in Napa County included in this report, LAFCO has included a summary review of the State Water Project and groundwater in Appendices A and B. These appendices were prepared in 2003 as part of the Public Workshop Report and have been included in this report to provide additional information concerning important water sources for Napa County. Supplemental staff reports are also included in Appendices C, D, and E, respectively. These supplemental staff reports were prepared during the course of the study and provide information on private water service, water rates, and visitor services at Lake Berryessa.

CIRCLE OAKS COUNTY WATER DISTRICT

OVERVIEW

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. The District's formation was sought by landowners to help facilitate the development of a 2,200-lot community to be known as "Circle Oaks." In 1964, the Napa County Board of Supervisors approved a subdivision map submitted by the Circle Oaks Sales Company, Inc. resulting in the creation of 331 quarter-acre circular lots. That same year, general obligation bonds were issued to finance the construction of water and sewer facilities for the first phase of Circle Oaks, referred to as "Unit One."

At the time of its formation, COCWD anticipated supporting development within Circle Oaks with water drawn from a variety of sources. An engineering firm was hired to clean a local spring and develop wells for use at Unit One. The District intended to eventually supplement these sources with surface water captured from Cappell Creek. To this end, the District authorized design plans for the construction of a 1,100 acre-foot reservoir for consideration by the California Division of Dam Safety along with seeking an appropriative water right to Cappell Creek. Further, the District anticipated that once demand generating from development within the remaining planned phases of Circle Oaks required additional supplies, an intake and transmission line would be constructed to convey water from Lake Berryessa. Due to financing constraints, however, plans to dam Cappell Creek were discarded while the development of a transmission line to Lake Berryessa was abandoned as development in the remaining phases of Circle Oaks failed to materialize.

Over the next twenty years, development within Unit One was tempered due to a change in market demand along with unstable soil conditions, which resulted in the elimination of several lots and roadways within the subdivision.[1] In 1984, the District's jurisdictional boundary was significantly reduced following the detachment of 21 vacant parcels totaling 3,017 acres. The detachment proceedings, which represented over 90 percent of the District, were originally filed with LAFCO in 1981 and were prompted following a dispute between the affected landowners and the District involving the collection of ad valorem property taxes. The ad valorem property taxes collected by the District were used to make payments on the general obligation bonds that were issued in 1964 to finance the construction of water and sewer systems serving Unit One. Additional phases of the District's planned water and sewer systems, however, were never constructed. As a result, the landowners sought a release of their lands that were located outside of Unit One from any payments for past or future bonded indebtedness incurred by the District.

[1] In 1964, the California Department of Real Estate conducted a survey of Unit One and determined that 21 of the subdivision's original 331 lots were not suitable for residential development due to unstable soil conditions. In 1971, the County of Napa declared that three roadways within Unit One (Fawn Court, Glen Court, and a portion of Poplar Court) would not be accepted into the County's roadway system as a result of prior landslides.

The dispute was eventually resolved following a legal settlement in which the landowners agreed to pay $175,000, while the District agreed not to oppose the detachment proceedings.

By the 1990s, the lack of development within Unit One coupled with the abandonment of the other planned phases of Circle Oaks resulted in the District operating at a loss as expenses outpaced revenues. The District's financial difficulties were exasperated when increased federal and state drinking water standards necessitated the construction of a water treatment plant in 1995. To meet operational costs, reserves were used to cover annual losses, which restricted the District from pursuing additional capital improvement projects.[2]

In 2000, COCWD increased water usage rates to meet operational costs as well as replenish a depleted reserve fund. Prior to the increase, the District's rate schedule was based on consumption tiers and had not been increased for several years. The amended rates, which included a change to a flat water rate schedule, increased the average monthly usage rate by approximately 500 percent.[3] The District also declared an emergency water shortage and adopted an ordinance placing a moratorium on new water service connections. The moratorium was prompted by two separate events earlier in the year in which storage levels within the District were nearly depleted due to a fire and an interruption in the distribution system. The moratorium is intended to remain in effect until the District can secure the necessary funding to implement needed capital improvements.

In 2001, COCWD hired an outside consultant to evaluate its water service system to meet current and future system demands. The consultant concluded that the District needed to immediately expand its storage and water treatment capacity as well as secure additional water supplies once development within Unit One exceeded 300 lots. The District is currently pursuing financing options to implement two of the consultant's recommended improvement projects: replace the District's deteriorating 50,000 gallon storage tank with a new 200,000 gallon storage tank and add capacity to the District's water treatment plant.

GOVERNANCE

COCWD was organized under the County Water District Law, Division 12 of the California Water Code. The District's governing board is comprised of an elected five-member board of directors serving staggered four-year terms. Elections are based on a registered resident-voter system. In addition to electing a president, the board is required to appoint a secretary and general manager to assist in the duties and operations of the district. The board is also required to appoint an auditor, treasurer or retain an independent auditor to monitor the financial condition of the district. Potable water

[2] A 1999 financial report by an independent auditor identified that between 1994 and 1999, COCWD operated at a cumulative loss of $192,648.

[3] Percentage based on the delivery of 10,000 gallons per service connection.

services can be financed through water usage and availability charges, assessments, and general obligation and revenue bonds.

COCWD is currently without a fourth and fifth director due to unexpected resignations; a third director was recently appointed by the Napa County Board of Supervisors in order for the District to achieve a quorum. The Board must conduct a special election to fill the remaining two vacant seats. Board meetings are scheduled for the third Thursday of every month at the District's administration office and are open to the public. Board members are compensated $100 for each meeting attended. Pursuant to the County Water District Law (Water Code 30000 et. seq.), the District is authorized to provide the following municipal services:

- Any act necessary to furnish sufficient water in the district for any present or future beneficial use, including the storage, conservation, and operation of water works (WC §31020-31022)

- The collection, treatment, and disposal of sewage, waste, and storm water (WC §31100)

- Drain and reclaim lands within the district for any beneficial use (WC §31033)

- Provide fire protection authorized under the Fire Protection Law of 1987 (WC §31120)

- Construct, maintain, or operate works or facilities for recreational activities (WC §31130)

- Acquire, construct, or operate facilities for the collection and disposal of garbage and waste (WC §31135)

- Construct, maintain, or operate hydroelectric power plants (WC §31149.1)

COCWD provides only the first two services listed above.

OPERATIONS

Operations and management of COCWD's potable water and sewer systems are provided by an independent contractor, Phillips and Associates. Under this arrangement, Phillips and Associates acts as general manager on behalf of the District. The company currently provides water and sewer services for approximately 15 entities in Napa County. The company was retained by the District in 2001 following the departure of the District's former operator. It provides on-sight supervision of the District's water and sewer systems seven days a week and is on call 24 hours a day to respond to reported

emergencies. The District employs one full-time administrator whose responsibilities include acting as district secretary and overseeing the day-to-day businesses on behalf of the board. The District's administration office is located next to the District's water treatment plant.

ADOPTED BOUNDARIES

COCWD's adopted service area is comprised of four non-contiguous, unincorporated areas consisting of approximately 252 acres. The District's adopted sphere of influence encompasses nearly its entire jurisdictional boundary with the exception of six parcels located outside of Unit One.[4] The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agriculture Watershed and Open Space." Zoning for this area is comprised of "Residential Single: B-10."[5] This zoning standard requires a minimum parcel size of 10 acres.

COCWD – Adopted Boundaries	
District Boundary:	252 acres *****
Sphere of Influence Boundary:	214 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

WATER SUPPLY

COCWD's water supply is generated from three wells and a spring source. The spring source is comprised of three horizontal wells that flow into a common galley. The three wells are located along the western edge of Unit One while the spring source is located along an easement on the northwestern edge of Unit One.[6] 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.

COCWD – Available Water Supply (acre-feet)	
Well No. 1:	116.14
Well No. 2:	22.06
Well No. 3:	10.30
Spring Source:	145.59
TOTAL	**294.09**

[4] Portions of three parcels owned by the Circle Oaks Homes Association, which are used for greenbelt purposes within Unit One, are also located outside the District's sphere of influence.

[5] COCWD land located outside its adopted sphere of influence is zoned "Agricultural Watershed." This zoning standard requires a minimum parcel size of 160 acres.

[6] COCWD reports that groundwater production markedly improved following an earthquake on September 3, 2000.

***** 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.[7] The District currently provides water service to 189 service connections. Of this amount, 182 service connections are located within Unit One.

COCWD – 2002 Water Demand	
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******

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for COCWD were identified in its *Preliminary Engineering Report (2001)*.[8] 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 of Unit One.

COCWD – Projected Water Demands (acre-feet)		
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

[7] A 2002 review by the California Department of Health Services determined that COCWD's maximum day demand between 1997 and 2001 was approximately 160,272 gallons.

[8] Report prepared by Triad/Holmes Associates.

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

WATER TREATMENT 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 into the District's distribution system. The treatment process begins as raw water is conveyed to the Circle Oaks WTP through an integrated conveyance system consisting of four and six inch water lines. Alum, polymer (coagulants), and chlorine (disinfectant) are added and mixed as raw water is conveyed into a clarifier. Raw water is detained in the clarifier to facilitate the sedimentation of solids in the water. Solids are removed as water is cycled through a filtering tank and conveyed into a 100,000 gallon clearwell tank. The clearwell tank completes the disinfection process by allowing the treated water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the distribution system require recharge. The Circle Oaks WTP has a treatment capacity of approximately 97 gallons per minute, resulting in a daily treatment capacity of 140,000 gallons.

Circle Oaks Water Treatment Plant	
Water Source:	Groundwater and Spring Sources
Treatment Capacity:	97 gallons per minute; or 140,000 gallons per day
Clearwell Tank Capacity:	100,000 gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

COCWD's water distribution system receives and distributes treated water generated from the Circle Oaks WTP. The distribution system consists of a network of six, eight, ten, and twelve inch water lines. The distribution system provides service to Unit One and to seven parcels located outside of the subdivision. The distribution system overlays two water pressure zones and is served (recharge and system pressure) 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."

The distribution system operates on a supply and demand basis and responds to storage levels within Zone One. Zone One includes 108 service connections and is served by a 200,000 gallon storage tank. When storage levels within the 200,000 gallon storage tank fall below a designated operating level, treated water is discharged from the clearwell tank by means of a pump station. As water enters Zone One, water levels inside the 200,000 gallon storage tank are recharged. "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, which recharges the 50,000 storage tank. The two storage tanks work in conjunction with one another to maintain adequate pressure throughout the distribution system by utilizing gravity.

COCWD – Distribution Storage Capacity	
Storage Tank 1:	200,000 gallons
Storage Tank 2:	50,000 gallons
TOTAL:	**250,000 gallons***

***** Total does not include storage capacity at Circle Oaks WTP's clearwell tank (100,000 gallons).

RATE SCHEDULE

COCWD customers are charged two monthly fees for water service: a flat usage charge and a fixed availability fee. The usage charge is based on the amount of water delivered and is measured in units of 1,000 gallons. The availability fee is charged to every parcel located within the District's service area metered for water service. The District also charges a one-time connection fee for water service.

COCWD – Rate Schedule	
Water Usage Fee:	$6.50 per 1,000 gallons
Water Availability Fee:	$29.00
Water Connection Fee:	$5,000

FINANCIAL

COCWD has an approved operating budget for 2002-2003 of $259,963. This amount includes water and wastewater operations. Primary expenses include payroll, operation and maintenance, professional services, and insurance/permit costs. The District's anticipated revenue for 2002-2003 is $261,639. Revenue sources include water and wastewater service fees and property taxes. The District is currently operating without a reserve fund.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Circle Oaks County Water District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[9] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

[9] LAFCO Resolution No. 04-19, adopted June 10, 2004.

Infrastructure Needs or Deficiencies:

1. Based on the historical production capacities of its local water supplies, the Circle Oaks County Water District has an adequate supply of water to meet existing and future water demands under normal conditions within the timeframe of this study.

2. The Circle Oaks County Water District should continue to pursue opportunities to increase and enhance its available water supply by developing a water conservation program. A water conservation program, which should encompass a variety of measures to remind constituents of the importance of conservation, will reduce system demands and help to ensure an adequate supply of water during periods of below normal and dry year condition.

3. The Circle Oaks County Water District relies on groundwater to help meet existing and future water demands within its jurisdictional boundary. Although this source has proven reliable, more information is needed to determine reasonable production capacities for the affected groundwater basin. This information is needed to protect against overdraft and to preserve the long-term beneficial use of the basin.

4. The Circle Oaks County Water District should develop a groundwater monitoring program to evaluate water levels and recharge patterns within its existing well sites. At the same time, the District should establish policy objectives to manage the availability and quality of groundwater within its jurisdictional boundary to protect against unintended consequences, such as overdraft and contamination.

5. The location of the Circle Oaks County Water District service area restricts opportunities for the District to receive emergency water supplies from an outside service provider during a drought or service interruption. This issue underscores the importance of the District developing a water shortage contingency plan to maximize and conserve local water resources during periods of below normal and dry year conditions when supplies are limited.

6. The Circle Oaks County Water District's maximum day water demand is an important component in evaluating its current and future service capacities.

   Title 22 of the California Code of Regulations requires all public water service providers ensure sufficient water be available from their supply, treatment, and storage facilities to adequately and dependably meet the requirements of all users under maximum demand conditions before permitting additional connections.

7. In 2000, the Circle Oaks County Water District adopted a 500 percent increase to its water usage rate schedule and placed a moratorium on new water service connections. These actions subsequently decreased recorded maximum day

records, making it appropriate to use demands recorded immediately prior to 2000 with respect to evaluating the infrastructure needs or deficiencies of the District.

8. The capacity of the Circle Oaks County Water District's water treatment plant to meet existing maximum day water demands is marginal. As a result, the District will continue to rely on stored reserves to help meet maximum day demands that are equal or exceed the capacity of its water treatment plant.

   Circle Oaks County Water District's maximum day demand in 2002 was 130,100 gallons, while its water treatment plant's daily capacity is 140,000 gallons.

9. The Circle Oaks County Water District's maximum day water demand prior to its 2000 decision to increase usage rates and adopt a moratorium on new water service connections is beyond the current capacity of its water treatment plant. Additional demands beyond the current capacity of its water treatment plant would increase the District's dependence on stored reserves during peak demand periods.

   Circle Oaks County Water District's average maximum day water demand immediately prior to 2000 was 160,272 gallons, while its water treatment plant's daily capacity is 140,000 gallons.

10. The Circle Oaks County Water District has adequate treated water storage capacity to meet existing and future maximum day water demands within the timeframe of this study. This ensures that the District has adequate reserves available to meet peak system demands under normal conditions.

    The District's treated water storage capacity is 250,000 gallons, while the average maximum day water demand immediately prior to 2000 was 160,272 gallons.

11. Based on the review of the California Department of Health Services, the Circle Oaks County Water District's water treatment plant capacity in combination with its storage supply is adequate to meet the minimum service requirements under its past and present maximum demand conditions as required under Title 22 of the California Code of Regulations.

12. The Circle Oaks County Water District has a policy requiring 1,500 gallons of fire storage capacity be available for each developed lot within its service area. This amount exceeds the current storage capacity of the District and is distinct from the amounts recommended by the California Department of Health Services and Napa County Code. To account for this difference, the District should review this policy. If the District determines it is appropriate to maintain or amend the policy, a written statement of justification should be provided to its constituents.

The Circle Oaks County Water District's Preliminary Engineering Report (2001), which was approved by the Board, recommends a fire flow requirement of 1,500 gallons for each developed lot, resulting in a current fire storage capacity requirement of 283,500 gallons. In 2002, the Department of Health Services recommended to the District a fire flow requirement of 750 gallons per minute for the duration of two hours, resulting in a current fire storage capacity requirement of 90,000 gallons. Napa County Code recommends a fire flow of 1,000 gallons per minute for the duration of 2 hours for a subdivision consisting of 141 to 350 parcels, resulting in a current fire storage capacity requirement for the District of 120,000 gallons (Title 15, Chapter 15.32, Appendix III-A, Section 5.3.6).

13. The Circle Oaks County Water District should work with the County of Napa Fire Department, as the local fire protection authority, to evaluate fire storage requirements for its service area.

14. The Circle Oaks County Water District's water distribution system is subject to higher levels of maintenance due to unstable soil conditions underlying its jurisdictional boundary. The District should work with the Napa County Resource Conservation District to develop techniques to control and prevent soil erosion, which will provide long-term cost-savings and reduce the risk of future service interruptions.

15. The Circle Oaks County Water District should evaluate the feasibility of converting its treated wastewater supply into an emergency fire protection source. The use of treated wastewater for fire protection would assist in maximizing local water resources during a fire emergency by reducing the demand on the District's potable reserves and would help to mitigate costs involving the construction of new storage facilities.

Growth and Population Projections:

1. No new development is expected within the Circle Oaks County Water District's jurisdictional boundary because of its moratorium on new water service connections.

   This moratorium has effectively created a building moratorium, as owners of undeveloped lots within Circle Oaks County Water District's primary service area, Unit One, are unable to receive a building permit from the Napa County Planning Department without documentation of an available water supply.

2. The Circle Oaks County Water District is under the land use authority of the County of Napa. Land located within the District's primary service area, Unit One, is zoned "Residential Single: B-10." This zoning standard restricts future development to existing parcels within Unit One by requiring a minimum parcel size of at least 10 acres.

Existing parcels within Unit One are uniformly 0.25 acres in size. Accordingly, these parcels cannot be divided for the purposes of creating additional parcels.

3. Land located outside of the Circle Oaks Water District's jurisdictional boundary is designated under the County of Napa General Plan as "Agriculture, Watershed, Open Space." This land use designation discourages the Commission from approving annexation proposals to the District based on its policy to direct the extension of municipal services away from land designated for agriculture unless it is in response to a health or public safety concern.

4. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by Circle Oaks County Water District's water service system. The population served by the District's water system based on this calculation method is 644.

Financing Constraints and Opportunities:

1. The Circle Oaks County Water District should retain the services of a financial consultant to evaluate long-term revenue requirements and enhancement opportunities for its water service operations to meet projected operational costs and finance needed capital improvements. This evaluation should determine whether financial measures are available to rescind the moratorium on new water service connections that was established to ensure adequate service is available to existing customers.

2. As part of its review of revenue enhancement opportunities, the Circle Oaks County Water District should conduct a water rate and connection fee study. One option to consider is the adoption of a new connection fee to help cover the costs of capital improvements needed to serve new development within its jurisdictional boundary. An increased connection fee would serve as a buy-in charge. This is an appropriate and equitable approach to ensuring that new development pays a fair share of past and future expenses relating to the development and maintenance of the water system.

3. The Local Groundwater Management Assistance Act of 2000 provides grant funding to local public agencies to conduct studies and develop programs to protect and manage groundwater supplies. This program may provide the Circle Oaks County Water District an opportunity to secure financing for the development of a groundwater monitoring program. The District should contact the California Department of Water Resources to begin exploring funding opportunities under this program.

4. The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 provides grant funding to public agencies to develop and enhance local water resources and related infrastructure and facilities. This program may provide the Circle Oaks County Water District an opportunity to secure financing for needed capital improvement projects, including expanding its treatment plant and storage capacities. The District should contact the California Department of Water Resources to begin exploring funding opportunities under this program.

Cost Avoidance Opportunities:

1. The Circle Oaks County Water District is a member of the Association of California Water Agencies, an organization comprised of over 400 public water agencies. This organization provides members with information concerning new regulations and legislation relating to water quality standards and facilitates the exchange of service information, including questions and ideas, through an association e-mail system. The District should take full advantage of the cost avoidance opportunities provided by this organization. This would include attending its conferences and workshops and participating in group discussions with other special districts sharing similar service issues and concerns.

2. The Circle Oaks County Water District's decision to contract for water service operations with Phillips and Associates provides cost-savings relating to salaries, benefits, training, and certification.

Opportunities for Rate Restructuring:

1. The Circle Oaks County Water District's water rates are – on average – the highest among all public water service providers in Napa County. The District should continue its efforts to educate its constituents with respect to the relationship between operational costs, infrastructure constraints, and water rates.

2. The Circle Oaks County Water District, as part of a long-term evaluation of revenue requirements and enhancement opportunities, should conduct a water rate and connection fee study. This study is needed in anticipation of the District increasing its water rates within the next year to support operational and capital improvement costs along with developing cash reserves.

3. In 2000, the Circle Oaks County Water District adopted an increase to its water usage rate schedule. The amended rate schedule increased the average monthly usage rate by approximately 500 percent. Although the increase was justified to be a more accurate measure of the actual costs of providing service, the increase created dissension among constituents regarding the decision-making practices of the District. Future rate increases, which should be developed as part of a water rate study, should be implemented gradually over a period of time to minimize the impact to the customer.

4. The Circle Oaks County Water District currently operates without sufficient cash reserves to help finance special projects or emergency improvements. This requires the District to rely on loans, special assessments, or bonded indebtedness to fund capital improvements or sustain operations in the event of an emergency. It is imperative that the District develop cash reserves to maintain the solvency of its water service operations.

   As of March 2004, the Circle Oaks County Water District maintained a cash reserve balance of $12,032.

5. The Circle Oaks County Water District should review the merits of modifying its flat water usage rate schedule in favor of a tiered schedule. A tiered rate schedule enables service providers to recover the costs of providing service to high-use customers while strengthening water conservation efforts by providing a financial incentive to conserve.

Opportunities for Shared Facilities:

1. The Circle Oaks County Water District is restricted from participating in cost-sharing activities with other water service providers, such as joint-use facilities and projects, based on its remote service location.

Government Structure Options:

1. The Circle Oaks County Water District is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of the District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. The Circle Oaks County Water District is empowered under the County Water District Act to provide seven municipal services: water, sewer, land reclamation, fire, recreation, sanitation, and hydroelectric power. Currently, the District provides only water and sewer service. Until it resolves its financial and operational constraints relating to water service operations, it is not appropriate for the District to provide additional municipal services.

3. The Circle Oaks County Water District has been successful in achieving its original service objective to provide water and sewer service to the Circle Oaks community. The District continues to serve as an appropriate instrument in meeting the service needs of the community by localizing costs for the direct benefit of its constituents.

4. There are no public agencies within reasonable proximity to the Circle Oaks County Water District capable of assuming its service responsibilities.

5. It is unknown if there are advantages to pursuing a change in reorganization for the Circle Oaks County Water District due to the limited information concerning alternative government structures and any cost-benefits with respect to improving service levels within the affected area. Additional information is needed to determine whether an alternative government structure would better serve the needs of the District's constituents as it relates to improving delivery service, public participation, and local accountability.

6. Future municipal service reviews should focus on the progress of the Circle Oaks County Water District in addressing its operational and financial constraints. Future reviews should also evaluate the extent of local control constituents wish to maintain in terms of evaluating alternative governance structure options.

Evaluation of Management Efficiencies:

1. The Circle Oaks County Water District should establish written policies and procedures defining the responsibilities of its staff and designated representatives. The establishment of ministerial powers would enhance the decision-making authority of staff and designated representatives, and improve its efficiency and responsiveness to its constituents in carrying out the business of the District.

2. The Circle Oaks County Water District must adopt a budget for the current and upcoming fiscal year. The adoption of a budget should follow a publicly noticed meeting in which constituents are allowed to comment and offer suggestions with respect to expenditures relating to the District's water service operations. Allowing adequate time for its constituents to review and comment on a budget proposal enhances the accountability of the District's elected and appointed officials by reinforcing community priorities in terms of managing local resources.

3. It has been two years since the Circle Oaks County Water District completed an audit of its financial records. To ensure effective management and transparency in its fiscal activities, the District should retain the services of an independent auditor to review its accounting practices over the past two years.

Local Accountability and Governance:

1. The Circle Oaks County Water District's governing body is currently comprised of three directors serving on a volunteer basis. A special election is needed to fill the remaining vacated seats due to the unexpected resignations of two board members in 2003. The lack of willing participation among constituents – both past and present – to serve on the governing board has hindered the District's ability to address its operational and financial constraints.

2. The lack of interest in serving on the Circle Oaks County Water District's governing board suggests a need to improve public outreach efforts. These efforts should remind constituents of the role of the District and the importance of community involvement in its decision-making process.

3. The Circle Oaks County Water District should begin to recruit and acquaint new board member candidates with local service goals and objectives in anticipation of filling future board member openings. These efforts will help to ensure a viable pool of successor candidates, and provide an opportunity to cultivate new perspectives and approaches that may prove successful in meeting the service needs of the District and its constituents.

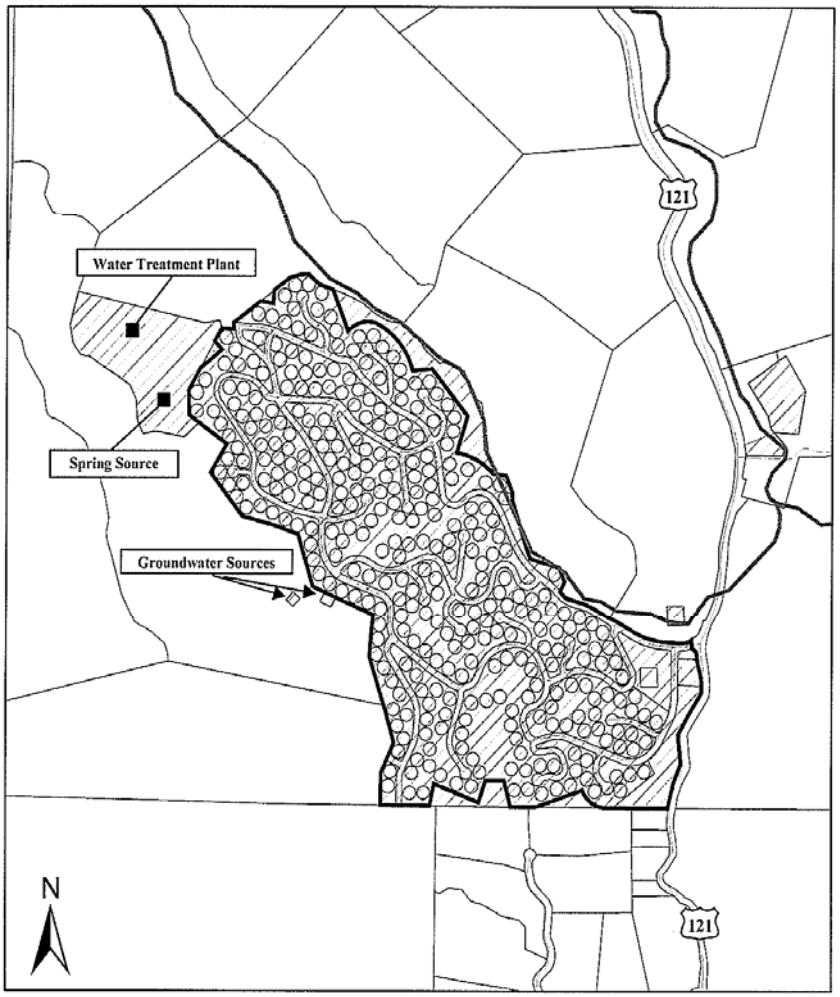
4. Due to the lack of a quorum, the Circle Oaks County Water District has not met on a regular basis over the past year. To strengthen its local accountability, the District's Board members should make a concerted effort to ensure their availability to attend regularly scheduled meetings at fixed times and locations. These actions, in combination with providing written notice to its constituents of all scheduled and rescheduled board meetings, will help ensure that information is being effectively communicated to the public in a timely and efficient manner.

5. Under its principal act, the Circle Oaks County Water District is authorized to provide a variety of municipal services, including "any act necessary to furnish sufficient water in the district for any present or future beneficial use." This includes establishing policies relating to the use and operation of its water distribution system. Accordingly, the District may develop policies that establish thresholds in excess of the minimum service requirements relating to supply, treatment, and storage as determined by the California Department of Health Services.

6. When evaluating existing or new policies, the Circle Oaks County Water District should distinguish for its constituents the minimum service requirements of a public water service provider versus the preferred operating practices of the District. This evaluation, which should be documented and provided to the public for their review, will strengthen communication between the District and its constituents and help to identify the desired level of service within the community.

7. The Circle Oaks County Water District should work with the Circle Oaks Homes Association to coordinate their respective efforts to better serve the Circle Oaks community.

Circle Oaks County Water District

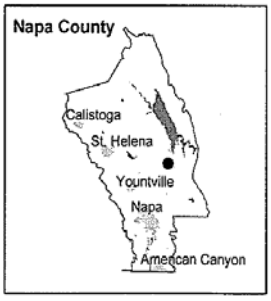


LEGEND

Sphere of Influence
District Boundary
Capell Creek

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP



Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

CONGRESS VALLEY WATER DISTRICT

OVERVIEW

The Congress Valley Water District (CVWD) was established in 1949 to provide potable water service to a residential farming community in southwest Napa County known as "Congress Valley." Originally formed as the Congress Valley – Napa County Water District, the District's formation was sought by local landowners to facilitate an agreement with the City of Napa for the procurement of a potable water supply. Discussions between interested landowners and Napa were prompted following several consecutive years of water shortages in Congress Valley; during the 1940s, groundwater supplies proved inadequate and bridled with high levels of minerals.

In 1950, in anticipation of reaching a long-term water supply agreement with Napa, CVWD voters authorized the sale of general obligation bonds to finance the construction of a water distribution system. One year later, the District entered into a 25-year agreement with Napa for an annual allocation of potable water. The District agreed to be responsible for the design, finance, and construction of a water distribution system that would connect to Napa's distribution system. In exchange, Napa agreed to provide up to 368 acre-feet of potable water annually and be responsible for billing and collecting water sales from District customers.

The extension of potable water service within CWVD proved growth inducing, and by the early 1970s, the District's distribution system began experiencing pressure losses as subdivision development led to a significant increase in service connections.[10] The distribution system, which was completed in 1952, was constructed with revenue generated from the sale of general obligation bonds. The sale of these bonds was limited to $38,000 due to the low property assessment of land located within the District. The modest revenue generated from these bonds resulted in an undersized distribution system consisting of one pump station, two to four inch water lines, and two storage tanks with a combined storage capacity of 15,000 gallons. As a result, the increase in service connections proved taxing as system demands exceeded the capacity of the District's distribution system, leading to water outages during peak demand periods.

In 1975, to address capacity concerns, CVWD authorized an engineer's report to evaluate its distribution system in terms of meeting existing and future system demands. The study concluded that the distribution system was unable to generate an adequate amount of pressure during peak demand periods due to friction caused by undersized water lines. The study recommended that the District not allow new service connections until improving the distribution capacity by replacing and enlarging water lines or requiring each customer to develop their own storage facility to provide adequate pressure. Following the release of the study, the District declared an emergency water shortage and adopted an ordinance restricting additional water connections. Further, the District asked

[10] In 1952, CVWD served 30 service connections. By 1974, the District served 61 service connections.

the Napa County Board of Supervisors to rezone territory located within its jurisdictional boundary to protect against further lot-line adjustments. This change in zoning was sought to abate further demands on the undersized delivery system. At the time of the request, the District was in the process of contemplating a new distribution system, but believed the process was undermined by uncertainties involving the potential number of parcels that may eventually reside within its jurisdictional boundary. To this end, the District successfully requested that land located within its jurisdictional boundary be rezoned to "Agricultural, Watershed and Recreation," thereby limiting lot-line adjustments to 40-acre parcel minimums.[11]

Incremental improvements were made by CVWD to its distribution system following its 1975 decision to restrict new water service connections. The restrictions were lifted in 1989 after the District completed construction on a new distribution system. The new distribution system, which was financed through a grant and low-interest loan from the California Department of Water Resources, enabled the District to increase its distribution capacity by replacing undersized water lines with larger lines adequate to meet system demands. The completion of the new distribution system coincided with a new water supply agreement with Napa, which had been finalized two years earlier in 1987. This agreement provides the District with an annual allocation of 100 acre-feet of potable water through 2017, and limits service to no more than 140 service connections to parcels of legal record at the time of the agreement. Napa agrees to charge the District a water usage fee concurrent with its rate for inside-city customers while charging District customers at a rate specified by the District. This arrangement allows the District to collect a surcharge on water sales within its jurisdictional boundary.[12] Napa is responsible for the complete operation and maintenance of the District's distribution system. Notably, the agreement specifies that the District shall voluntarily dissolve and turn over all assets to Napa at the conclusion of the agreement.

GOVERNANCE

CVWD was organized under the County Water District Law, Division 12 of the California Water Code. The District's governing board is comprised of an elected five-member board of directors serving staggered four-year terms. Elections are based on a registered resident-voter system. In addition to electing a president, the board is required to appoint a secretary and general manager to assist in the duties and operations of the district. The board is also required to appoint an auditor, treasurer or retain an independent auditor to monitor the financial condition of the district. Services can be financed through water use and standby charges, assessments, and general obligation and revenue bonds.

[11] Zoning standards for land located within CVWD's jurisdictional boundary was subsequently amended to "Agricultural Watershed," which limits lot-line adjustments to 160-acre parcel minimums.

[12] CVWD applied a surcharge on water sales between 1987 and 1998. The District ended this practice following a recommendation by an outside consultant that it amend its rate schedule to be identical to the rate charged by Napa to its inside-city customers. (Consultant's recommendation was prompted by a Napa County Grand Jury report highlighting the discrepancy between the two agencies' water rates.)

CVWD's board meetings are conducted on the second Monday of every month at the County of Napa's administration building and are open to the public. Board members are compensated $100 each month for all meetings attended. Pursuant to County Water District Law (Water Code 30000 et. seq.), the District is authorized to provide the following municipal services:

- Any act necessary to furnish sufficient water in the district for any present or future beneficial use, including the storage, conservation, and operation of water works (WC §31020-31022)
- The collection, treatment, and disposal of sewage, waste, and storm water (WC §31100)
- Drain and reclaim lands within the district for any beneficial use (WC §31033)
- Provide fire protection authorized under the Fire Protection Law of 1987 (WC §31120)
- Construct, maintain, or operate works or facilities for recreational activities (WC §31130)
- Acquire, construct, or operate facilities for the collection and disposal of garbage and waste (WC §31135)
- Construct, maintain, or operate hydroelectric power plants (WC §31149.1)

CVWD provides only the first service listed above.

OPERATIONS

Operations and management of CVWD's potable water distribution system is provided by the City of Napa. Customer inquiries, including billing and service questions, are directed to Napa's Public Works Department, Water Division. Under this arrangement, Napa acts as general manager on behalf of the District. Designated city staff is on call 24 hours a day, 7 days a week to respond to reported emergencies. The District employs one part-time administrator whose responsibilities include acting as district secretary, as well as interacting on behalf of the board with local government agencies.

ADOPTED BOUNDARIES

CVWD's adopted service area is comprised of a contiguous, unincorporated area consisting of approximately 1,416 acres. The District's adopted sphere of influence encompasses nearly its entire jurisdictional boundary with the exception of two parcels located immediately outside its western and southern sphere boundary.[13] The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agriculture Watershed and Open Space." Zoning for this area is comprised of "Agricultural Watershed." This zoning standard requires a minimum parcel size of 160 acres.[14]

CVWD – Adopted Boundaries	
District Boundary:	1,416 acres *****
Sphere of Influence Boundary:	1,182 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

WATER SUPPLY

CVWD's water supply is generated from the supply of 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.

CVWD – Available Water Supply (acre-feet)	
City of Napa	100 (annual allocation)

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.

[13] Both parcels were included as part of CVWD's original jurisdictional boundary but were excluded from its sphere of influence at the time of LAFCO's last review of the District in 1985; LAFCO concluded that its was economically infeasible for the District to provide adequate water service to both parcels due to the limitations of the prior distribution system.

[14] CVWD land located outside its adopted sphere of influence is also zoned Agricultural Watershed.

CVWD – 2002 Water Demand	
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**

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

WATER TREATMENT FACILITIES

CVWD does not own, lease, or operate treatment facilities. Water delivered to the District is treated by the City of Napa.

DISTRIBUTION AND STORAGE FACILITES

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.

RATE SCHEDULE

CVWD customers are charged a bimonthly usage charge for water service. The usage charge is equal to the City of Napa's inside customer rate and is based on the volume of water delivered measured in units of 1,000 gallons. The usage charge is billed and collected by Napa. A one-time connection fee is billed and collected by the District.

CVWD – Rate Schedule	
Water Usage Fee:	$3.23 per 1,000 gallons *
Water Connection Fee:	$ 7,683

* Billed and collected by the City of Napa

FINANCIAL

CVWD has an approved operating budget for 2002-2003 of $62,678.66. Primary expenses include professional services, insurance coverage, and payment on outstanding debts. The District's anticipated revenue for 2002-2003 is $62,231. Revenue sources include property taxes, interest from its reserve balance, and water connection fees. The District's reserve balance as of July 2002 was $490,506.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Congress Valley Water District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[15] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. The Congress Valley Water District indirectly provides water service to its constituents through an agreement with the City of Napa. This agreement provides the District with an adequate supply of water to meet existing and future water demands under normal conditions within the timeframe of this study.

2. It is anticipated that the Congress Valley Water District's contracted supply of potable water will be proportionally reduced during periods of below normal and dry year conditions as a result of conservation measures implemented by the City of Napa. To lessen the impact to its constituents during these periods, the District should make a concerted effort to reduce system demands by promoting and developing water conservation programs in consultation with Napa.

3. The ability of the Congress Valley Water District to provide water service to its constituents is dependent on the supply, treatment, distribution, and storage facilities of the City of Napa. Any impediment or interruption in Napa's water system operations would diminish service levels and likely result in water shortages within the District.

4. The City of Napa has established an effective program for evaluating its water service operations with respect to addressing infrastructure needs or deficiencies. Napa's management of its water service operations helps to ensure adequate supply and capacity for constituents of the Congress Valley Water District and provides assurance that needed infrastructure improvements are implemented in a timely manner.

[15] LAFCO Resolution No. 04-18, adopted June 10, 2004.

5. The Congress Valley Water District should continue to work with the City of Napa to identify and address mutually beneficial system improvements to maintain an adequate level of water service within its jurisdictional boundary.

Growth and Population Projections:

1. The Congress Valley Water District is under the land use authority of the County of Napa. Land located within the District is zoned "Agricultural Watershed." This zoning standard helps to restrict future development within the District by requiring minimum parcels sizes of at least 160 acres.

2. There are eight parcels located within the Congress Valley Water District's jurisdictional boundary under "Williamson Act" contracts with the County of Napa. These parcels represent approximately forty percent of the entire jurisdictional boundary and help to ensure the preservation of agriculture and open space as significant land uses within the District.

   Parcels under Williamson Act contracts are required to maintain their agricultural and open space land uses over the course of renewable 10-year periods in exchange for reduced property tax assessments.

3. The Congress Valley Water District's water supply agreement with the City of Napa, which allocates 100 acre-feet per year and authorizes the District to allow up to 140 service connections to parcels of legal record as of 1987, constrains growth while providing appropriate parameters for the District to accommodate future service demands.

4. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by Congress Valley Water District's water service system. The population served by the District's water system based on this calculation method is 244.

Financing Constraints and Opportunities:

1. Under its agreement with the City of Napa, the Congress Valley Water District is not responsible for costs relating to the operation, maintenance, or replacement of facilities involved in the delivery of potable water within its jurisdictional boundary. This arrangement allows the District to apply its revenue sources for a variety of non-operational purposes, such as funding special studies and paying down long-term debt.

2. The Congress Valley Water District can generate additional revenue by collecting a surcharge on water sales within its jurisdictional boundary. This feature allows the District to raise additional revenue to finance unexpected costs or special projects without depleting its cash reserves or relying on outside financing.

Cost Avoidance Opportunities:

1. The Congress Valley Water District's agreement with the City of Napa eliminates costs for the District with respect to the delivery of potable water service to its constituents. Notable cost-savings associated with this agreement include providing the District with access to a wide range of administrative and operational support, including billing and collections, engineering, and maintenance personnel.

2. The decision by the Congress Valley Water District to contract for water service with the City of Napa reflects the financial constraints associated with developing its own water resources and promotes the benefits of local partnerships.

Opportunities for Rate Restructuring:

1. The Congress Valley Water District maintains its water rates at a level and structure identical to the rate and structure adopted by the City of Napa for customers located within its incorporated territory. This practice provides District constituents with a distinct economic advantage, as their rates are – on average – lower than the rates offered by the other four special districts providing potable water service in Napa County.

2. In the event the City of Napa increases its water service rates for customers located within its incorporated boundary, the Congress Valley Water District may choose to increase its rates to remain concurrent with the City. This is a fair and equitable approach to ensure that District constituents pay an equal share of increased operational costs and capital improvement projects as beneficiaries of Napa's water service operations.

Opportunities for Shared Facilities:

1. The Congress Valley Water District's agreement with the City of Napa represents a successful partnership promoting the benefits and cost-effectiveness of shared facilities and staff resources while achieving the District's objective to provide a reliable source of water for its constituents.

Government Structure Options:

1. The Congress Valley Water District is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of the District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. The Congress Valley Water District is empowered under the County Water District Act to provide seven municipal services: water, sewer, land reclamation, fire, recreation, sanitation, and hydroelectric power. Due to its rural residential use and agricultural land use designation under the County of Napa, the District does not require a full range of municipal services. Only water for domestic and agricultural use is an appropriate and needed service within the District.

3. The Congress Valley Water District has been successful in achieving its original service objective to facilitate an agreement on behalf of its constituents with the City of Napa for the procurement of a potable water supply. The formation of the District and its subsequent management has proven to be a responsive instrument in meeting the service needs of the community by localizing costs for the direct benefit of its constituents.

4. The Congress Valley Water District currently provides water service to an unincorporated "island" parcel located at 4062 Old Sonoma Road. Since it is prohibited from extending water service to this parcel through an outside service agreement based on its agreement with the City of Napa, the District is encouraged to initiate annexation proceedings or amend its agreement with Napa to allow it to request an outsider service agreement from the Commission. Successful implementation of either action will bring the District in compliance with the Cortese-Knox-Hertzberg Reorganization Act of 2000.

5. In the event the Congress Valley Water District is dissolved, the City of Napa would be prohibited from providing new or extended water service within the District's former jurisdiction without first obtaining the approval of the Commission pursuant to Government Code §56133. Under these circumstances, landowners within the District who have helped fund the distribution system through an allocation of their property taxes without establishing water service would not be able to receive service unless approved by the Commission.

   Government Code §56133(b) authorizes the Commission to allow a public agency to provide new or extended potable water service outside its jurisdictional boundary but within its sphere of influence in anticipation of a later change of organization. Further, Government Code §56133(c) states that the Commission may allow an agency to provide new or extended potable water services outside its jurisdictional <u>and</u> sphere of influence boundaries only to respond to an existing or impending public health and/or safety threat.

6. Future municipal service reviews should focus on whether the scheduled dissolution of the Congress Valley Water District at the conclusion of its agreement with the City of Napa is appropriate to best meet the service needs of its constituents beyond 2017.

Evaluation of Management Efficiencies:

1. Each year, the Congress Valley Water District provides a summary of past and projected revenues and expenditures as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to District activities. In addition to enhancing the accountability of elected and appointed officials, the District's budget process provides a clear directive towards board members and staff with respect to prioritizing local resources.

2. The Congress Valley Water District has sufficient capital reserves to help finance special projects or emergency improvements to its distribution system; reserves are generated from interest on previously accumulated reserves, property taxes, and connection fees. Applying surplus revenue from these sources is a fair and equitable approach to passing capital expenditures to ratepayers without incurring or relying on loans, special assessments, or bonded indebtedness to fund unexpected or anomalous projects.

3. The Congress Valley Water District should evaluate interest among its constituents towards developing reclaimed water service within its jurisdictional boundary. The development of reclaimed water service within the District would provide an alternative water source for agriculture and landscape users while maximizing existing water resources within the community.

4. The Congress Valley Water District should develop a strategy towards managing its cash reserves in anticipation of its scheduled dissolvement in 2017.

   As of July 2003, the Congress Valley Water District maintained a cash reserve balance of $511,169, while having approximately $260,000 remaining in long-term debt obligations.

Local Accountability and Governance:

1. The Congress Valley Water District's board meetings are conducted once a month and are open to the public. Public inquiries involving water service operations can be addressed to the Board at this time. Regularly scheduled meetings provide an opportunity for District constituents to ask questions of their elected and appointed representatives, while helping to ensure that service information is being effectively communicated to the public.

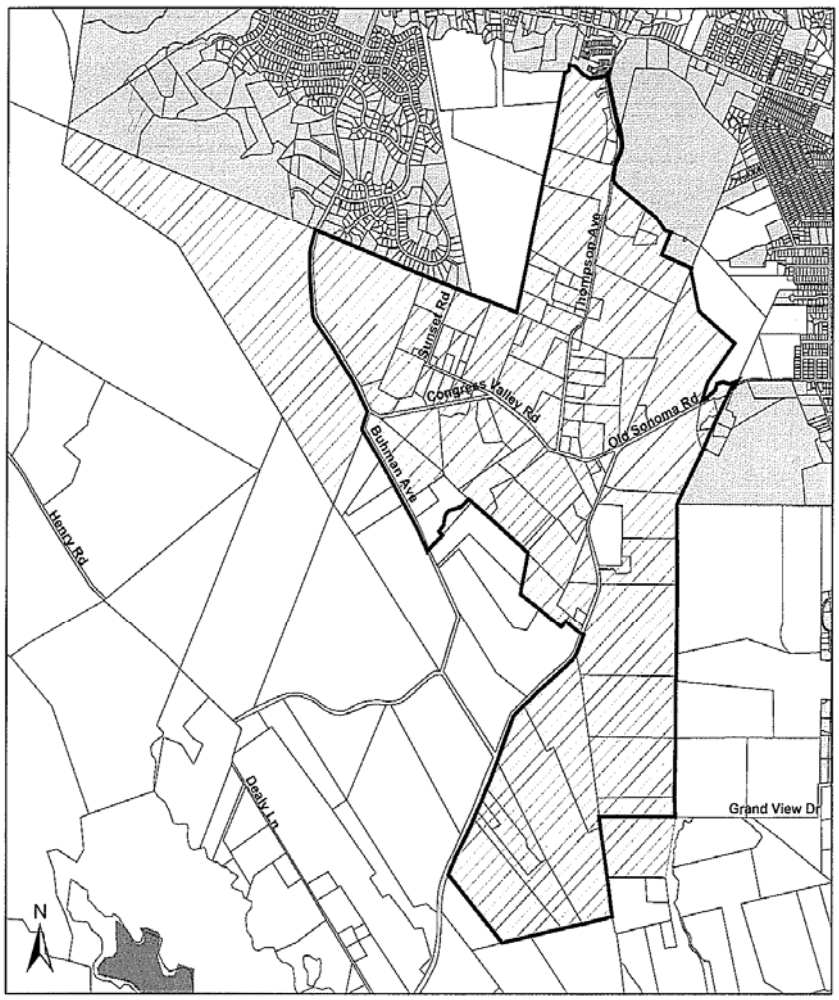
2. The Congress Valley Water District's governing body is comprised of five directors serving reappointed terms in lieu of other candidates seeking election. The lack of participation among constituents to serve on the District's governing board reflects a need for improving public outreach efforts to remind constituents of the role of the District and the importance of community involvement in its decision making process.

3. In anticipation of future board member departures, the Congress Valley Water District should begin to recruit and acquaint new board member candidates with respect to local service goals and objectives. This will help to ensure a viable pool of successor candidates, and provide an opportunity to cultivate new perspectives and approaches that may prove successful in meeting the service needs of the District.

4. The Congress Valley Water District relies largely on the efforts of the City of Napa to inform its constituents regarding water service operations within its jurisdictional boundary. The District should make a concerted effort to improve its public dialogue with its constituents by better publicizing its meetings, establishing a dedicated phone line, and developing an annual newsletter. These efforts would enhance its local accountability, foster greater public participation, and help increase its visibility as the local water use authority.

5. The Congress Valley Water District is governed by a responsive and dedicated board and staff. These characteristics enhance local accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Congress Valley Water District



LEGEND

- District Boundary
- Sphere of Influence
- City of Napa

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT

OVERVIEW

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. The District was formed under the Resort Improvement District Law, which was enacted by the California Legislature in 1961. The law was created to facilitate the formation of public agencies capable of providing a wide range of municipal services in areas best suited for recreational and seasonal uses. Along with water and sewer, other prominent services authorized under the law included fire protection, planning, public recreation, and street lighting. It was expected that the District would offer additional services authorized under the law as needed. However, in 1971, the law was amended to preclude a district from providing services that were not already being provided as of July 1, 1970. At the time of the amendment, the District had only established water and sewer service.

LBRID's formation was proposed by the Labry Corporation to help facilitate the development of an approximate 2,000-unit subdivision to be known as the "Berryessa Estates." The formation of the District was proposed after the Labry Corporation had approached the County of Napa to express its interest in developing a subdivision at Putah Creek. To assist in the development of the area, the Board of Supervisors agreed to serve as the District's governing body and directed the Napa County Flood Control and Water Conservation District (NCFCWCD) to provide operation and administrative services for the District.[16]

At the time of LBRID's formation, it was anticipated that the Berryessa Estates would be developed in five phases and include a mixture of uses. Planned uses included single-family residential, multi-family residential, commercial, and recreational. Development of the Berryessa Estates commenced in 1965 with the construction of "Unit One" and "Unit Two." Unit One involved the construction of Stagecoach Canyon Road, which connected the subdivision to the nearest county road, Snell Valley Road. Unit Two involved the creation of 351 single-family residential lots. The development of the remaining phases of the Berryessa Estates, which was expected to include additional residential units and recreational amenities, was not pursued due to market demand and land use policies.[17]

[16] Based on an informal agreement with the NCFCWCD, the County Public Works Department currently provides operation and administrative services for LBRID.

[17] In 1975, Napa and Contra Costa Counties filed suit against the Labry Corporation for false advertising. The suit alleged that the Labry Corporation had misled investors by promising the construction of certain amenities for residents of Berryessa Estates, such as a marina and golf course. In 1976, the Contra Costa County Superior Court issued a judgment requiring the Labry Corporation to make certain improvements at the Berryessa Estates. Notable improvements specified by the Court included a boat launch, pier, campground site, and marina.

In late 1965, LBRID issued general obligation bonds to finance the construction of water and sewer facilities for Unit Two. These facilities included a water treatment plant, storage facilities, and a distribution system. In 1969, the District formalized a water supply agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). Renewed in 1999, the agreement provides the District with an annual water entitlement of 200 acre-feet from Lake Berryessa through 2024.

In 1996, LBRID authorized a status report on its water and sewer facilities.[18] The report was in response to damage caused by the previous year's storms along with increased federal and state drinking water standards. The report noted that a significant portion of the District's reserves had been recently used on maintenance improvements to its water system. The report also noted that the County had been using money from its general fund to help cover the cost of larger improvement projects on behalf of the District, including the repair of three storage tanks. The report noted, beginning in 1996, that these funds would no longer be available to the District. As a result, additional revenue was needed to maintain operations and replenish the District's reserves to fund future capital improvements. Notably, the report recommended the construction of a backup water treatment plant to meet increased drinking water standards.

Following the release of the 1996 status report, LBRID implemented a number of steps to increase its revenue base. In late 1996, the District's water usage rates were increased by nine percent to help meet operational and maintenance costs. Also, in 1998 and 2000, voters approved special taxes to finance various improvement projects for the District's water system along with replenishing a depleted reserve fund. The District also received grants from California's Office of Emergency Services and the United States Department of Housing and Urban Development to help finance repairs caused by the 1995 storms.

A prominent planning factor for LBRID involves the limited development within its primary service area, the Berryessa Estates. As noted, the Berryessa Estates was intended to include the development of a multi-phased 2,000-unit subdivision. Due to market demand and land use policies, however, only the first two phases were developed. Further, development within these phases has been limited. Notably, although Unit Two involved the creation of 351 residential lots, only 49 percent of these lots were developed as of December 2002.[19]

[18] The report was conducted by the County Public Works Department and was prepared in conjunction with an evaluation of the facilities of the Napa-Berryessa Resort Improvement District.

[19] Estimate based on the total number of service connections (171) within the Berryessa Estates.

GOVERNANCE

LBRID was organized under the Resort Improvement District Law, Division 11 of the California Public Resource Code. The District's governing body consists of the Napa County Board of Supervisors, who are elected to staggered four-year terms by district voting.[20] Supervisors are required to conduct the business of the District in accordance with the provisions of County Service Area Law. District elections are based on a resident-voter system. Potable water services can be financed through water usage and availability charges, assessments, and general obligation and revenue bonds.

LBRID's board meetings are conducted on a need basis, and typically are called to address budget issues, project approval, and rate increases. Meetings are conducted at the County of Napa's Administration Building and are open to the public. Pursuant to the Resort Improvement District Law (Public Resource Code 13000 et. seq.), the District was originally authorized to provide the following municipal services:

- To supply water for domestic, irrigation, sanitation, industrial, fire protection, and/or recreation uses (PRC §13070-a)
- The collection, treatment, and disposal of sewage, waste, and storm water (PRC §13070-b)
- Fire protection (PRC §13070-c)
- Community planning (PRC §13070-d)
- The collection and disposal of garbage (PRC §13070-e)
- Public recreation (PRC §13070-f)
- Street lighting (PRC §13070-g)
- Mosquito abatement (PRC §13070-h)
- The equipment and maintenance of a police department or other police protection (PRC §13070-i)
- Road construction (PRC §13070-j)
- Public work improvements, including the construction of bridges, culverts, curbs, gutters, and drains (PRC §13070-k)

[20] The Board of Supervisors is authorized to delegate any of its governance powers to a five-member board of directors. Four of the five directors must be elected by LBRID voters, with the fifth director being the supervisor representing the affected area. However, upon the unanimous vote of the directors, the board may consist of five members who are all elected resident voters of the District.

- The construction of parking and transportation facilities (PRC §13070-l)

In 1971, the Resort Improvement District Law was amended limiting LBRID to providing only the first two services listed above.

OPERATIONS

Under the direction of the Napa County Board of Supervisors, the Napa County Public Works Department provides administrative and operational services for LBRID's potable water and sewer systems. The County employs one full-time licensed operator to manage the District's day-to-day operations. The operator is on call 24 hours a day, 7 days a week, to respond to reported emergencies. In addition to the full-time operator, the District and the Napa-Berryessa Resort Improvement District share a full-time licensed water and sewer treatment supervisor. Customer inquiries, including billing and service questions, are directed to the Public Works Department. Extra help is made available to the District on a need basis. Currently, two extra help personnel assist with operations at both the District and the Napa-Berryessa Resort Improvement District.

ADOPTED BOUNDARIES

LBRID's adopted service area is comprised of a contiguous, unincorporated area consisting of approximately 2,030 acres. The District's adopted sphere of influence encompasses less than 12 percent of all land located within its jurisdictional boundary. The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agricultural Watershed and Open Space" and "Rural Residential." Zoning for this area is comprised of two standards, "Agricultural Watershed" and "Planned Development."[21] Parcels zoned Agricultural Watershed require a minimum parcel size of 160 acres. There are no minimum sizes for parcels zoned Planned Development.

LBRID – Adopted Boundaries	
District Boundary:	2,030 acres *****
Sphere of Influence Boundary:	225 acres *

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

[21] LBRID land located outside of its adopted sphere of influence is zoned Agricultural Watershed and Planned Development.

WATER SUPPLY

LBRID's water supply is drawn from Lake Berryessa.[22] The District's right to draw water from Lake Berryessa is secured through a 1999 agreement with 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 districts, including LBRID. As a subcontractor to NCFCWD, the District is annually entitled to 200 acre-feet of water from Lake Berryessa through 2024.

LBRID – Available Water Supply (acre-feet)	
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. All 171 service connections are located within Unit Two of the Berryessa Estates.

LBRID – 2001-2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

[22] Lake Berryessa was developed by the United States Department of the Interior, Bureau of Reclamation, as part of its Solano Project. The Solano Project originally intended to provide Napa, Yolo, and Solano Counties with a reliable source of water for agricultural and domestic uses. After concluding that the Berryessa Valley would be an ideal location for the creation of a water reservoir by damming Putah Creek, the Bureau of Reclamation approached all three counties about participating in a joint project. However, both Napa and Yolo decided against participating in the project, leaving Solano County as the sole participant. The Monticello Dam was completed in 1957, and the formation of Lake Berryessa was finished by 1964. Based on its participation, Solano County maintains the majority of water rights to Lake Berryessa. Lake Berryessa has an approximate storage capacity of 1.6 million acre-feet.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for LBRID are not available.

WATER TREATMENT 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 disinfects and filters raw water captured from a floatable intake system at Putah Creek. The treatment process begins as raw water is captured by a submersible pump and provided with an initial treatment of potassium permanganate (disinfectant). Raw water is conveyed through a transmission line that connects the intake system to the Lake Berryessa WTP. Pro Pac (coagulant) and chlorine (disinfectant) are added and mixed as the raw water is conveyed into a clarifier. Raw water is detained in the clarifier to facilitate the sedimentation of solids in the water. Solids are removed from the treatment process as water is cycled through a two-stage filtering process before entering into a 10,000 gallon clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the distribution system require recharge. The Lake Berryessa WTP has a treatment capacity of 174 gallons per minute, resulting in a daily capacity of 250,000 gallons.

Lake Berryessa Water Treatment Plant	
Water Source:	Solano Project (Lake Berryessa)
Treatment Capacity:	174 gallons per minute; or 250,000 gallons per day
Clearwell Tank Capacity:	10,000 gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

LBRID's water distribution system receives and distributes treated water generated from the Lake Berryessa WTP. 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 overlays three water pressure zones and is served (recharge and system pressure) 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 clearwell tank into the distribution system.

The distribution system operates on a supply and demand basis and responds to storage levels within the District's 200,000 gallon storage tank (Storage Tank 1). When storage levels in Storage Tank 1 fall below a designated operating level, treated water is

discharged from the clearwell tank. As water enters into the primary distribution system, water levels inside Storage Tank 1 are recharged. Storage Tank 1 and Storage Tank 2 are each equipped with pumps in order to lift water into the higher pressure zones. Storage Tank 3 is located within the District's highest elevation and is not equipped with a pump. All three storage tanks work in conjunction with one another to maintain adequate pressure throughout the system by using gravity.

LBRID – Distribution Storage Capacity	
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).

RATE SCHEDULE

LBRID customers are charged two fees for water service: a monthly usage fee and an annual availability fee. The usage charge is based on the volume of water delivered and is measured in units of 1,000 gallons. The availability fee is fixed and charged to every parcel within Unit Two that have water infrastructure available to their property. The District also collects a fixed one-time water service connection fee in the amount of $1,200.

LBRID – Rate Schedule	
Water Usage Fee:	$1.44 per 1,000 gallons
Water Availability Fee:	$468 *
Connection Fee:	$1,200

* In 1998, district landowners approved a special tax resulting in the transformation of the availability fee into a special parcel tax.

FINANCIAL

LBRID has an approved operating budget for 2002-2003 of $331,061. Primary expenses include maintenance and operation costs, payroll, and insurance coverage. The District's anticipated revenue for 2002-2003 is $315,571. Revenue sources include water and sewer service fees, and property taxes. The District also receives revenue from a special tax approved by voters in 2000. The revenue generated from this special tax will continue until 2010. As of February 2003, the District's cash balance was $148,227.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating the Lake Berryessa Resort Improvement District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[23] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its contractual agreement with the Napa County Flood Control and Water Conservation District, the Lake Berryessa Resort Improvement District imports an adequate supply of water to meet existing system demands under normal conditions. It is anticipated that this supply is sufficient to meet future system demands under normal conditions within the timeframe of this study.

2. The Lake Berryessa Resort Improvement District should continue to pursue opportunities to increase and enhance its available water supply by developing a water conservation program. A water conservation program, which should encompass a variety of measures to remind constituents of the importance of conservation, will reduce system demands and help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. The ability of the Lake Berryessa Resort Improvement District to address infrastructure needs or deficiencies in a timely manner is constrained by its financial resources relative to the cost of service.

4. The Lake Berryessa Resort Improvement District's maximum day water demand is an important component in evaluating its current and future service capacities.

   Title 22 of the California Code of Regulations requires all public water service providers ensure sufficient water be available from their supply, treatment, and storage facilities to adequately and dependably meet the requirements of all users under maximum demand conditions before permitting additional connections.

5. The Lake Berryessa Resort Improvement District has adequate treatment capacity to independently meet existing maximum day water demands. It is anticipated that this capacity is sufficient to meet future maximum day water demands within the timeframe of this study.

[23] LAFCO Resolution No. 04-22, adopted October 14, 2004.

Lake Berryessa Resort Improvement District's maximum day demand in 2002 was 140,000 gallons, while its water treatment plant's daily capacity is 250,000 gallons.

6. The Lake Berryessa Resort Improvement District has adequate treated water storage capacity to independently meet existing maximum day water demands. This capacity helps to ensure adequate reserves are available during an emergency or interruption in service. It is anticipated that this capacity is sufficient to meet future maximum day water demands within the timeframe of this study.

   Lake Berryessa Resort Improvement District's treated water storage capacity is 400,000 gallons, while its maximum day water demand in 2002 was 140,000 gallons.

7. Central components of the Lake Berryessa Resort Improvement District's water system, including its treatment plant and storage tanks, have been in operation since the 1960s. As a result, the water system requires a higher level of maintenance, resulting in additional costs with respect to repairs and staff time.

8. The Lake Berryessa Resort Improvement District requires a comprehensive facilities plan regarding its water service operations. This plan should evaluate existing water system facilities, project future water demands, and offer recommendations with respect to immediate and long-term capital improvements that are consistent with the service needs of the community.

Growth and Population Projections:

1. The Lake Berryessa Resort Improvement District is under the land use authority of the County of Napa. Land located within the District's primary service area, Unit Two, is zoned "Planned Development." This zoning standard does not require a minimum parcel size. This allows for additional density, including residential and commercial, to occur within Unit Two for existing or new lots upon the approval of a modified or new use permit.

   In absence of a use permit, allowable uses for parcels zoned planned development include telecommunication facilities and minor antennas. Allowable uses upon grant of a use permit include residential, commercial, educational, recreational, mobile home parks, and institutional facilities.

2. Land located outside of the Lake Berryessa Resort Improvement District's jurisdictional boundary is designated under the County of Napa General Plan as "Agriculture, Watershed, Open Space." This land use designation discourages the Commission from approving annexation proposals to the District based on its policy to direct the extension of municipal services away from land designated for agriculture unless it is in response to a health or public safety concern.

3. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by Lake Berryessa Resort Improvement District's water service system. The population served by the District's water system based on this calculation method is 564.

Financing Constraints and Opportunities:

1. The Lake Berryessa Resort Improvement District's water supply agreement with the Napa County Flood Control and Water Conservation District provides the District with a reliable source of water at a cost below market value. This agreement enables the District to establish and maintain a revenue stream based on its water supply that exceeds its cost of purchase, which helps to finance other operational and maintenance services.

   The Lake Berryessa Resort Improvement District currently pays the Napa County Flood Control and Water Conservation District $20 per acre foot (325,900 gallons), while charging customers a usage rate of $1.44 per 1,000 gallons. This results in a cost-to-revenue of $20 to $469 for each acre-foot (note: this does not take into account pumping, treatment, storage, and distribution costs.)

2. The ability of the Lake Berryessa Resort Improvement District to generate sufficient revenues has been hampered by unfulfilled development plans within its jurisdictional boundary. As a result, service costs for the District is spread out among fewer ratepayers, resulting in under funded operations and dependency on outside assistance to finance capital improvements.

3. Over the past several years, the Lake Berryessa Resort Improvement District has relied on its cash reserves to help meet its operating expenses. The use of cash reserves to cover operating expenses restricts the ability of the District to generate and dedicate cash reserves for needed capital improvements.

4. The Lake Berryessa Resort Improvement District's connection fee for water service is low relative to the connection fee adopted by other public water service providers in Napa County. As part of a water rate evaluation, the District should consider increasing its connection fee to help cover the cost of capital improvements needed to serve existing and future development within its jurisdictional boundary.

5. The Lake Berryessa Resort Improvement District's connection fee serves as a buy-in charge for new development within its jurisdictional boundary. This is an appropriate and equitable approach to ensuring that new development pays a fair share of past and future expense relating to the development and maintenance of the water system.

6. The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 provides grant funding to public agencies to develop and enhance local water resources and related infrastructure and facilities. This program may provide the Lake Berryessa Resort Improvement District an opportunity to secure financing for needed capital improvement projects, including automating its operational facilities. The District should contact the California Department of Water Resources to begin exploring funding opportunities under this program.

Cost Avoidance Opportunities:

1. The Lake Berryessa Resort Improvement District benefits from cost-savings associated with its relationship with the County of Napa Public Works Department. Notable cost-savings associated with this relationship include providing the District with access to a wide range of administrative and operational support, including billing and collections, engineering, and maintenance personal.

2. The Lake Berryessa Resort Improvement District would benefit from a regional study evaluating whether cost avoidance opportunities are available with respect to joint agency practices with other special districts serving the Lake Berryessa area. Notably, a regional study may identify opportunities to realize savings relating to infrastructure and equipment purchases, engineering services, and administrative costs.

Opportunities for Rate Restructuring:

1. The Lake Berryessa Resort Improvement District is presently evaluating a water rate increase to support increased operational and maintenance costs and to help fund capital improvements. Future studies should examine the relationship between possible rate increases and the District's ability to encourage water conservation while generating sufficient revenues to meet cost of service.

2. Although the Lake Berryessa Resort Improvement District's water rates are among the lowest of all public water service providers in Napa County, its availability fee, which is collected as part of a special parcel tax, is among the highest. This dichotomy in rates discourages water conservation and encourages a false perception of service costs.

3. It is appropriate for the Lake Berryessa Resort Improvement District to amend its water rates to be more reflective of the actual costs of providing water service. An increase in rates, which last occurred seven years ago, would provide the District with additional revenue needed to finance capital improvements and help to prevent future operating deficits.

4. The Lake Berryessa Resort Improvement District should review the merits of modifying its flat water usage rate schedule in favor of a tiered schedule. A tiered rate schedule enables service providers to recover the costs of providing service to high-use customers while strengthening water conservation efforts by providing a financial incentive to conserve.

Opportunities for Shared Facilities:

1. The Lake Berryessa Resort Improvement District maintains an informal relationship with the Napa-Berryessa Resort Improvement District to share staff, equipment, and materials on a need basis. This relationship provides a mechanism for both districts to pursue cost-efficiencies with one another with respect to mutually beneficial improvements and projects within their respective service areas.

2. The Lake Berryessa Resort Improvement District should explore opportunities to share costs with the Spanish Flat Water District based on their proximity and similar service area characteristics.

Government Structure Options:

1. The Lake Berryessa Resort Improvement District is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of the District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. Due to an amendment to its principal act, the Resort Improvement District Law, the Lake Berryessa Resort Improvement District is limited to providing only water and sewer service. Additional analysis is needed to determine whether any additional municipal services originally authorized for the District to provide are required or warranted with respect to meeting the service needs of the community.

   At the time of its formation, the Lake Berryessa Resort Improvement District was authorized to provide twelve municipal services: water, sewer, fire protection, community planning, garbage collection and disposal, public recreation, street lighting, mosquito abatement, maintenance of a police department, road construction, and general public works.

3. The Lake Berryessa Resort Improvement District has been successful in achieving its original service objective to provide water and sewer service to the Berryessa Estates community. However, due to its financial constraints, it is unclear whether the District under its present organization can continue to effectively meet the service needs of the community.

4. Preliminary analysis suggests that there may be advantages to pursuing a change in organization for the Lake Berryessa Resort Improvement District, and that consolidation with the Napa-Berryessa Resort Improvement District and the Spanish Flat Water District may be appropriate. This analysis indicates that reorganization of these districts may establish economies of scale necessary to enhance operational and service levels within their respective jurisdictional boundaries and help to formalize service provision in the Lake Berryessa area.

5. Pursuant to California Government Code §56378, LAFCO should conduct a governance study to evaluate the merits of reorganizing the Lake Berryessa Resort Improvement District, Napa-Berryessa Resort Improvement District, and the Spanish Flat Water District. This study should be completed prior to the next scheduled service review of the District.

Evaluation of Management Efficiencies:

1. The Lake Berryessa Resort Improvement District provides an annual summary of past and projected revenues and expenditures relating to its water service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of the governing body, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

2. The Lake Berryessa Resort Improvement District is indirectly managed by the Napa County Flood Control and Water Conservation District, which in turns, maintains an informal arrangement with County Public Works for administrative and operational support. This arrangement has helped to facilitate a mistaken perception of service responsibilities within the community. The Lake Berryessa Resort Improvement District should make a concerted effort to remind its constituents that it, not the County, is the local water use authority for the community.

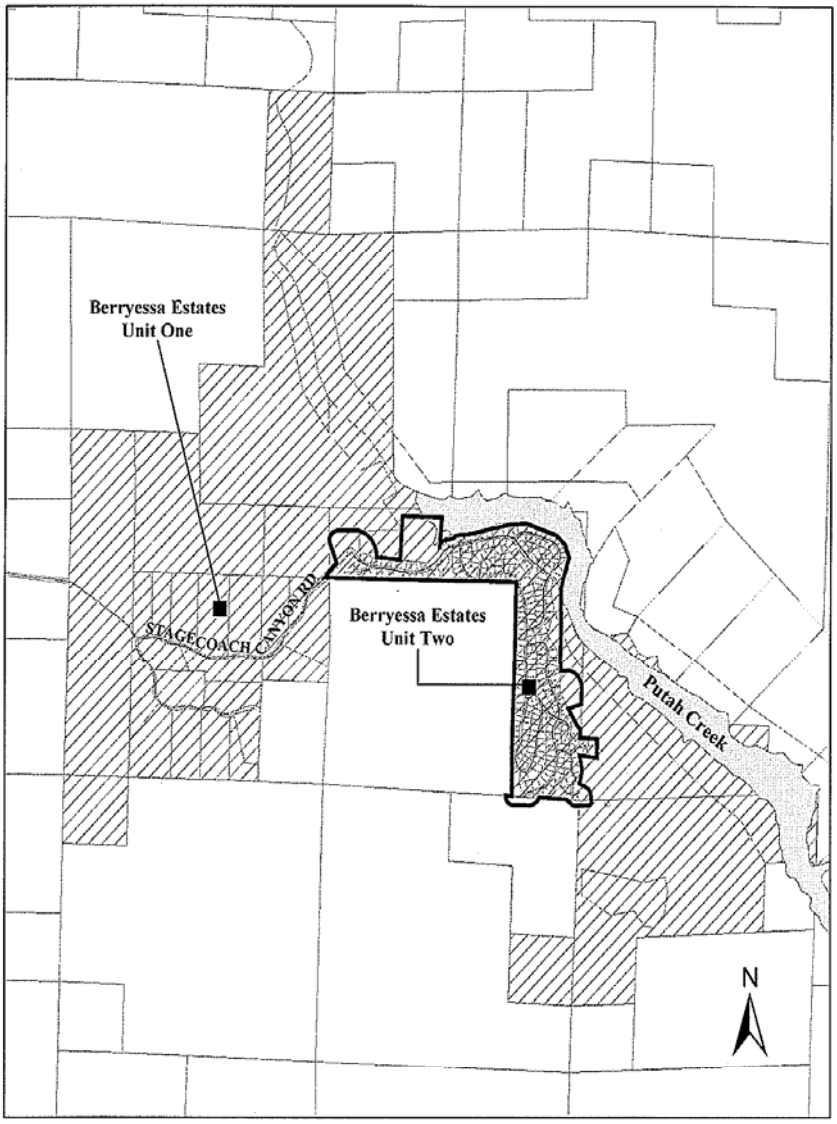
Local Accountability and Governance:

1. The Lake Berryessa Resort Improvement District meetings are conducted on a need basis at the County of Napa's Administration Building and are open to the public. To improve its local accountability, the District should adopt a regular meeting schedule. Regularly scheduled meetings provide an opportunity for the District's constituents to ask questions of their governing board, while helping to ensure that service information is being effectively communicated to the public.

2. The Lake Berryessa Resort Improvement District makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

3. The Lake Berryessa Resort Improvement District's water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Lake Berryessa Resort Improvement District



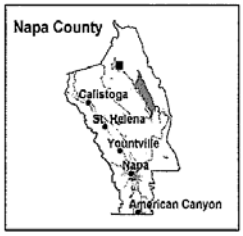
LEGEND

District Boundary

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP



Prepared by: KS

LOS CARNEROS WATER DISTRICT

OVERVIEW

Established in 1978, the Los Carneros Water District (LCWD) was formed to provide reclaimed water to a southwest portion of Napa County known as "Carneros." The District's formation was purposely sought by local landowners to facilitate an agreement with the Napa Sanitation District (NSD) for the planning, construction, and operation of projects necessary for the delivery of reclaimed water for agricultural use. Although various proposed reclamation projects were considered over the next 25 years, none were implemented. As a result, the District has remained dormant with no immediate plans to initiate operations or services.

LCWD's formation followed several years of local efforts with respect to identifying suitable water supply alternatives to creek diversions and groundwater withdraws. In 1976, a group of landowners organized the "Carneros Area Water Committee" and petitioned the Napa County Board of Supervisors to authorize a study evaluating potential agricultural water supply projects for the Carneros area. The study was conducted by the Napa County Flood Control and Water Conservation District and examined irrigation requirements for the Carneros area relating to topography, soil, and climate conditions. Noting that the predominant land use within Carneros was devoted to dry farming, and to a lesser extent vineyards and orchards, the study concluded that the approximately 7,000-acre area would be best served with treated wastewater from an advanced wastewater facility that was under construction by NSD.[24] Following the release of the study, meetings were convened between the Carneros Area Water Committee and NSD to discuss possible supply arrangements involving reclaimed water. NSD agreed to negotiate a reclaimed water supply agreement once the landowners formed a public agency capable of executing a contract agreement.

In 1977, following several public meetings with the Carneros Area Water Committee, LAFCO approved the proposal to form LCWD under the California Water District Act.[25] Notably, LAFCO conditioned its approval by requiring the District to voluntarily dissolve if an agreement was not reached with NSD for the delivery of no less than 2,000 acre-feet of reclaimed water by January 1, 1980. In 1983, after receiving a deadline extension by LAFCO, the District reached a 40-year agreement with NSD providing it the right to obtain up to 2,000 acre-feet of secondary (restricted) treated wastewater annually for agricultural use. The District agreed to be responsible for the design, planning, financing, and construction of all improvements necessary to convey and distribute reclaimed water from NSD's Soscol Wastewater Treatment Plant to the District. In exchange for taking

[24] The study projected costs for a conveyance and distribution system using two planning alternatives: minimum and maximum service requirements. The minimum service system, which included a reduced service area encompassing low-lying lands and excluded storage facilities, was projected to cost approximately $1,750,000. A maximum service system, which included service to all parcels within the region and storage facilities, was projected to cost approximately $7,350,000. Comparatively, the maximum system provided the Carneros area with greater planning flexibility, including the ability to accommodate potential changes in land use patterns by alternating between secondary and tertiary treated wastewater.

[25] Landowners voted to approve the formation of LCWD on March 7, 1978.

reclaimed water, the District would receive an annual payment from NSD. This payment would be equal to the amount in savings incurred by NSD for not having to expend on additional storage and treatment for the treated wastewater used by the District for each calendar year. NSD agreed to manage its wastewater facilities in order that 2,000 acre-feet of reclaimed water would remain available to the District. Water quality would be consistent with standards established by federal, state, and local authorities. The agreement included a timetable allowing NSD the right to contract with others for the amount and/or portion of reclaimed water entitled to LCWD in the event the District was not utilizing its entitlement by January 1, 1989.

In response to NSD's requirement that LCWD utilize its allocation of reclaimed water by January 1, 1989 or risk the loss of entitlement, LAFCO issued its own timetable for the District. LAFCO required that the District dissolve unless a conveyance and distribution system was in place by the aforementioned date. By 1989, the District completed design plans for a distribution and conveyance system as well as secured required permits with the San Francisco Bay – Regional Water Quality Control Board. After receiving an extension from LAFCO to pursue financing, the District secured a low-interest loan from the State of California to begin construction on its reclamation project. Implementation of the District's reclamation project, however, was suspended due to design and oversight concerns expressed by NSD.

Beginning in the early 1980s, much of the agricultural land in the Carneros region became vineyards, prompting a change in water quality requirements within LCWD. Rather than requiring only secondary treated wastewater for irrigating dry farming crops, the influx of vineyards prompted the District to procure tertiary (unrestricted) treated wastewater to meet stricter federal and state water quality requirements.[26] In order to produce tertiary treated wastewater, NSD would incur additional treatment expenses not covered under the 1983 agreement with the District. To assess interest in unrestricted reclaimed water in the Carneros area, NSD convened several meetings with local landowners. Following a strong show of support by landowners and the approval of a working group formed by LCWD, the District and NSD reached agreement on a new reclaimed water supply contract in 1995. This agreement terminated the terms and conditions of the 1983 agreement and transferred the responsibility for the planning, financing, construction, operation, and maintenance of a reclaimed water distribution system to NSD. The distribution system, referred to as the "Carneros Recycled Water Service Project," was planned to include a network of 18-inch to 36-inch pipelines conveying unrestricted treated wastewater from the Soscol Wastewater Treatment Plant to Carneros. The project proposed constructing a pipeline underlaying the Napa River, through the Stanly Ranch area, and along county roads and easements until entering into the District's service area. NSD's willingness to execute the agreement with the District, however, was predicated on reaching agreements with individual landowners. NSD wanted assurances that there were a sufficient number of committed users before commencing on a project anticipated to cost approximately $3,500,000. During the course of the negotiations, three prominent landowners raised concerns regarding the

[26] Title 22 of the California Code of Regulations prohibits the use of secondary treated recycled water on food crops that involves contact with the edible portion of the crop; tertiary treated wastewater is permissible.

potential for negative public reaction to the use of reclaimed wastewater on vineyards. These property owners wanted the ability to terminate their agreements with NSD for reclaimed water at their discretion. At the same time, other landowners in the District wavered on the need for reclaimed water service. When the District was formed, California was a year removed from a drought that severely taxed local water supplies. By the 1990s, many landowners were less concerned with existing and future water supplies as they were 15 years earlier. Unwilling to meet the conditions of the landowners seeking exit clauses, NSD suspended implementing the contract and applied the money earmarked for the Carneros Recycled Water Service Project to finance other reclamation projects. The 1995 agreement between both agencies remains in effect until mutually terminated or upon written notice by NSD that it no longer intends to implement its planned reclamation project.

GOVERNANCE

LCWD was organized under the California Water District Law, Division 13 of the California Water Code. The District's governing body is comprised of an elected five-member board of directors who serve staggered four-year terms. In order to serve, a board member must be a landowner, legal representative, or a designated representative of land within the District. Elections are based on the landowner-voter system allowing each landowner one vote for each dollar that his or her property is assessed (based on last assessment roll). In addition to electing a president, the board is required to appoint a secretary whose responsibilities include keeping records of all board proceedings. Services can be financed through water and sewer usage and standby charges, the sale of power to a public utility or agency, the lease or sale of surplus water, assessments, and general obligation and revenue bonds.

LCWD is currently without a fifth director due to a vacated term. The District has not conducted a board meeting for several years. Board members have met on an infrequent basis to discuss specific inquiries involving the District, including most recently meeting with LAFCO staff. The District does not maintain an office or a phone line dedicated to District activities. Meetings have taken place in the past at the Los Carneros elementary school and the homes of board members. Pursuant to the California Water District Law (Water Code 34000 et. seq.), the District is authorized to provide the following municipal services:

- The production, storage, and distribution of water for irrigation, domestic, industrial, and municipal purposes and/or any associated reclamation works (WC §35401)

- The acquisition, construction, and operation of facilities for the collection, treatment, and disposal of sewage, waste, and storm water (WC §35550)

- The construction, operation, and/or maintenance of facilities for the generation of hydroelectric power (WC §35570)

LCWD has never provided these services.

OPERATIONS

LCWD does not provide services or operations.

ADOPTED BOUNDARIES

LCWD's adopted service area is comprised of a contiguous, unincorporated area consisting of approximately 5,772 acres. The District's adopted sphere of influence encompasses the majority of its jurisdictional boundary with one notable exception: land located north of State Highway 12. The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agriculture Watershed and Open Space" and "Agricultural Resource." Zoning for this area is primarily comprised of two standards: "Agricultural Watershed" and "Agricultural Watershed: Airport Compatibility."[27] Both zoning standards require minimum parcel sizes of 160 acres.[28]

LCWD – Adopted Boundaries	
District Boundary:	5,772 acres *****
Sphere of Influence Boundary:	5,614 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

WATER SUPPLY

LCWD does not own, contract, or maintain rights to water supplies. Water supplies for agricultural and domestic uses by landowners within the District are primarily satisfied through creek diversions and groundwater withdraws. Creek diversions are drawn from two tributaries of the Napa River: Carneros Creek and Huichica Creek, while groundwater is pumped from the Carneros Valley Basin. Due to increasing demands, environmental restrictions, and concerns involving overdraft, both water sources (surface and groundwater) are considered inadequate to sustain long-term agricultural demands within the District.

[27] A 1.19-acre portion of an 11.83-acre parcel (APN: 047-022-005) located within LCWD's jurisdictional and sphere of influence boundaries is zoned "Commercial Limited." In the past, this split-zone parcel has accommodated a restaurant but is currently vacant. This zoning standard requires minimum parcels sizes of one acre. (If both public water and sewer facilities are available, the minimum parcel size is reduced to one-half acre.)

[28] There are 11 parcels located within LCWD that are outside its adopted sphere of influence. Ten of the eleven parcels are zoned Agricultural Watershed. The remaining parcel is zoned "Agricultural Watershed: Produce Stand."

WATER DEMAND

LCWD estimates current reclaimed water demand within the District is between 1,000 and 2,000 acre-feet per year.

WATER TREATMENT FACILITIES

LCWD does not own, lease, or operate treatment facilities.

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

LCWD does not own, lease, or operate distribution systems or storage facilities.

RATE SCHEDULE

LCWD does not have an adopted rate schedule.[29]

FINANCIAL

LCWD does not have an adopted budget for 2002-2003. Although it is empowered under the California Water Code to generate revenue through assessments, bonds, and water use and standby charges, the District currently remains without revenue, expenses, or a reserve fund.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Los Carneros Water District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[30] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

[29] Under its agreement with the Napa Sanitation District (NSD), LCWD conveys all rights and powers with respect to establishing reclaimed water rates within its jurisdictional boundary conveys. As of January 2003, NSD's rate schedule for reclaimed water service is $0.77 per 1,000 gallons.

[30] LAFCO Resolution No. 04-05, adopted February 26, 2004.

Infrastructure Needs or Deficiencies:

1. The Los Carneros Water District was formed in 1978 for the purpose of facilitating an agreement with the Napa Sanitation District for the delivery of reclaimed water for agricultural use. Although various proposed reclamation projects were considered over the next 25 years, none were implemented. As a result, the District remains dormant with no infrastructure or facilities relating to the provision of reclaimed water service.

2. Existing water supplies within Los Carneros Water District's jurisdictional boundary are satisfied through creek diversions from Carneros and Huichica Creeks and groundwater withdraws from the Carneros Valley Basin. These supplies are inadequate to sustain long-term agricultural demands within the District.

3. Due to increased demands and stronger environmental standards within their watersheds, Carneros and Huichica Creeks may be placed on the State Water Resources Control Board's list of fully appropriated stream systems, enhancing the need for an alternative water supply for landowners within the Los Carneros Water District.

   California Water Code Section §1026 specifies that once a stream system has been designated as fully appropriated, the State Water Resources Control Board can no longer accept applications to appropriate water, and may cancel all pending applications. Average time to process an application is five to seven years.

4. There is limited information relating to the availability of groundwater within Los Carneros Water District's jurisdictional boundary. The District should work with the Napa County Resource Conservation District to begin evaluating groundwater capacities and enhancement opportunities in the Carneros area.

   Property owners report that the local groundwater basin (Carneros Valley Basin) is vulnerable to overdraft as a result of declining water levels and is susceptible to saltwater intrusion due to the close proximity of the Napa River.

5. In the event of a drought, existing water supply constraints within Los Carneros Water District's jurisdictional boundary would be compounded and agricultural production would likely be subject to significant losses.

6. The Los Carneros Water District does not own, lease, or operate any facilities relating to the collection and treatment of wastewater, a prerequisite for producing reclaimed water. As a result, the District's ability to develop reclaimed water service is dependent upon importing supplies from an outside provider.

7. The development of reclaimed water service within Los Carneros Water District's jurisdictional boundary offers the promise of lessening the demand for creek diversions and groundwater withdraws, and promotes the beneficial use of recycled water for agricultural use.

Growth and Population Projections:

1. The Los Carneros Water District is under the land use authority of the County of Napa. Over 99 percent of land located within the District is zoned "Agricultural Watershed," "Agricultural Watershed: Airport Compatibility," or "Agricultural Watershed: Produce Stand." These zoning standards help to restrict future development within the District by requiring minimum parcels sizes of at least 160 acres.

2. Less than one percent of land located within Los Carneros Water District's jurisdictional boundary is zoned for non-agricultural use by the County of Napa. This area is limited to a single split zone parcel zoned "Commercial Limited," which upon grant of a use permit, could accommodate a variety of commercial uses within the District. Based on Measure J, which requires a vote of the citizens to change the zoning standard of any unincorporated agricultural property in Napa County through 2020, it is unlikely that the development of this parcel would induce the conversion of any adjacent agricultural land for commercial use or alter the service needs of the community other than reclaimed water service.

3. There are 28 parcels located within Los Carneros Water District's jurisdictional boundary under "Williamson Act" contracts with the County of Napa. These parcels represent approximately 40 percent of the entire jurisdictional boundary and help to ensure the preservation of agriculture and open space as predominant land uses within the District.

   Parcels under Williamson Act contracts are required to maintain their agricultural and open space land uses over the course of renewable 10-year periods in exchange for reduced property tax assessments.

4. The development of reclaimed water service within Los Carneros Water District's jurisdictional boundary would not induce growth beyond what is already contemplated by the land use plans adopted by the County of Napa.

Financing Constraints and Opportunities:

1. Under its agreement with the Napa Sanitation District, the Los Carneros Water District is not responsible for costs relating to the construction or operation of facilities involved in the delivery of reclaimed water service within its jurisdictional boundary. This agreement (if realized) implies that the Napa Sanitation District will pursue future financing opportunities as it relates to reclaimed water service for the District through a surrogate role.

This agreement remains valid until mutually terminated or upon written notice by the Napa Sanitation District that it no longer intends to serve the District.

2. The Los Carneros Water District is empowered under the California Water Code to generate revenue through assessments, bonds, and water use and standby charges. The District has elected not to pursue the development of revenue streams or cash reserves due to its agreement with the Napa Sanitation District that specifies it is not responsible for costs relating to the construction or operation of facilities involved in the delivery of reclaimed water service within its jurisdictional boundary. Accordingly, the District is not capable of issuing mailings, financing studies, or contracting with outside agents to evaluate alternative service or financing opportunities.

3. In 2002, California voters approved Proposition 50. This proposition authorizes the sale of $3.44 billion dollars in general obligation bonds to help government agencies to develop and enhance local water resources and related infrastructure systems through grant financing programs. Although funding is expected to be competitive, this proposition provides an opportunity for the Los Carneros Water District to secure financing for a reclaimed water delivery system if it determines that its agreement with the Napa Sanitation District is no longer viable. The District should contact the Department of Water Resources to begin exploring funding opportunities under this proposition.

Cost Avoidance Opportunities:

1. The Los Carneros Water District's agreement with the Napa Sanitation District all but eliminates costs for the District with respect to the delivery of reclaimed water service to its constituents. Notable cost-savings associated with this agreement includes providing the District unconfined access to a wide range of administrative and operational support, including engineering and maintenance personnel.

Opportunities for Rate Restructuring:

1. The Los Carneros Water District does not have an adopted rate schedule for reclaimed water service. Under its agreement with the Napa Sanitation District, the District conveys all rights and powers relating to establishing reclaimed water rates within its jurisdictional boundary.

Opportunities for Shared Facilities:

1. Through its contractual relationship with the Napa Sanitation District, the Los Carneros Water District may benefit from collaborative reclamation projects under evaluation by the North Bay Watershed Association: a stewardship program comprised of public water and wastewater agencies in Sonoma, Marin, and Napa

Counties. The organization is currently evaluating the feasibility of bringing together several water and wastewater agencies in the North Bay for the purpose of constructing a jointly-operated reclaimed water delivery system for beneficial uses throughout the San Pablo Bay watershed. Notably, this project may provide an opportunity for the Napa Sanitation District to share costs with other agencies towards the construction of facilities for the delivery of reclaimed water to the District as part of a larger collaborative reclamation project.

Government Structure Options:

1. The Los Carneros Water District is empowered under the California Water District Act to provide three municipal services: water, sewer, and hydroelectric power. Due to its predominant agricultural land use designation under the County of Napa's General Plan, the District does not require a full range of municipal services. Only water for irrigation of agriculture is an appropriate and needed service within the District.

2. The Los Carneros Water District has been successful in meeting its original objective to facilitate an agreement with the Napa Sanitation District for the delivery of reclaimed water on behalf of landowners within its jurisdictional boundary. Through this agreement, the District provides a safeguard for the Napa Sanitation District with respect to developing its planned reclamation project for the Carneros area. Although it has not been developed, Napa Sanitation District's planned project remains a viable solution to meeting the District's needs to secure reclaimed water service on behalf of local landowners within the timeframe of this study.

3. It is unknown if there are advantages to pursuing a change in reorganization for the Los Carneros Water District due to the limited information concerning alternative government structures and any cost-benefits with respect to meeting the service needs of the affected area. Additional information is needed to determine whether an alternative government structure would better serve the needs of the District's constituents as it relates to improving delivery service, public participation, and local accountability.

4. There are two other public agencies empowered to provide water service for agricultural use whose jurisdictions overlap that of the Los Carneros Water District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

5. There are three public agencies with service areas in reasonable proximity to the Los Carneros Water District that produce reclaimed water supplies: the Napa River Reclamation District No. 2109, Napa Sanitation District, and the Sonoma

County Water Agency. Of these three agencies, only the Napa Sanitation District is readily capable of extending service to the District based on its available capacity and supply of tertiary-treated wastewater.

The Napa River Reclamation District No. 2109 produces only 10-12 acre-feet of tertiary-level treated wastewater per year, while the Sonoma County Water Agency provides only secondary-level treated wastewater within the Carneros region of Sonoma County. In addition to these operating constraints, both agencies have expressed no interest in expanding service to the District.

6. Due to a limited number of alternative service providers, the Napa Sanitation District offers the best opportunity for providing reclaimed water supplies to the Los Carneros Water District.

Evaluation of Management Efficiencies:

1. Los Carneros Water District has an agreement with the Napa Sanitation District that has deterred its board members from being proactive with respect to exploring alternative service options. The District should establish a timetable requiring it to determine whether its agreement with the Napa Sanitation District is still viable, and if not, begin to evaluate alternative service options. This timetable should conclude prior to LAFCO's next review of the District.

2. The Los Carneros Water District should convene a public meeting to evaluate support among its constituents with respect to executing individual service agreements for reclaimed water service with the Napa Sanitation District. Upon determining the intent of its constituents, the District should convey its findings to the Napa Sanitation District. This information will help the Napa Sanitation District make an informed decision as to whether there is sufficient commitment among local property owners before committing its ratepayers to the costs of implementing its planned reclamation project for the area.

Local Accountability and Governance:

1. The Los Carneros Water District's governing body is comprised of four volunteer directors who are all serving expired terms. These board members have been reappointed in lieu of other candidates seeking election. The lack of willing participation among constituents to serve on the District's governing board has contributed to its complacency towards galvanizing support for executing individual service agreements with the Napa Sanitation District and exploring alternative service options.

2. The Los Carneros Water District should appoint a fifth director to continue its established practice of maintaining a five-member board of directors. The appointment of a fifth director will help to ensure a quorum and strengthen the Board's accountability to the public.

3. To enhance its public outreach efforts, the Los Carneros Water District should begin to recruit and acquaint new board member candidates with respect to local service goals and objectives in anticipation of future board member departures. These efforts will help to ensure a viable pool of successor candidates, and provide an opportunity to cultivate new perspectives and approaches that may prove successful in meeting the service needs of the District.

4. The Los Carneros Water District has not conducted a regularly scheduled board meeting for several years. To ensure compliance with its enabling act, while enhancing community input, the District should adopt an annual calendar specifying dates, times, and locations for future board meetings with written notices made available to all local property owners.

   California Water Code §34802 requires board members hold regular meetings at such time and place as agreed upon by resolution.

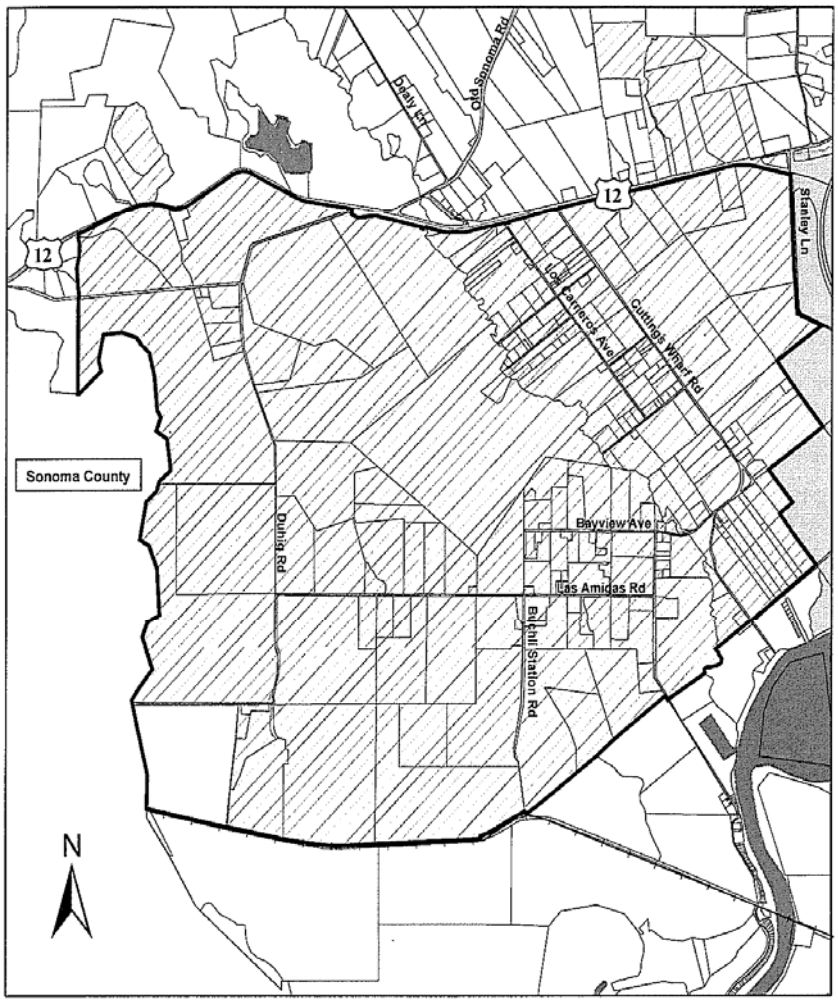
5. The Los Carneros Water District and its constituents would benefit from regularly scheduled board meetings at fixed times and locations. Notably, this would enhance the District's local accountability by providing an opportunity for its constituents to ask questions of their elected representatives, while helping to ensure that information is being effectively communicated to the public in a timely and efficient manner.

6. To ensure its compliance with the Ralph M. Brown Act, the Los Carneros Water District must ensure that their deliberations are conducted in an open and transparent manner. These efforts will strengthen the District's accountability, and help to facilitate public participation in its decision making process.

7. The Los Carneros Water District must improve its public dialogue to help ensure that other agencies in Napa County are aware of its activities and plans. At a minimum, this should include fulfilling its administrative duties relating to filling all required documentation with the State of California and the County of Napa, and provide LAFCO with annual progress reports with respect to developing reclaimed water service.

8. The Los Carneros Water District should work with the County of Napa, Napa Sanitation District, and LAFCO to evaluate whether there are better alternatives to its current government structure. This evaluation should be facilitated by LAFCO and based on local landowners needs in relation to designated land uses and service capabilities of the Napa Sanitation District. These efforts will help address the question of how best to deliver reclaimed water to the District within a reasonable timeframe, while strengthening its long-term accountability to the public.

Los Carneros Water District



LEGEND

- Sphere of Influence
- District Boundary
- City of Napa

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

NAPA-BERRYESSA RESORT IMPROVEMENT DISTRICT

OVERVIEW

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. The District was formed under the Resort Improvement District Law, which was enacted by the California Legislature in 1961. The law was created to facilitate the formation of public agencies capable of providing a wide range of municipal services in areas best suited for recreational and seasonal uses. Along with water and sewer, other prominent services authorized under the law included fire protection, planning, public recreation, and street lighting. It was expected that the District would offer additional services authorized under the law as needed. However, in 1971, the law was amended to preclude a district from providing services that were not already being provided as of July 1, 1970. At the time of the amendment, the District had only established water and sewer service.

NBRID's formation was proposed by the Berryessa Highlands Development Company and the Lake Berryessa Development Company. Prior to proposing formation of the District, the Berryessa Highlands Development Company had approached the County of Napa to express its interest in developing a subdivision in the Lake Berryessa area. It was anticipated that the subdivision, to be known as "Berryessa Highlands," would be developed in phases and include approximately 2,000 units. The Lake Berryessa Development Company, operator of the Steele Park Resort, also supported formation of the District in order to provide water and sewer service for its approximate 510-acre resort.[31] To assist in the development of the area, the Board of Supervisors supported the formation of the District and agreed to serve as its governing body.

In 1967, NBRID issued general obligation bonds to finance the construction of water and sewer facilities to serve the Steele Park Resort and the first two phases of Berryessa Highlands, "Unit One" and "Unit Two." These facilities included a water treatment plant, storage facilities, and a distribution system. Construction of these facilities was completed in 1968. That same year, the Board of Supervisors designated the Napa County Flood Control and Water Conservation District (NCFCWCD) to provide operation and administrative services for the District.[32] Water supplies for the District were initially drawn from Lake Berryessa through an informal agreement with the County. This arrangement was formalized in 1975 following an agreement between the District and NCFCWCD. Renewed in 1999, the agreement provides the District with an annual entitlement of 200 acre-feet of water from Lake Berryessa through 2024.

[31] The Steele Park Resort, along with six other resorts, was developed in the late 1950s following an agreement with the County to provide recreational and commercial services to the public at Lake Berryessa. In 1975, administrative duties concerning recreational development at Lake Berryessa were later assumed by the U.S. Department of the Interior, Bureau of Reclamation.

[32] Based on an informal agreement with the NCFCWCD, the County Public Works Department currently provides operation and administrative services for NBRID.

In 1996, NBRID authorized a status report on its water and sewer facilities.[33] The report was in response to damage caused by the previous year's storms along with increased federal and state drinking water standards. The report noted that a significant portion of the District's reserves had been recently used on maintenance improvements to its water system. The report also noted that the County had been using money from its general fund to help cover the cost of larger improvement projects on behalf of the District, such as a new water intake system. However, beginning in 1996, the report noted that these funds would no longer be available to the District. As a result, additional revenue was needed to maintain operations and replenish the District's reserves in order to fund future capital improvements. Notable capital improvements identified in the report included repairing the District's 500,000 gallon storage tank and constructing a backup water treatment filter system.

Following the release of the 1996 status report, NBRID increased water usage rates to help meet operational and maintenance costs. The increase, which was implemented over a three year period, raised rates by approximately 75 percent. In 1997, the District conducted a special election for the purpose of approving a new parcel tax. However, the parcel tax, which was sought to replenish reserves and fund new capital improvements, was defeated by District voters.

A prominent planning factor for NBRID involves the limited development within its primary service area: Berryessa Highlands. As noted, Berryessa Highlands was intended to include the development of a multi-phased 2,000-unit subdivision. Due to a change in market demand, however, only the first two phases of Berryessa Highlands were developed. Further, development within these two phases, Unit One and Unit Two, has been limited. Notably, while Unit One involved the creation of 202 residential lots and Unit Two involved the creation of 359 residential lots, only 55 percent of these lots were developed as of December 2002.[34]

GOVERNANCE

NBRID was organized under the Resort Improvement District Law, Division 11 of the California Public Resource Code. The District's governing body consists of the Napa County Board of Supervisors, who are elected to staggered four-year terms by district voting.[35] Supervisors are required to conduct the business of the District in accordance with the provisions of County Service Area Law. District elections are based on a resident-voter system. Potable water services can be financed through water usage and availability charges, assessments, and general obligation and revenue bonds.

[33] The report was conducted by the County Public Works Department and was prepared in conjunction with an evaluation of the facilities of the Lake Berryessa Resort Improvement District.

[34] Estimate based on the total number of service connections (310) within the Berryessa Highlands.

[35] The Board of Supervisors is authorized to delegate any of its governance powers to a five-member board of directors. Four of the five directors must be elected by NBRID voters, with the fifth director being the supervisor representing the affected area. However, upon the unanimous vote of the directors, the board may consist of five members who are all elected resident voters of the District.

NBRID's board meetings are conducted on a need basis, and typically are called to address budget issues, project approval, and rate increases. Meetings are conducted at the County of Napa's Administration Building and are open to the public. Pursuant to the Resort Improvement District Law (Public Resource Code 13000 et. seq.), the District was originally authorized to provide the following municipal services:

- To supply water for domestic, irrigation, sanitation, industrial, fire protection, and/or recreation uses (PRC §13070-a)
- The collection, treatment, and disposal of sewage, waste, and storm water (PRC §13070-b)
- Fire protection (PRC §13070-c)
- Community planning (PRC §13070-d)
- The collection and disposal of garbage (PRC §13070-e)
- Public recreation (PRC §13070-f)
- Street lighting (PRC §13070-g)
- Mosquito abatement (PRC §13070-h)
- The equipment and maintenance of a police department or other police protection (PRC §13070-i)
- Road construction (PRC §13070-j)
- Public work improvements, including the construction of bridges, culverts, curbs, gutters, and drains (PRC §13070-k)
- The construction of parking and transportation facilities (PRC §13070-l)

In 1971, the Resort Improvement District Law was amended limiting NBRID to providing only the first two services listed above.

OPERATIONS

Under the direction of the Napa County Board of Supervisors, the Napa County Public Works Department provides administrative and operational services for NBRID's potable water and sewer systems. The County employs one full-time licensed operator to manage the District's day-to-day operations. The operator is on call 24 hours a day, 7 days a

week, to respond to reported emergencies. In addition to the full-time operator, the District and the Lake Berryessa Resort Improvement District share a full-time licensed water and sewer treatment supervisor. Customer inquiries, including billing and service questions, are directed to the Public Works Department. Extra help is made available to the District on a need basis. Currently, two extra help personnel assist with operations at both the District and the Lake Berryessa Resort Improvement District. The District's field office is located next to its sewer treatment plant.

ADOPTED BOUNDARIES

NBRID's adopted service area is comprised of a contiguous, unincorporated area consisting of approximately 1,899 acres. The District's adopted sphere of influence encompasses less than 30 percent of all land located within its jurisdictional boundary. The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agricultural, Watershed and Open Space" and "Rural Residential." Zoning for this area is comprised of three standards: "Agricultural Watershed," "Planned Development," and "Residential Country."[36] Agricultural Watershed and Residential County zoning standards require minimum parcel sizes of 160 and 10 acres respectively. There are no minimum sizes for parcels zoned Planned Development.

NBRID – Adopted Boundaries	
District Boundary:	1,899 acres *****
Sphere of Influence Boundary:	509 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

WATER SUPPLY

NBRID's water supply is drawn from Lake Berryessa.[37] The District's right to draw water from Lake Berryessa is secured through a 1999 agreement with 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 districts, including NBRID.

[36] NBRID land located outside of its adopted sphere of influence is zoned Agricultural Watershed and Residential Country.

[37] Lake Berryessa was developed by the United States Department of the Interior, Bureau of Reclamation, as part of its Solano Project. The Solano Project originally intended to provide Napa, Yolo, and Solano Counties with a reliable source of water for agricultural and domestic uses. After concluding that the Berryessa Valley would be an ideal location for the creation of a water reservoir by damming Putah Creek, the Bureau of Reclamation approached all three counties about participating in a joint project. However, both Napa and Yolo decided against participating in the project, leaving Solano County as the sole participant. The Monticello Dam was completed in 1957, and the formation of Lake Berryessa was finished by 1964. Based on its participation, Solano County maintains the majority of water rights to Lake Berryessa. Lake Berryessa has an approximate storage capacity of 1.6 million acre-feet.

As a subcontractor to NCFCWD, the District is annually entitled to 200 acre-feet of water from Lake Berryessa through 2024.

NBRID – Available Water Supply (acre-feet)	
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, 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.[38] (Note: One of these residential service connections serves a total of eight parcels. These parcels are part of a 10-lot subdivision known as "Oakridge Estates," which is located directly north of Unit Two.)

NBRID – 2001-2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(3). Estimate based on the total number of assigned equivalent dwelling units (EDU) and multiplied by a service factor of 2.8. EDU assignments for the District include 320 for single-family residences and 228 for the Steele Park Resort.

Projected water demands for NBRID are not available.

[38] The Steele Park Resort is one of seven concessionary resorts under contract with the United States Department of the Interior, Bureau of Reclamation, to provide commercial and recreational services to the public at Lake Berryessa. Notably, the resort rents 142 mobile home spaces to seasonal residents. Tenants are allowed to live in their mobile homes for up to 175 days per year (no more than 90 consecutive days) and are provided with potable water and sewer hook-ups. The resort is open year-round, with peak operations between May and September. The resort's daytime population during this period averages 2,500. Mobile home spaces are secured through one-year leases.

WATER TREATMENT 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 provides chemical and physical treatment of raw water generated from an intake pump system at Lake Berryessa. The treatment process begins as raw water captured by two submersible pumps is conveyed through a transmission line connecting the intake system to the Napa-Berryessa WTP. Pro Pac (coagulant) and chlorine (disinfectant) are added and mixed as the raw water is conveyed into a clarifier. Raw water is detained in the clarifier to facilitate the sedimentation of solids in the water. Solids are removed as water is cycled through a filter tank before entering into a 35,000 gallon clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. The finished water remains in the clearwell tank until storage levels within the distribution system require recharge. The Napa-Berryessa WTP has a treatment capacity of approximately 425 gallons per minute, resulting in a daily treatment capacity of 612,000 gallons.

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

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

NBRID's water distribution system receives and distributes treated water generated from the Napa-Berryessa WTP. 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 overlays six water pressure zones and is served (recharge and system pressure) by a 500,000 gallon storage tank. Due to the service area's topography, a pump station is required to lift treated water from Napa-Berryessa WTP's clearwell tank into the distribution system and recharge the storage tank.

The distribution system operates on a supply and demand basis and responds to storage levels within the District's storage tank. When water levels within the storage tank fall below a designated operating level, treated water is discharged from the clearwell tank to the storage tank. The storage tank is located above the distribution system and uses gravity to maintain pressure in the system.

NBRID – Distribution Storage Capacity	
Storage Tank 1:	500,000 gallons
TOTAL:	**500,000 gallons***

* Total does not include storage capacity at Napa-Berryessa WTP's clearwell tank (35,000 gallons).

RATE SCHEDULE

NBRID customers are charged two fees for water service: a monthly usage fee and an annual availability fee. Rates for these charges are divided between residential and commercial customers. The usage charge, which is the same for both residential and commercial customers, is based on the amount of water delivered and is measured in units of 1,000 gallons. The availability fee for residential customers is fixed and charged to all parcels that are metered for water service. Commercial customers are charged a fixed annual availability fee based on the number of equivalent dwelling units that are served by the service connection.[39] The District also collects a fixed one-time water service connection fee in the amount of $1,300.

NBRID – Rate Schedule	
Water Usage Fee	
Residential:	$1.71 per 1,000 gallons
Commercial:	$1.71 per 1,000 gallons
Water Availability Fee	
Residential:	$240 per parcel
Commercial:	$18 per equivalent dwelling unit
Connection Fee	
Residential:	$1,300

FINANCIAL

NBRID has an approved operating budget for 2002-2003 of $463,443. Primary expenses include maintenance and operation costs, payroll, and insurance coverage. The District's anticipated revenue for 2002-2003 is $350,000. Revenue sources include water and sewer service fees and property taxes. The District's reserve balance as of February 2003 was $364,193.

[39] NBRID provides water service to one commercial customer, the Steele Park Resort. Presently, Steele Park Resort is charged for 228 equivalent dwelling units as part its annual availability fee.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating the Napa-Berryessa Resort Improvement District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[40] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its contractual agreement with the Napa County Flood Control and Water Conservation District, the Napa-Berryessa Resort Improvement District imports an adequate supply of water to meet existing system demands under normal conditions. It is anticipated that this supply is sufficient to meet future system demands under normal conditions within the timeframe of this study.

2. The Napa-Berryessa Resort Improvement District should continue to pursue opportunities to increase and enhance its available water supply by developing a water conservation program. A water conservation program, which should encompass a variety of measures to remind constituents of the importance of conservation, will reduce system demands and help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. The ability of the Napa-Berryessa Resort Improvement District to address infrastructure needs or deficiencies in a timely manner is constrained by its financial resources relative to the cost of service.

4. The Napa-Berryessa Resort Improvement District's maximum day water demand is an important component in evaluating its current and future service capacities.

   Title 22 of the California Code of Regulations requires all public water service providers ensure sufficient water be available from their supply, treatment, and storage facilities to adequately and dependably meet the requirements of all users under maximum demand conditions before permitting additional connections.

5. The Napa-Berryessa Resort Improvement District has adequate treatment capacity to independently meet existing maximum day water demands. It is anticipated that this capacity is sufficient to meet future maximum day water demands within the timeframe of this study.

[40] LAFCO Resolution No. 04-23, adopted October 14, 2004.

Napa-Berryessa Resort Improvement District's maximum day demand in 2002 was 392,000 gallons, while its water treatment plant's daily capacity is 612,000 gallons.

6. The Napa-Berryessa Resort Improvement District has adequate treated water storage capacity to independently meet existing maximum day water demands. This capacity helps to ensure adequate reserves are available during an emergency or interruption in service. It is anticipated that this capacity is sufficient to meet future maximum day water demands within the timeframe of this study.

   Napa-Berryessa Resort Improvement District's treated water storage capacity is 500,000 gallons, while its maximum day water demand in 2002 was 392,000 gallons.

7. Central components of the Napa-Berryessa Resort Improvement District's water system, including its treatment plant and storage tanks, have been in operation since the 1960s. As a result, the water system requires a higher level of maintenance, resulting in additional costs with respect to repairs and staff time.

8. The Napa-Berryessa Resort Improvement District is scheduled to prepare a comprehensive facilities plan within the next year. The plan will evaluate existing water system facilities, project future water demands, and offer recommendations with respect to immediate and long-term improvements. Completion of this plan will improve the District's ability to prioritize and address system improvements that are reflective of the service needs of the community.

Growth and Population Projections:

1. The Napa-Berryessa Resort Improvement District is under the land use authority of the County of Napa. Land located within the District's jurisdictional boundary is zoned "Agricultural Watershed," "Planned Development," and "Residential Country." Although parcels zoned Agricultural Watershed and Residential Country are restricted to minimum parcels sizes of 160 and 10 acres respectively, there are no minimum parcel sizes for parcels zoned Planned Development. This allows for additional density, including residential and commercial, to occur within the affected portions of Berryessa Highlands for existing or new lots upon the approval of a modified or new use permit.

   In absence of a use permit, allowable uses for parcels zoned planned development include telecommunication facilities and minor antennas. Allowable uses upon grant of a use permit include residential, commercial, educational, recreational, mobile home parks, and institutional facilities.

2. Land located outside of the Napa-Berryessa Resort Improvement District's jurisdictional boundary is designated under the County of Napa General Plan as "Agriculture, Watershed, Open Space." This land use designation discourages the Commission from approving annexation proposals to the District based on its policy to direct the extension of municipal services away from land designated for agriculture unless it is in response to a health or public safety concern.

3. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(3) is an appropriate method in estimating the total population served by Napa-Berryessa Resort Improvement District's water service system. The population served by the District's water system based on this calculation method is 1,534.

Financing Constraints and Opportunities:

1. The Napa-Berryessa Resort Improvement District's water supply agreement with the Napa County Flood Control and Water Conservation District provides the District with a reliable source of water at a cost below market value. This agreement enables the District to establish and maintain a revenue stream based on its water supply that exceeds its cost of purchase, which helps to finance other operational and maintenance services.

   The Napa-Berryessa Resort Improvement District currently pays the Napa County Flood Control and Water Conservation District $20 per acre foot (325,900 gallons), while charging customers a usage rate of $1.71 per 1,000 gallons. This results in a cost-to-revenue of $20 to $557 for each acre-foot (note: this does not take into account pumping, treatment, storage, and distribution costs.)

2. The ability of the Napa-Berryessa Resort Improvement District to generate sufficient revenues has been hampered by unfulfilled development plans within its jurisdictional boundary. As a result, service costs for the District is spread out among fewer ratepayers, resulting in under funded operations and dependency on outside assistance to finance capital improvements.

3. Over the past several years, the Napa-Berryessa Resort Improvement District has relied on its cash reserves to help meet its operating expenses. The use of cash reserves to cover operating expenses restricts the ability of the District to generate and dedicate cash reserves for needed capital improvements.

4. Approximately one-third of the Napa Berryessa Resort Improvement District's annual revenue is generated from service charges to the Steele Park Resort, which is under contract with the federal government to provide visitor services at Lake Berryessa. The federal government is presently evaluating redevelopment opportunities at Lake Berryessa, which may result in significant operating

changes for the Steele Park Resort at the conclusion of its contract in 2008. Pending a final determination concerning future visitor services at Lake Berryessa, the District may experience a significant loss in annual revenues within the timeframe of this study.

5. The Napa-Berryessa Resort Improvement District's connection fee for water service is low relative to the connection fee adopted by other public water service providers in Napa County. As part of a water rate evaluation, the District should consider increasing its connection fee to help cover the cost of capital improvements needed to serve existing and future development within its jurisdictional boundary.

6. The Napa-Berryessa Resort Improvement District's connection fee serves as a buy-in charge for new development within its jurisdictional boundary. This is an appropriate and equitable approach to ensuring that new development pays a fair share of past and future expense relating to the development and maintenance of the water system.

7. The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002 provides grant funding to public agencies to develop and enhance local water resources and related infrastructure and facilities. This program may provide the Napa-Berryessa Resort Improvement District an opportunity to secure financing for needed capital improvement projects, including automating its operational facilities. The District should contact the California Department of Water Resources to begin exploring funding opportunities under this program.

Cost Avoidance Opportunities:

1. The Napa-Berryessa Resort Improvement District benefits from cost-savings associated with its relationship with the County of Napa Public Works Department. Notable cost-savings associated with this relationship include providing the District with access to a wide range of administrative and operational support, including billing and collections, engineering, and maintenance personal.

2. The Napa-Berryessa Resort Improvement District would benefit from a regional study evaluating whether cost avoidance opportunities are available with respect to joint agency practices with other special districts serving the Lake Berryessa area. Notably, a regional study may identify opportunities to realize savings relating to infrastructure and equipment purchases, engineering services, and administrative costs.

Opportunities for Rate Restructuring:

1. The Napa-Berryessa Resort Improvement District is presently evaluating a water rate increase to support increased operational and maintenance costs and to help fund capital improvements. Future studies should examine the relationship between possible rate increases and the District's ability to encourage water conservation while generating sufficient revenues to meet cost of service.

2. The Napa-Berryessa Resort Improvement District's water rates are among the lowest of all public water service providers in Napa County. To avoid future operating deficits, the District should increase its water rates to be more reflective of the actual costs of providing water service.

3. It is appropriate for the Napa-Berryessa Resort Improvement District to amend its water rates to be more reflective of the actual costs of providing water service. An increase in rates, which last occurred five years ago, would provide the District with additional revenue needed to finance capital improvements and help to prevent future operating deficits.

4. The Napa-Berryessa Resort Improvement District should review the merits of modifying its flat water usage rate schedule in favor of a tiered schedule. A tiered rate schedule enables service providers to recover the costs of providing service to high-use customers while strengthening water conservation efforts by providing a financial incentive to conserve.

Opportunities for Shared Facilities:

1. The Napa-Berryessa Resort Improvement District maintains an informal relationship with the Lake Berryessa Resort Improvement District to share staff, equipment, and materials on a need basis. This relationship provides a mechanism for both districts to pursue cost-efficiencies with one another with respect to mutually beneficial improvements and projects within their respective service areas.

2. The Napa-Berryessa Resort Improvement District should explore opportunities to share costs with the Spanish Flat Water District based on their proximity and similar service area characteristics.

Government Structure Options:

1. The Napa-Berryessa Resort Improvement District is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of the District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies

have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. Due to an amendment to its principal act, the Resort Improvement District Law, the Napa-Berryessa Resort Improvement District is limited to providing only water and sewer service. Additional analysis is needed to determine whether any additional municipal services originally authorized for the District to provide are required or warranted with respect to meeting the service needs of the community.

   At the time of its formation, the Napa-Berryessa Resort Improvement District was authorized to provide twelve municipal services: water, sewer, fire protection, community planning, garbage collection and disposal, public recreation, street lighting, mosquito abatement, maintenance of a police department, road construction, and general public works.

3. The Napa-Berryessa Resort Improvement District has been successful in achieving its original service objective to provide water and sewer service to the Berryessa Highlands and Steele Park Resort. However, due to its financial constraints, it is unclear whether the District under its present organization can continue to effectively meet the service needs of the community.

4. Preliminary analysis suggests that there may be advantages to pursuing a change in organization for the Napa-Berryessa Resort Improvement District, and that consolidation with the Lake Berryessa Resort Improvement District and the Spanish Flat Water District may be appropriate. This analysis indicates that reorganization of these districts may establish economies of scale necessary to enhance operational and service levels within their respective jurisdictional boundaries and help to formalize service provision in the Lake Berryessa area.

5. Pursuant to California Government Code §56378, LAFCO should conduct a governance study to evaluate the merits of reorganizing the Napa-Berryessa Resort Improvement District, Lake Berryessa Resort Improvement District, and the Spanish Flat Water District. This study should be completed prior to the next scheduled service review of the District.

Evaluation of Management Efficiencies:

1. The Napa-Berryessa Resort Improvement District provides an annual summary of past and projected revenues and expenditures relating to its water service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of the governing board, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

2. The Napa-Berryessa Resort Improvement District is indirectly managed by the Napa County Flood Control and Water Conservation District, which in turns, has an informal arrangement with County Public Works for administrative and operational support. This arrangement has helped to facilitate a mistaken perception of service responsibilities within the community. The Napa-Berryessa Resort Improvement District should make a concerted effort to remind its constituents that it, not the County, is the local water use authority for the community.

Local Accountability and Governance:

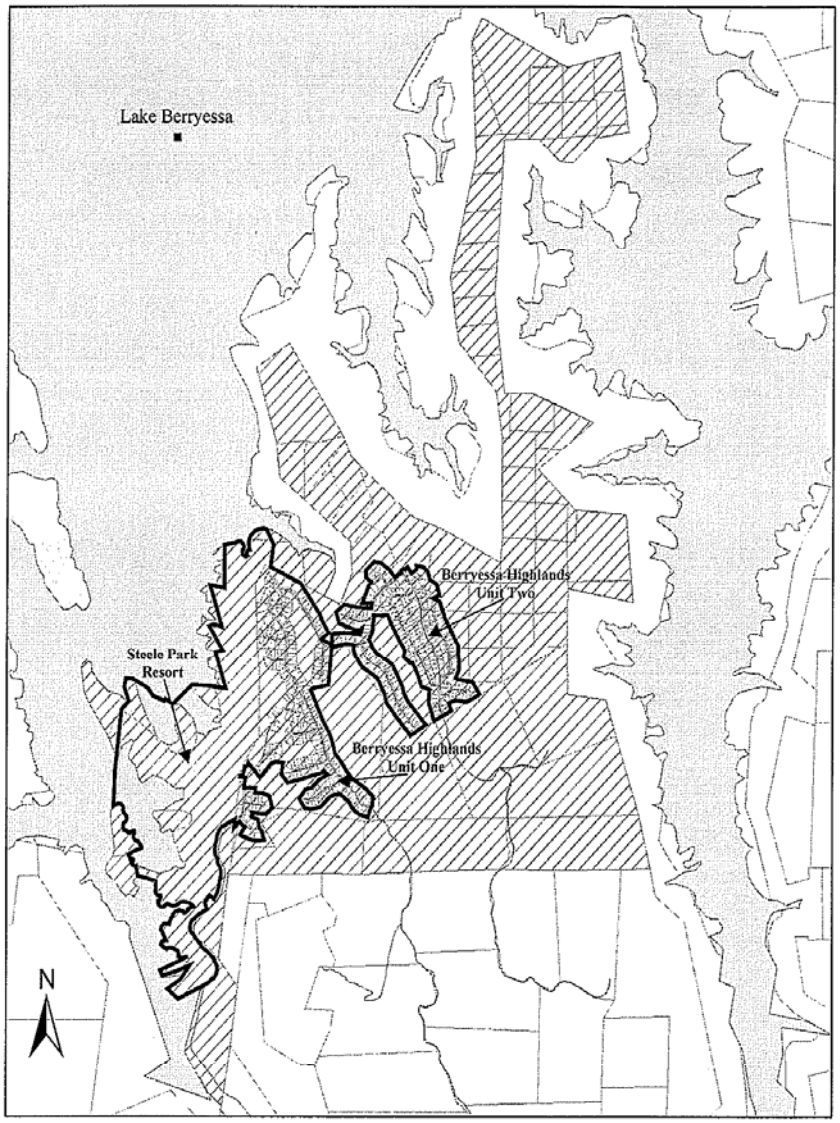
1. The Napa-Berryessa Resort Improvement District meetings are conducted on a need basis at the County of Napa's Administration Building and are open to the public. To improve its local accountability, the District should adopt a regular meeting schedule. Regularly scheduled meetings provide an opportunity for the District's constituents to ask questions of their governing board, while helping to ensure that service information is being effectively communicated to the public.

2. The Napa-Berryessa Resort Improvement District makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

3. The Napa-Berryessa Resort Improvement District should closely monitor the plans of the United States Department of the Interior, Bureau of Reclamation, with respect to long-term visitor uses at Lake Berryessa. This will help prepare the District for possible operational changes at the Steele Park Resort, which may require the development of an alternative service plan to account for a diminished revenue stream.

4. The Napa-Berryessa Resort Improvement District's water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Napa-Berryessa Resort Improvement District



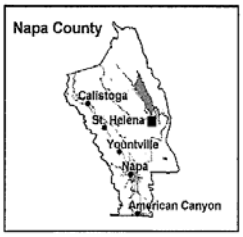
LEGEND

District Boundary

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP



Local Agency Formation Commission LAFCO Napa County

Prepared by: KS

NAPA COUNTY FLOOD CONTROL & WATER CONSERVATION DISTRICT

OVERVIEW

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.

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). Theses 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 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.[41] Each subcontractor is responsible for the construction and operation of their own intake and delivery system to Lake Berryessa.

NCFCWCD's water conservation services are provided with direction from its subcontractors. To increase its responsiveness to the collective needs of Napa County, the District formed an advisory group consisting of the public works directors and staffs of the five cities and the County. Commonly referred to as "Watrtac," the group provides the District with a consensus among the cities regarding current and future water issues. In 2000, on behalf of this advisory group, the District reached an agreement with Kern County Water Agency for the permanent transfer of 4,025 acre-feet of annual SWP entitlement. Costs are proportionately shared by each of the five cities according to the amount of water each city is entitled.

Aside from administering the aforementioned water supply contracts, NCFCWCD facilitates collaborative studies aimed at examining local water supplies and enhancement opportunities. The District is currently facilitating a countywide water study to identify current and projected water demand within each of its participating agency's service areas as well as documenting agricultural demands in unincorporated areas served by groundwater. The "2050 Study" will also include an analysis of potential new water sources, including the feasibility of capturing water from the Napa River for beneficial use. Funding participants include the County, Napa Sanitation District, and each of the five cities. The District also is participating in a study with the United States Geological Survey. The study is an update of a 1977 analysis of the hydrological and geological properties for the lower basins of the Milliken Creek, Sarco Creek, and Tulucay Creek of Napa County. The study is due for release in 2003.

[41] Until recently, NCFCWD had administered operations for LBRID and NBRID. Both districts are governed by the Napa County Board of Supervisors and were formed in the 1960s to provide potable water and wastewater services for planned resort/residential communities near Lake Berryessa. Management for both districts is currently provided by the County's Public Works Department.

GOVERNANCE

NCFCWCD was organized by the California Legislature under the Napa County Flood Control and Water Conservation District Act of 1951. The District's 11-member governing board is comprised of the Napa County Board of Supervisors, the mayors of the five cities in the County, and a council member from the City of Napa.[42] The board is empowered to establish and enforce any rule or regulation deemed necessary to carryout the business of the District. Pursuant to the Act, all officers of the County and their employees are subject to perform duties on behalf of the District. Elections are based on a registered resident-voter system. If deemed advisable, the board may establish zones within the District to carry out specific plans or projects for the benefit of a designated area. In the event a project for one or more zones is planned, the board is required to appoint three property owners residing in the affected zone to an advisory committee. The appointed committee members are required to take part in all meetings and/or discussions involving designated projects.[43] District operations may be financed through property taxes, assessments, charges, general obligation bonds, the sale or lease of real property, and the sale of surplus water.

NCFCWCD's board meetings are conducted on the first and third Tuesday of every month. Meetings are held at the County of Napa's Administration Building and are open to the public. Pursuant to the Napa County Flood Control and Water Conservation District Act of 1951 (Chapter 1449: 3411), the District is authorized to provide the following municipal services:

- Control flood and storm waters in order to conserve for beneficial and useful purposes by spreading, storing, retaining, and/or causing such waters to percolate into the soil; protect public highways, life, property, watercourses, and watersheds from flood and storm waters; prevent the waste of water supply within the District; obtain, retain, and reclaim drainage, storm, flood, or other waters from any other sources within or outside of the District for beneficial uses (Section Four)

- To acquire through any means, real property and/or to construct, maintain and operate improvement works necessary to carry out the duties of the District (Section Five, Part Four)

- To store water in surface or underground reservoirs within or outside of the District; to conserve and reclaim water for present and future uses; to appropriate and acquire water and/or water rights within or outside of the District; ensure an sufficient water supply is available for any present or future beneficial uses that includes the acquisition, storage, and distribution of water for irrigation, domestic,

[42] NCFCWCD's governing body originally consisted of the Napa County Board of Supervisors. In 1996, the California Legislature amended the District's enabling act to expand its governing body to include the mayors of the five cities in Napa County and a councilmember from the City of Napa.

[43] Since its formation, NCFCWCD has established one zone: "Zone 1." This zone was created in 1952 for the purpose of operating a water pump station for storm and flood control in southern Napa County near Edgerly Island. Zone 1 was subsequently dissolved in 1982 with its water pump station conveyed to the Napa River Reclamation District #2109.

fire protection, municipal, commercial, industrial and all other beneficial uses (Section Five, Part Five)

- Perform studies or analyses as it relates to water supply, water rights, and the control of flood and storm waters (Section Five, Part Eight)

OPERATIONS

The Public Works Department for the County of Napa provides administrative services to NCFCWCD. Public Works is compensated for staff time spent on District activities on an hourly rate.[44] Public Works primary responsibility relating to the District's water conservation services includes administering its master water supply agreements with DWR and the Bureau of Reclamation. In addition, Public Works administers the District's water supply agreements with its local subcontractors. District operations receive input through an advisory committee that is comprised of the public works directors and staffs for each of the five cities in Napa County and the County of Napa.

ADOPTED BOUNDARIES

NCFCWCD's adopted service area is comprised of one contiguous area consisting of 506,517 acres. The District's service area is conterminous with its sphere of influence and includes all lands within Napa County. The District is under the land use of authority of multiple jurisdictions, including the County of Napa and the Cities of American Canyon, Calistoga, Napa, St. Helena, and the Town of Yountville.

NCFCWCD – Adopted Boundaries	
District Boundary:	506,517 acres *****
Sphere of Influence Boundary:	506,517 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

WATER SUPPLY

NCFCWCD's water supply is based on contracted entitlements with DWR and the Bureau of Reclamation. The District's agreement with DWR provides it with an annual entitlement of water drawn from the SWP through 2035. SWP water is delivered to the District through the NBA, a 27-mile transmission line that conveys captured water from the Sacramento-San Joaquin Delta to the Napa Turnout Reservoir in Jameson Canyon. The District's original agreement with DWR provided a maximum annual water entitlement of 25,000 acre-feet. This amount was amended in 2000 following a water

[44] County Public Works estimates that approximately 120 hours of monthly staff time is spent on NCFCWCD activities.

transfer agreement with the Kern County Water Agency. This agreement provides the District with an additional 4,025 acre of annual SWP entitlement made available in gradual increments through 2021. The District's SWP entitlement is subcontracted out to the Cities of American Canyon, Calistoga, Napa, St. Helena, and the Town of Yountville. (St. Helena elects to sell its annual SWP entitlement of 1,000 acre-feet.) Each subcontractor is responsible for the construction and operation of their own connection and delivery system to the Napa Turnout Reservoir; withdraws are metered by the District.

NCFCWCD's water supply agreement with the Bureau of Reclamation provides it with an annual entitlement of water drawn from the Solano Project. The contract was recently renewed in 1999 and establishes an annual entitlement of 1,500 acre-feet of water from Lake Berryessa through 2024. The District subcontracts this entitlement to several property owners in the Lake Berryessa area in addition to three special districts: Lake Berryessa Resort Improvement District, Napa-Berryessa Resort Improvement District, and the Spanish Flat Water District. Each subcontractor is responsible for the construction and operation of their own intake and delivery system to Lake Berryessa.

NCFCWCD– Available Water Supply (acre-feet)		
Year	**State Water Project ***	**Solano Project ****
2003	21,475	1,500
2004	21,850	1,500
2005	22,225	1,500
2006	22,550	1,500
2007	22,875	1,500
2008	23,200	1,500

* NCFCWCD entitlements to the SWP are scheduled to gradually increase each year through 2021, at which time the District shall reach its maximum annual entitlement of 29,025 acre-feet. Entitlements continue thereafter through 2035.

** NCFCWCD entitlements to the Solano Project continue at 1,500 acre-feet annually through 2024.

WATER DEMAND

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.

WATER TREATMENT FACILITIES

NCFCWCD does not own, lease, or operate treatment facilities.

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

NCFCWCD does not own, lease, or operate distribution systems or storage facilities.

RATE SCHEDULE

NCFCWCD's water rates are determined by DWR and the Bureau of Reclamation for water supplies generated from the SWP and the Solano Project respectively. These rates are passed directly to each subcontractor based on their water usage along with an administration fee based on District staff time.

FINANCIAL

NCFCWCD's annual budget is divided between four divisions: Flood and Watershed Management, Water Supply Operations, Napa Flood Project, and Napa Flood Project – General Administration (Measure A).[45] The District's water supply operation division has an approved operating budget for 2002-2003 of $4,761,747. Primary expenses include cost associated with the delivery and administration of SWP water. The District's anticipated revenue for 2002-2003 is $4,761,747. The main revenue source is reimbursement from subcontractors. As of February 2003, the District's cash balance was $60,759.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating the Napa County Flood Control and Water Conservation District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[46] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

[45] Measure A (Napa County Flood Protection Sales Tax Ordinance) was approved by Napa County voters in 1998 and authorizes a 0.5% special tax over a 20-year period for the purposes of funding specified flood and water quality and enhancement projects. Specified projects include the Napa River Flood Project and the stabilization and enhancement of Calistoga's Kimball Reservoir and St. Helena's Bell Canyon Reservoir.

[46] LAFCO Resolution No. 03-36, adopted December 11, 2003.

Infrastructure Needs or Deficiencies:

1. The Napa County Flood Control and Water Conservation District does not own, lease, or operate any facilities relating to the provision of water service. Due to its contractual relationship with its subcontractors, it is not anticipated that the District will pursue changes in its operations within the timeframe of this study.

2. Through its contractual agreements, the Napa County Flood Control and Water Conservation District administers imported water supplies on behalf of five cities and three special districts in Napa County. In accordance with its legislative mandate, the District should continue to explore opportunities to increase and enhance available water supplies through mutually beneficial water supply projects. These efforts will assist local water agencies to meet increasing service demands, while supplementing and conserving local water resources.

3. It is anticipated that the increase in demand projected by Napa County Flood Control and Water Conservation District's municipal subcontractors will necessitate a greater demand for withdraws from the State Water Project. Accordingly, the District should continue to explore opportunities with the California Department of Water Resources and the Solano County Water Agency to ensure the timely availability of adequate capacity through the North Bay Aqueduct to coincide with these increased demands.

   Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District. The District is currently working with the Department of Water Resources and the Solano County Water Agency to finance and implement the first of these improvements: construction of an additional pump station at Barker Slough. Key factors involved in these improvements are the completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from the District's water transfer agreement with the Kern County Water Agency.

4. On behalf of its subcontractors, the Napa County Flood Control and Water Conservation District should continue to monitor conditions relating to current and future deliveries drawn from the State Water Project. These efforts will assist affected subcontractors to implement proper water supply planning contingencies to mitigate service constraints during below normal and dry year conditions, when deliveries are restricted.

5. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of State Water Project deliveries using historical precipitation rates along with projected land and water use demands through 2021. Notably, this report includes delivery estimates

during drought periods. This report is a valuable tool for all State Water Project contractors and should be incorporated into each of the District's affected subcontractors' water supply planning efforts.

6. The Napa County Flood Control and Water Conservation District has made reasonable efforts to assist local public water agencies secure additional water supplies for supplemental and drought protection purposes. These efforts demonstrate a continued effort by the District to be responsive to the collective needs of Napa County by lessening the impact incurred by ratepayers during below normal and dry years when water supplies are at a premium.

   A recent example includes the Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with the Kern County Water Agency. This agreement provides each of the five cities in Napa County an annual share of the District's purchase of 4,025 acre-feet of additional State Water Project entitlement. In addition, the District continually monitors interest among its subcontractors with respect to participating in provisional water supply programs facilitated by the California Department of Water Resources as well as open water market purchases.

Growth and Population Projections:

1. Projected population growth within Napa County Flood Control and Water Conservation District's jurisdictional boundary will increase at a level identical to projected growth rates for Napa County. It should be expected that increases to the County's population will necessitate a greater demand for water service within the District's jurisdictional boundary. This increase in demand is expected to be largely accommodated by the District's municipal subcontractors.

2. Population projections issued by the Association of Bay Area Governments (ABAG) are reasonable estimates of Napa County's current and future population. Population projections issued by ABAG for the County should be incorporated and used by the Napa County Flood Control and Water Conservation District as reasonable population projections for its jurisdictional boundary.

   In 2002, ABAG issued updated population projections estimating Napa County's total population at approximately 140,700 by 2010. Of this amount, approximately 110,000 persons are projected to live within one of the County's five incorporated territories.

Financing Constraints and Opportunities:

1. The Napa County Flood Control and Water Conservation District's water conservation services are primarily financed from reimbursement fees collected from its subcontractors. These revenues cover actual costs of importing water supplies on behalf of its subcontractors along with administration fees based on staff time. This arrangement enables the District to recover all costs associated with its water conservation services, however, limits cost recovery to services that have been approved by the affected agencies.

2. Opportunities for the Napa County Flood Control and Water Conservation District to increase revenues for its water conservation services through assessments are constrained by Article XIII of the California Constitution, which requires 2/3 voter approval to raise special taxes.

3. In 1998, Napa County voters approved "Measure A" authorizing a special tax over a 20-year period for the purpose of funding specified flood control and watershed improvement projects. Revenue generated from this special tax is managed by a technical advisory committee and helps to finance District operations relating to flood control. An examination of this revenue source and its impact on the District's flood control services should be evaluated as part of a future study.

Cost Avoidance Opportunities:

1. The Napa County Flood Control and Water Conservation District shares costs relating to its water conservation services with its subcontractors and other public agencies in Napa County who benefit from its services. It is anticipated that future costs incurred as a result of the District's water conservation services will continue to be shared in this manner.

2. The Napa County Flood Control and Water Conservation District's water conservation services are administered by the County of Napa's Public Works Department. This arrangement allows the District to access a wide range of resources and enables it to share in the benefits of the County's buying power.

Opportunities for Rate Restructuring:

1. The Napa County Flood Control and Water Conservation District does not determine imported water rates for its subcontractors; rates are determined by the United States Department of the Interior, Bureau of Reclamation, for entitlements drawn from the Solano Project and the California Department of Water Resources for entitlements drawn from the State Water Project. These rates are passed directly to each subcontractor based on their water usage along with an administration fee based on District staff time.

Opportunities for Shared Facilities:

1. The Napa County Flood Control and Water Conservation District and the Napa County Resource Conservation District share similar legislative responsibilities and jurisdictional boundaries. Due to their natural service relationships, opportunities to pursue cost efficiencies and shared facilities between these two agencies should be more fully examined in future studies.

   The Napa County Resource Conservation District was formed in 1945 to prevent and control soil erosion, runoff, and the development, storage, and distribution of water. Although it has elected not to offer water service, this district does provide services relating to the assessment of Napa County's waterways and groundwater basins.

Government Structure Options:

1. The Napa County Flood Control and Water Conservation District is authorized under its legislative act to provide a wide range of municipal services relating to the provision of water service in Napa County. Although its jurisdictional boundary overlaps several other public agencies in the County empowered to provide similar water services, the District provides a unique service: administration of master water supply agreements on behalf of multiple public agencies throughout the County.

2. The Napa County Flood Control and Water Conservation District is authorized under its legislative act to establish "zones" within its jurisdictional boundary for the purposes of establishing assessments to finance projects for the specific benefit of a particular area. This feature enables the District to act responsively to beneficial water quality and enhancement projects within a specified area, while limiting costs to property owners directly benefiting from the project. When appropriate, the District should explore opportunities to establish project zones within the County to assist public agencies and property owners to improve local water resources.

Evaluation of Management Efficiencies:

1. The Napa County Flood Control and Water Conservation District provides an annual summary of past and projected revenues and expenditures relating to its water conservation services as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to the District's water conservation services. In addition to enhancing the accountability of appointed representatives, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

2. The Napa County Flood Control and Water Conservation District's agreement with the United States Department of the Interior, Bureau of Reclamation, for annual entitlements drawn from the Solano Project requires it to ensure that all subcontractors receiving project water are equipped with approved measuring devices no later than 2004. The District should encourage its Solano Project subcontractors to implement these water measuring devices in a timely and efficient manner. Implementation of these measuring devices will enhance the District's level of oversight and help to ensure withdraws from Lake Berryessa are limited to each subcontractor's contractual amount.

Local Accountability and Governance:

1. The Napa County Flood Control and Water Conservation District's board meetings are conducted twice a month and are open to the public. Public inquiries involving its water conservation services can be addressed to the board at this time. Regularly scheduled board meetings provide an opportunity for residents to ask questions of their appointed representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The Napa County Flood Control and Water Conservation District makes reasonable efforts to maintain public dialogue with the residents of Napa County relating to its water conservation services. These efforts facilitate local accountability and contribute towards public involvement in local governance.

3. The Napa County Flood Control and Water Conservation District can improve its local accountability by including information relating to water conservation news and opportunities on its website. In addition, the District should publish an annual newsletter to Napa County households that includes information on water conservation opportunities and updates on current and planned water studies. These efforts would reinforce and enhance the District's legislative mandate to improve the County's water resources and strengthen public involvement in its water conservation services.

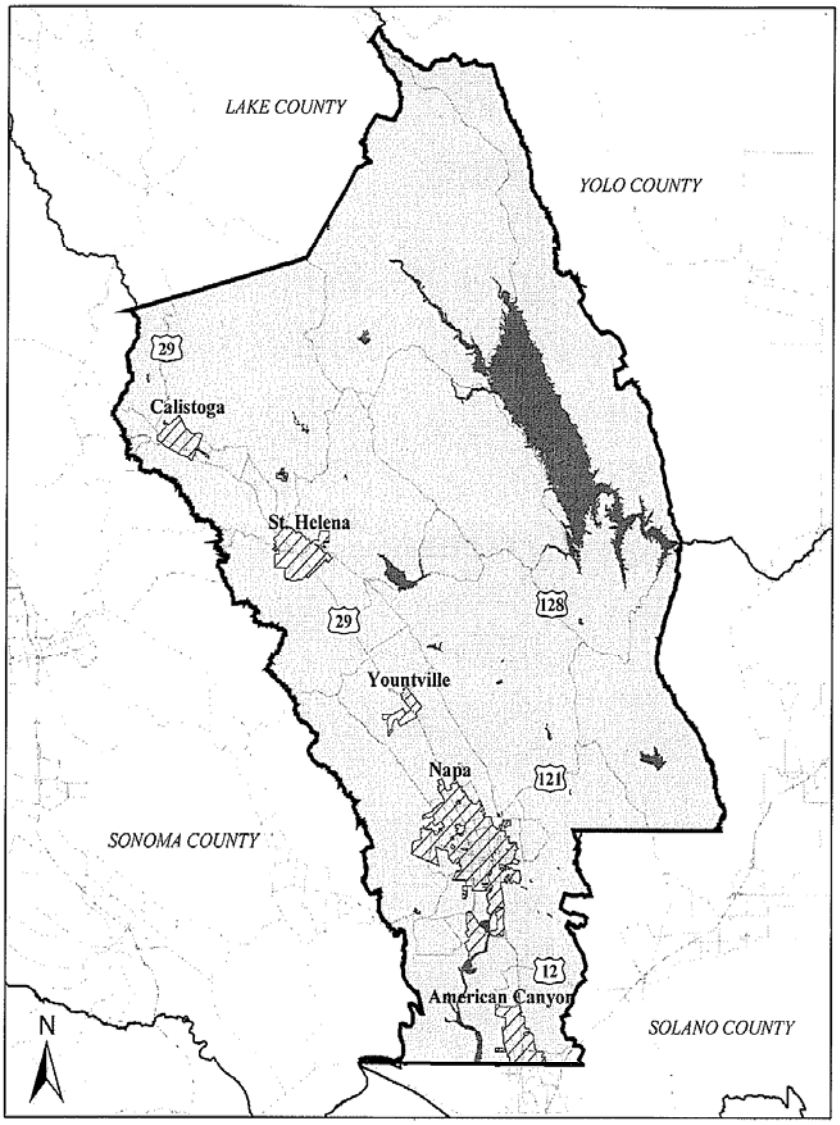
4. The United States Department of the Interior, Bureau of Reclamation, has lease agreements with seven concessionary resorts at Lake Berryessa that will expire in 2009. The Bureau of Reclamation is currently developing a new long-term service plan in anticipation of issuing new concessionary agreements. New concessionary agreements could result in significant changes to existing uses and services at Lake Berryessa. The Napa County Flood Control and Water Conservation District should closely monitor the Bureau of Reclamation's plans for long-term uses at Lake Berryessa with respect to potential impacts to its vested subcontractors serving the Lake Berryessa area.

Two of the concessionary resorts at Lake Berryessa, the Spanish Flat Resort and the Steele Park Resort, are potable water customers of the Spanish Flat Water District and the Napa-Berryessa Resort Improvement District respectively. These service providers are both subcontractors of the Napa County Flood Control and Water Conservation District and rely on revenues generated from water sales from the aforesaid concessionary resort to finance their respective operations.

5. In 1999, the Napa County Board of Supervisors went on record to encourage the Napa County Flood Control and Water Conservation District to develop and adopt a coordinated groundwater management plan. A coordinated countywide groundwater management plan offers the promise of greater protection for Napa County's groundwater basins against overdraft and contamination, while maximizing its long-term beneficial uses. The District should make a concerted effort to determine the feasibility of developing and adopting a groundwater management plan within the timeframe of this study.

6. The Napa County Flood Control and Water Conservation District's water conservation services are maintained and managed by a responsive and professional staff. These characteristics enhance local accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Napa County Flood Control and Water Conservation District



LEGEND

District Boundary

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Prepared by: KS

NAPA SANITATION DISTRICT

OVERVIEW

Established in 1945, the Napa Sanitation District (NSD) was created to provide for the collection and secondary treatment of wastewater for discharge into the Napa River for the City of Napa and unincorporated portions of southern Napa County. The District was formed at the request of the Napa County Board of Supervisors. Wastewater services commenced in the late 1940s following the construction of the Imola Treatment Plant. The District's operations were later expanded in the 1980s to include the treatment of wastewater for reclamation projects. The focus of this study is the District's reclaimed water services.

NSD's efforts to implement reclamation projects began with the need to find suitable alternatives for the storage and dry season discharge of treated wastewater into the Napa River. These efforts were prompted by new federal and state regulations relating to the treatment and discharge of wastewater. In 1972, the United States Congress passed the Federal Water Control Pollution Act. Referred to as the Clean Water Act, the law established water quality standards that were created in order to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The law included the mandate for a permit system known as the National Pollutant Discharge Elimination System (NPDES) to regulate the discharge of pollutants into surface waters. That same year, the California Legislature amended the Porter-Cologne Water Quality Control Act of 1969, allowing the State Water Resources Control Board to assume the responsibilities prescribed in the Clean Water Act. This signified that the State Water Resources Control Board and its nine regional control boards would regulate federal and state water quality standards as well as operate the federal permit process for discharging pollutants into open waters.

In 1975, NSD reached a joint powers agreement with the American Canyon County Water District (ACCWD) that resulted in the Napa-American Canyon Wastewater Management Authority. ACCWD was the predecessor of the City of American Canyon and provided potable water and wastewater services in the unincorporated territory south of NSD's service area. The agreement established the terms and conditions by which NSD and ACCWD would coordinate the management of wastewater services within their respective service areas. Most notably, this agreement facilitated the construction of the Soscol Wastewater Treatment Plant (WTP) in 1978, an advanced treatment plant capable of meeting new federal and state treatment standards. The Soscol WTP provided both agencies with enhanced treatment facilities capable of providing restricted (secondary) recycled water that could be used for irrigation on non-domestic crops (i.e., pastures, orchards, and fodder). In 1994, the Napa-American Canyon Wastewater Authority was dissolved following the incorporation of American Canyon two years earlier. The dissolution agreement defined recycled water areas for NSD and American Canyon. Each agency agreed not to impair the other agency from selling or providing recycled

water within their designated area. The recycled water areas defined in the dissolution agreement matched earlier agreements and service practices between NSD and ACCWD. The agreement defines NSD's recycled water area as lands north of Fagan Creek as well as any lands south of Fagan Creek owned by Napa County for its airport operations, and any part of the Chardonnay golf facilities.

In 1983, NSD's reclamation program was prompted following a mandate by the San Francisco Bay Region – Regional Water Quality Control Board (RWQCB) for the District to establish a timeline for the expansion of its reclamation program. The mandate was issued in conjunction with RWQCB's notice that discharges into the Napa River would be restricted beginning in 1988. The restrictions would take effect during summer months when flow rates in the Napa River were not sufficient to minimize the impacts of discharged pollutants. By the end of the 1980s, the District had finished construction on two reclamation pipelines: the Kirkland Pipeline and the Kirkland Extension Pipeline. These pipelines allowed the District to begin conveying restricted reclaimed water from Soscol WTP to lands in southern Napa County for pasture irrigation. The Kirkland Extension also facilitated service to the Chardonnay Golf Course, the District's first paying reclaimed water customer.

In 1997, NSD completed the first of two planned capital improvement projects to the Soscol WTP. Referred to as "Phase I," this initial phase provided the District with improved and upgraded facilities necessary to raise the level of treatment at the Soscol WTP to tertiary. The move from secondary to tertiary recycled water was designed to expand the District's reclamation program due to tertiary's unrestricted use. The California Department of Health Services, under Title 22 of the California Code of Regulations, permits the use of tertiary recycled water for multiple uses. These uses can include irrigation of food crops, parks and playgrounds, golf courses, cemeteries, and certain industrial and commercial uses.

The following year, NSD reached a 20-year agreement with the City of Napa that permits the District to solicit and provide reclaimed water service within a specified area of the City's water service area. Referred to as the "reuse area," the agreement defines the District's recycled service area as lands east of the Napa River, south of Imola Avenue, west of Highway 221, and north of the City of American Canyon. The agreement also permits NSD to deliver reclaimed water to the Napa State Hospital, Stanley Ranch, and the South Napa Market Place. Reclaimed water service to any lands not included in the reuse area and within the City's water service area requires prior written approval by the City. The agreement provides NSD with exclusive rights to furnish reclaimed water within the City's water service area. NSD agrees to reimburse the City for the loss of potable water sales revenue in the event customers take delivery of recycled water in lieu of potable water from the City. NSD also agrees to furnish up to 50 acre-feet per year of reclaimed water to Kennedy Park and the Napa Valley College at no cost.

In April of 2002, NSD completed "Phase II" of the Soscol WTP capital improvement project. The improvements made to the Soscol WTP provided the District with enhanced

treatment facilities, including an advanced solids handing system. The District is currently completing work on the construction of the Kennedy Pipeline. The Kennedy Pipeline will allow the District to begin providing reclaimed water service to several entities inside the City of Napa's reuse area, including Kennedy Park and Golf Course and Napa Valley College. Completion of the Kennedy Pipeline is anticipated for 2003. Another prominent reclamation project anticipated to begin within the next few years includes service to commercial and industrial sites located within the Napa Valley Gateway Business Park. Lots developed within City's reuse area and the Napa Valley Gateway Business Park are required under the terms of their wastewater service agreement to take reclaim water when it becomes available.

In addition to expanding reclamation service into the City of Napa's reuse area and the Napa Valley Gateway Business Park, NSD maintains a contractual agreement to extend service to the Los Carneros Water District (LCWD). LCWD was created in 1978 for the specific purpose of entering into negotiations with the District for the delivery of reclaimed water for agricultural use in the Carneros region of Napa County. Although NSD and LCWD have signed two agreements over the past 25 years, a delivery system has never been constructed. The District's most recent agreement with LCWD was reached in 1995 and provided the framework for the Carneros Recycled Water Service Project. The District agreed to be responsible for the planning, financing, construction, operation, and maintenance of a delivery system that would provide reclaimed water service to property owners within LCWD. The implementation of the agreement, however, was contingent on the District reaching separate agreements with individual property owners within LCWD before beginning construction. Negotiations with three prominent property owners proved ineffective – the property owners wanted assurances from the District that they be allowed to terminate their agreements at their discretion. Unwilling to meet such conditions, the District suspended implementation of the Carneros Recycled Water Service Project and applied the money designated for LCWD to finance other reclamation projects. The District has maintained contact with LCWD to discuss the possibility of extending reclamation services to the Carneros region, but financing remains a key obstacle. It is estimated that the total cost to construct the facilities needed to provide reclaimed water service to the Carneros area is approximately 7.5 million dollars.

GOVERNANCE

NSD was organized under the County Sanitation District Act, Division Five, Part Three, Chapter Three of the California Health and Safety Code. The District's governing body is comprised of a five-member board of directors. The board includes a county supervisor, the mayor and a councilmember from the City of Napa, and two public members. The City Council of Napa and the Board of Supervisors appoint their own public member. A county supervisor also serves as an alternate board member. Elections are based on a registered resident-voter system. District operations can be financed through wastewater and reclaimed water service charges, assessments, lease or sale of property, and general obligation and revenue bonds.

NSD's board meetings are conducted on the first and third Wednesday of every month at the District's Soscol WTP's Administrative Office and are open to the public. Pursuant to the County Sanitation District Act (Health and Safety Code 4700 et. seq.), NSD is authorized to provide the following municipal services:

- The collection, treatment, and disposal of wastewater and related works, including sewage systems and treatment plants (HSC §4740-4741)
- The sale or disposal of any water which is the by-product of any district operations (HSC §4744)
- The construction, maintenance, and operation of a refuse transfer or disposal system (HSC §4741.1)
- Street cleaning and street sweeping services upon the roads and streets of the district (HSC §4742.5)
- The acquisition, construction, control, operation, and maintenance of waterworks for the production, treatment, storage, and distribution of water for domestic and/or other uses (HSC §4767)

NSD provides only the first two services listed above.

OPERATIONS

NSD's reclaimed water services are operated and maintained by its staff. The District is comprised of four departments: administration, collections, treatment, and technical services. A general manager is appointed to provide oversight and direction for all four departments. The general manager serves at will to the board. Designated staff is on call 24 hours a day, 7 days a week to respond to any reported emergencies. The District is currently comprised of 40 full time employees.

ADOPTED BOUNDARIES

NSD's adopted service area is comprised of 12,448 acres. The District's service area includes the majority of incorporated territory of the City of Napa as well as unincorporated portions of southern Napa County. The District is under the land use of authority of two jurisdictions: the City of Napa and the County of Napa.

NSD – Adopted Boundaries	
District Boundary:	12,448 acres *****
Sphere of Influence Boundary:	14,699 acres *****

* Figures are approximations calculated using information generated by LAFCO and County of Napa's geographic information systems.

RECLAIMED WATER SUPPLY

NSD's reclaimed water is generated from wastewater collected from the City of Napa and from unincorporated portions of southern Napa County. The amount of reclaimed water available for delivery is directly impacted by the amount of wastewater received and processed by the Soscol WTP. In 2001, Soscol WTP received approximately 3.045 billion gallons of wastewater (9,343 acre-feet).

NSD – Reclaimed Water Supply	
Available Wastewater Supply:	3.045 billion gallons

* Amount of wastewater received by Soscol WTP in 2001

RECLAIMED WATER DEMAND

In 2001, NSD delivered approximately 724 million gallons of reclaimed water during non-discharge months (2,222 acre-feet). This resulted in an approximate daily average of 4.0 million gallons between May and October when discharge to the Napa River is prohibited by order of the San Francisco Bay – Regional Water Quality Control Board. Currently, the District provides reclaimed water services to seven locations: Jameson Canyon Ranch, Somky Ranch, Napa County Airport/Fagundos Ranch, Giles Vineyard, Chardonnay Golf Course, Kohnan, Inc., and CDI. Giles Vineyard, Chardonnay Golf Course, Kohan, Inc., and CDI are charged a usage fee for reclaimed water. Somky Ranch, Jameson Canyon Ranch, and Fagundos Ranch are all owned by the District. The Napa County Airport is leased from the County of Napa for recycled water and biosolid discharges.

NSD – 2001 Reclaimed Water Demand	
Reclaimed Water Demand:	724 million gallons *
Service Connections:	7

* Represents reclaimed water production at Soscol WTP in 2001.

RECLAIMED WATER TREATMENT FACILITIES

NSD provides treatment of wastewater generated from the City of Napa and unincorporated portions of southern Napa County at the Soscol WTP.[47] Built in 1978, the Soscol WTP has a treatment capacity of 15.4 million gallons a day. The District maintains four adjacent oxidation ponds that encompass roughly 340 acres and provide approximately 1,700 acre-feet of storage capacity. In 1997 and 2002, the District completed two upgrades to the Soscol WTP. These upgrades raised the level of wastewater treatment at the Soscol WTP for reclamation uses to tertiary and created a reclaimed water reservoir. The Soscol WTP has a reclaimed water treatment capacity of 8.8 million gallons a day.

Treatment of wastewater at Soscol WTP is broken into two phases: wet season discharge and dry season discharge. Wet season discharge (November 1 through April 30) is comprised of primary and secondary treatment of wastewater before being discharged into the Napa River near Rattos Landing. Primary treatment begins as wastewater is cycled through a bar screen and grit chamber to remove large and small debris. Water is then emptied into two primary clarifiers allowing solids in the wastewater to settle. Secondary treatment commences as wastewater is removed from the clarifiers and processed either through an aeration basin before entering into a second line of clarifiers, or through the oxidation ponds followed by flocculation clarifiers. Treatment continues as wastewater is pumped into a chlorine contact basin. Once water has completed its chlorine contact time, water is dechlorinated before being discharged into the Napa River. During the dry season (May 1 through October 31) when discharge to the Napa River is prohibited, wastewater is provided tertiary treatment. Tertiary treatment requires an additional level of filtration following the completion of secondary treatment in order to meet Title 22 standards. These standards include meeting designated coliform and turbidity levels and a prescribed disinfection process. Moreover, recycled water is not dechlorinated.[48]

Soscol Wastewater Treatment Plant	
Wastewater Source:	City of Napa Unincorporated lands in Napa County
Wastewater Treatment Capacity:	15.4 million gallons per day
Reclaimed Water Treatment Capacity:	8.8 million gallons per day

[47] NSD's wastewater collection, treatment, and discharge operations are governed by California Regional Water Quality Control Board – San Francisco Bay Region Order No. 00-059.

[48] NSD's reclamation operations are governed by California Regional Water Quality Control Board – San Francisco Bay Region Order No. 96-011. This permit serves as a general permit for reclamation operations throughout the San Francisco Bay region.

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

NSD produces and distributes reclaimed water generated from the Soscol WTP. The District's reclaimed distribution system is comprised of the Kirkland and Kirkland Extension Pipelines. These pipelines convey tertiary reclaimed water stored and pumped from the Soscol WTP's reclaimed water reservoir to unincorporated portions of southern Napa County. A temporary pipeline is also available to convey reclaimed water to a leased portion of the Napa County Airport. This enables the District to discharge reclaimed water on an emergency basis and discharge biosolids annually. The reclaimed water reservoir has a usable storage capacity of approximately 6.5 million gallons.[49]

NSD – Reclaimed Storage Capacity	
Reclamation Reservoir	6.5 million gallons
TOTAL:	**6.5 million gallons**

RATE SCHEDULE

NSD charges a monthly reclaimed water usage fee based on the volume of water used in quantities of 1,000 gallons. The District does not charge an availability or connection fee for reclaimed water service.

NSD – Rate Schedule	
Water Usage Fee:	$0.77 per 1,000 gallons *

* Adjusted annually in accordance to the Consumer Price Index.

FINANCIAL

NSD has an approved operating budget for 2002-2003 of $10,439,992. This amount includes expenditures for the District's four departments: administration ($6,945,328), collections ($159,858), treatment ($2,961,161), and technical services ($373,645). Primary expenses include payroll, maintenance and operation costs, and insurance and licensing fees. The District's anticipated revenue for 2002-2003 is $10,999,800. Revenue sources include wastewater service charges and interest from invested funds.

[49] NSD is scheduled to complete construction on the Kennedy Pipeline in 2003. Once completed, the Kennedy Pipeline will serve Napa Municipal Golf Course, Kennedy Park, and Dey, Inc. Future improvements include extending Kennedy Pipeline to Napa Valley College and Napa State Hospital (NSH) as well as constructing a 5.0 million gallon reclaimed water storage tank behind NSH.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating the Napa Sanitation District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[50] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Napa Sanitation District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. The Napa Sanitation District's reclamation program is well-designed and has adequate capacity to meet existing service demands. The wastewater treatment plant's reclamation facilities can be expanded to meet additional capacity requirements as new users are brought on-line.

2. The Napa Sanitation District's Soscol Wastewater Treatment Plant produces tertiary-level treated wastewater. This level of reclaimed water offers the greatest range of beneficial uses, including agricultural, landscaping, industrial, wetlands maintenance and enhancement, and greenbelt preservation.

3. The Napa Sanitation District's reclamation program is a beneficial and efficient use of existing water resources by lessening the demand for potable water within its service area.

Growth and Population Projections:

1. The extension of reclaimed water service within Napa Sanitation District's service area will not induce growth beyond what is already planned for in the land use plans of the City of Napa and County of Napa.

Financing Constraints and Opportunities:

1. The Napa Sanitation District has an agreement with the City of Napa permitting it to solicit and provide reclaimed water service within a portion of Napa's water service area. As part of this agreement, the Napa Sanitation District is required to reimburse Napa for the loss of potable water sales revenue attributed to a customer's conversion to reclaimed water service. As Napa Sanitation District begins to extend reclaimed water service within this area, future studies should more fully examine the impact this arrangement has on the District's fiscal solvency.

[50] LAFCO Resolution No. 03-29, adopted October 11, 2003.

Cost Avoidance Opportunities:

1. The Napa Sanitation District is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." The study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050, including the use of reclaimed water as an alternative source for agricultural, industrial, and irrigation customers. Napa Sanitation District will benefit from the study and should continually explore collaborative opportunities aimed at expanding its reclamation program for mutually beneficial uses.

2. Through the expansion of its reclamation program, the Napa Sanitation District will reduce the demand and cost for dry season storage.

Opportunities for Rate Restructuring:

1. The Napa Sanitation District is currently the only public agency providing tertiary-level reclaimed water service for a fee in Napa County. Accordingly, a rate comparison with other agencies in the County is not available.

2. The Napa Sanitation District's reclaimed water rates are adjusted according to the United States Department of Labor's Consumer Price Index. It is anticipated that rates will continue to incur marginal changes to match market conditions within the timeframe of this study.

   Over the past five years, Napa Sanitation District's reclaimed water rates have increased approximately 2.6% ($0.75 per 1,000 gallons to $0.77 per 1,000 gallons).

Opportunities for Shared Facilities:

1. The Napa Sanitation District may have an opportunity to share costs and facilities with the City of American Canyon relating to the provision of reclaimed water service. American Canyon is scheduled to begin providing reclaimed water service by the end of 2003 following the completion of its first reclaimed water transmission line. Due to the close proximity of their service boundaries, this relationship may provide an opportunity for each agency to pursue cost efficiencies with one another, including the development of mutually beneficial reclamation projects.

2. The Napa Sanitation District and the City of Napa share resources relating to each agency's toilet retrofit program. Both agencies' programs are managed by a shared employee and offer incentives for constituents to replace their standard and low-flush toilets with ultra-flush toilets. This collaborative effort reduces the amount of wastewater needed to be collected and treated by Napa Sanitation District, while lessening the demand on Napa's potable water supply. This relationship facilitates cost efficiencies between both agencies and serves to encourage the efficient use of existing water resources within each agency's respective service area.

3. The Napa Sanitation District is a member of the North Bay Watershed Association, a stewardship organization comprised of several public water and wastewater agencies in Sonoma and Marin counties. This organization's objective is to identify and promote opportunities for the preservation and enhancement of the San Pablo Bay watershed. In addition to facilitating regional studies, this organization may provide a mechanism for the Napa Sanitation District to share in the costs of mutually beneficial reclamation projects throughout the North Bay.

   The North Bay Watershed Association is currently examining the feasibility of developing a reclaimed water delivery system to convey treated wastewater from participating agencies in Marin, Sonoma, and Napa to flush out discarded salt ponds in southern Napa County. This reclamation project would serve two objectives: provide environmental enhancement of the abandoned salt ponds, and reduce the dry season storage requirements for participating agencies, including the Napa Sanitation District.

Government Structure Options:

1. The Napa Sanitation District is the only public agency providing reclaimed water service within its jurisdictional boundary. The City of Napa is the only other public agency empowered to provide reclaimed water service whose jurisdiction overlaps that of Napa Sanitation District. Under the terms of a 1998 agreement, the Napa Sanitation District is permitted to solicit and provide reclaimed water service within a specified portion of Napa's water service area; Napa has elected not to exercise its right to provide reclaimed water service. A jurisdictional-wide arrangement for the provision of reclaimed water service would enhance planning between both agencies and facilitate greater opportunities for the extension of reclaimed water service for beneficial uses.

2. There are several development projects planned for the Napa Valley Gateway Business Park and Napa County Airport area. It is anticipated that these developments, coupled with planned uses within the City of Napa's "reuse area," will create a significant increase in demand for reclaimed water service. Future studies should include an evaluation of these demands and their impact on Napa Sanitation District's reclamation capacity.

3. It is anticipated that the growing demand for reclaimed water for agricultural and landscaping purposes in southern Napa County will create a demand for outside user agreements with Napa Sanitation District. The extension of reclaimed water service outside Napa Sanitation District's jurisdictional and sphere of influence boundaries does not require the approval of LAFCO pursuant to Government Code Section §56133(e).

4. Due to the natural service relationships between the Napa Sanitation District and the City of Napa, opportunities for reorganization involving these agencies should be evaluated as part of a future study.

Evaluation of Management Efficiencies:

1. The Napa Sanitation District provides an annual summary of past and projected revenues and expenditures for its reclaimed water service operations as part of its annual budget. The budget is adopted following publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to reclaimed water service. In addition to enhancing the accountability of appointed representatives, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

2. The Napa Sanitation District is currently in the process of completing major improvements to its reclamation program. These improvements include the development of the Kennedy Pipeline, which will make available reclaimed water service to current potable water customers within the City of Napa's "reuse area." Other projects planned for within the timeframe of this study includes the construction of a 5.0 million gallon reclaimed water storage facility to serve Napa's reuse area and the development of a reclaimed transmission line serving the Enterprise Court subdivision. These planned projects demonstrate a continued effort on behalf of management to identify and extend service to potential reclaimed water customers in a timely and efficient manner.

3. The Napa Sanitation District maintains an agreement with the Los Carneros Water District to provide the Carneros area with reclaimed water service for agricultural uses. The extension of reclaimed water service to the Los Carneros Water District area holds the promise of providing Napa Sanitation District with a beneficial use for its treated wastewater, while lessening the existing demand for groundwater and creek diversions in the Carneros region.

4. The Napa Sanitation District should make a concerted effort to determine the feasibility of providing reclaimed water service to the Los Carneros Water District under the provision of its current contract agreement.

5. The Napa Sanitation District's reclamation program is primarily financed through the collection of wastewater fees. Future studies involving Napa Sanitation District's wastewater operations should more fully examine its fiscal capacities.

Local Accountability and Governance:

1. The Napa Sanitation District's board meetings are conducted twice a month and are open to the public. Public inquiries involving its reclaimed water service operations can be addressed to the Board at this time. Regularly scheduled board meetings provide an opportunity for ratepayers to ask questions of their appointed representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The Napa Sanitation District makes reasonable efforts to maintain public dialogue with its ratepayers regarding its reclaimed water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

   These efforts include publishing a quarterly newsletter that includes information relating to its reclamation program. Ratepayers can also visit or call Napa Sanitation District's administration office during regular business hours to discuss questions regarding reclamation services and operations.

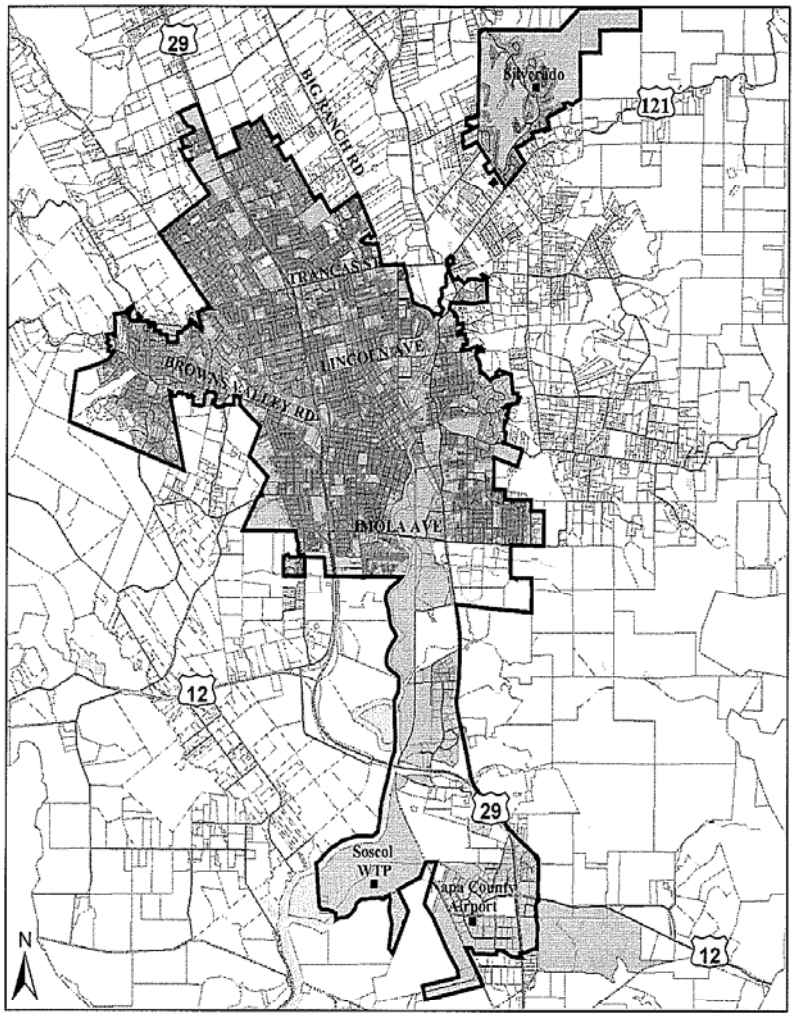
3. The Napa Sanitation District should enhance its public outreach efforts by developing a website that includes information relating to its wastewater and reclamation operations. In addition to posting dates and agendas for board meetings, the website should contain educational information relating to reclaimed water service, including allowable uses and availability.

   Napa Sanitation District is currently in the process of developing a website: http://napasanitationdistrict.com. This website is expected to be available to the public in October, 2003.

4. As Napa Sanitation District's reclamation program expands, the District should appoint a designated employee or representative to administer and oversee its reclamation services.

5. The Napa Sanitation District's administration and reclaimed water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Napa Sanitation District



LEGEND

District Boundary

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Prepared by: KS

SPANISH FLAT WATER DISTRICT

OVERVIEW

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. At the time of its formation, it was anticipated that the District's approximate 673-acre service area would develop into a comprehensive residential and recreational community. Local property owners petitioned for the formation of the District to help facilitate the development of this community. Notable plans for the community included the development of a 53-lot residential subdivision to be known as the "Spanish Flat Woodlands." Other areas within the District's service area included a small number of existing residences, a commercial center, a mobile home court, and a public cemetery.

In 1964, SFWD issued general obligation bonds to finance the purchase of a water system owned by the Spanish Flat Mutual Water Company. The Spanish Flat Mutual Water Company, which was incorporated in 1961, had been the previous water service provider for the area. Facilities purchased by the District included an intake system to Lake Berryessa, a filtration plant, storage facilities, and a distribution system. Revenue generated from the sale of general obligation bonds was also used to make improvements to the existing water system along with extending the distribution system to serve the Spanish Flat Woodlands subdivision.[51] Later that year, the District secured an annual water entitlement to Lake Berryessa following an agreement with the Napa County Flood Control and Water Conservation District. Renewed in 1999, the agreement provides the District with an annual entitlement of 200 acre-feet of water from Lake Berryessa through 2024.

As a result of three annexations, between 1965 and 1977, SFWD more than doubled the size of its original service area. In 1965, the District annexed approximately 170 acres of non-contiguous territory near the Rancho Monticello Resort. The annexation of this territory was intended to facilitate the development of a 160-acre residential subdivision, with the remaining 10 acres to be used for commercial uses. However, three years after annexation, the Napa County Board of Supervisors amended the territory's zoning standard as part of a countywide agricultural preserve act. As a result of the new zoning standard (Agricultural Watershed), development of the territory was not pursued.

In 1976, SFWD annexed the Spanish Flat Resort. The approximate 225-acre resort, along with six other resorts, was developed in the late 1950s following an agreement with the County of Napa to provide recreational and commercial services to the public at Lake Berryessa. Administrative duties concerning recreational development at Lake Berryessa were later assumed by the United States Department of the Interior, Bureau of Reclamation, in 1975. During this time, the resort's water treatment facilities had proven inadequate to meet growing system demands. To this end, the resort sought and reached

[51] Revenue generated from the sale of general obligation bonds was also used to purchase sewer facilities owned by the Spanish Flat Resort, Inc., the previous sewer provider for the area.

agreement to connect to the District's distribution system for the purpose of receiving potable water supplies.[52]

In 1977, SFWD annexed a non-contiguous residential subdivision north of the Spanish Flat service area known as "Berryessa Pines." The annexation was petitioned by property owners in order for the District to assume water and sewer service responsibilities from the prior service provider, the Berryessa Water Company. Water supplies for the approximate 32-acre subdivision, which was developed in 1959, were drawn from local water sources consisting of two wells and five springs. By the mid-1970s, water shortages occurred within the subdivision during summer months as demands outpaced available supplies. To abate further water shortages, a moratorium on water service connections was issued by the Napa County Department of Public Health. This moratorium restricted development within the planned 99-lot subdivision by limiting the number of permitted water service connections to 50, pending the development of an adequate water supply. A temporary transmission line was also constructed to obtain emergency water supplies from the nearby Rancho Monticello Resort. Upon its annexation and acquisition of existing facilities at Berryessa Pines, the District authorized an independent engineering report to evaluate needed capital improvements. An assessment district was later established to finance water and wastewater improvements for Berryessa Pines as recommend in the engineering report. Notable capital improvements included improvements to an existing filtration plant and an intake system to Lake Berryessa.

In 1997, SFWD authorized an outside consultant to perform an evaluation of its water treatment and storage facilities. The study was in response to an earlier notice by the California Department of Health Services for the District to make improvements to the water treatment plants serving the Spanish Flat and Berryessa Pines service areas. Notably, the notice stated that improvements were needed for both plants to comply with filtration and disinfection standards under California's Surface Water Treatment Rule. In addition to recommending the construction of new water treatment plants, the study recommended replacing an existing 12,000 gallon storage tank with a 100,000 storage tank and installing new liners for three storage tanks in the Spanish Flat service area.

SFWD is currently in the process of fulfilling the terms and conditions on two grants awarded by the State of California for the construction of new water treatment plants for the Berryessa Pines and Spanish Flat service areas.[53] Distribution of both grants, which represent 80 percent of the anticipated construction costs for each plant, is contingent on the District securing funding for the remaining 20 percent. To meet these terms and conditions, the District has scheduled an election in February 2005 for the establishment of assessment districts for both service areas.[54]

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[52] The Spanish Flat Resort's potable water distribution system remains independent from SFWD.

[53] In 2004, SFWD prepared an initial study and a mitigated negative declaration for the construction of a new water treatment plant for the Spanish Flat service area. A categorical exemption for the construction of a new water treatment plant for the Berryessa Pines service area was also issued by the District.

[54] Construction of new water treatment plants for the Spanish Flat and Berryessa Pines service areas is anticipated to cost approximately $496,000 and $1,000,000 respectively.

GOVERNANCE

SFWD was organized under the California Water District Law, Division 13 of the California Water Code. The District's governing body is comprised of an elected five-member board of directors who serve staggered four-year terms. In order to serve, a board member must be a landowner, legal representative, or a designated representative of land within the District. Elections are based on the landowner-voter system, which allows each landowner one vote for each dollar that his or her property is assessed (based on last assessment roll). In addition to electing a president, the board is required to appoint a secretary whose responsibilities include keeping records of all board proceedings. Services can be financed through water and sewer usage and standby charges, the sale of power to a public utility or agency, the lease or sale of surplus water, assessments, and general obligation and revenue bonds.

SFWD's board meetings are conducted on the second Thursday of every month at its administration office and are open to the public. Board members serve on a volunteer basis and are not compensated. Pursuant to the California Water District Law (Water Code 34000 et. seq.), the District is authorized to provide the following municipal services:

- The production, storage, and transmission of water for irrigation, domestic, industrial, and municipal purposes and/or any associated reclamation works (WC §35401)

- The acquisition, construction, and operation of facilities for the collection, treatment, and disposal of sewage, waste, and storm water (WC §35550)

- The construction, operation, and/or maintenance of facilities for the generation of hydroelectric power (WC §35570)

SFWD provides only the first two services listed above.

OPERATIONS

SFWD employs one full-time operator-in-training who oversees and operates the District's potable water and sewer systems. The operator-in-training is a resident of the District and works under the direction of two licensed operators. Both licensed operators are residents of the District and work as needed. The operator-in-training is on call 24 hours a day, seven days a week, to respond to reported emergencies. Customer inquiries, including billing and service request, are directed to the District's administration/field office. The office is located next to the Spanish Flat's sewer treatment facility. The District also employs a full-time maintenance employee and a part-time administrator. The administrator's responsibilities include acting as district secretary and interacting on behalf of the board with local government agencies.

ADOPTED BOUNDARIES

SFWD's adopted service area is comprised of four non-contiguous, unincorporated areas consisting of approximately 1,178 acres. The District's adopted sphere of influence includes all land located within its jurisdictional boundary. The District is under the land use authority of the County of Napa. Land located within the District's adopted sphere of influence is designated under the County's General Plan as "Agriculture, Watershed and Open Space" and "Rural Residential." Zoning for this area is comprised of five standards: "Agricultural Watershed," "Commercial Limited," "Commercial Neighborhood," "Marine Commercial," and "Residential Single: B-1." Minimum parcel sizes for these zoning standards range from 8,000 square feet (Residential Single) to 160 acres (Agricultural Watershed).

SFWD – Adopted Boundaries	
District Boundary:	1,178 acres *****
Sphere of Influence Boundary:	1,325 acres *****

* Figures are approximations calculated using information generated by LAFCO and the County of Napa's geographic information systems.

WATER SUPPLY

SFWD's water supply is drawn from Lake Berryessa.[55] 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 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.

SFWD – Available Water Supply (acre-feet)	
Solano Project:	200 (annual entitlement) *

[55] Lake Berryessa was developed by the United States Department of the Interior, Bureau of Reclamation, as part of its Solano Project. The Solano Project originally intended to provide Napa, Yolo, and Solano Counties with a reliable source of water for agricultural and domestic uses. After concluding that the Berryessa Valley would be an ideal location for the creation of a water reservoir by damming Putah Creek, the Bureau of Reclamation approached all three counties about participating in a joint project. However, both Napa and Yolo decided against participating in the project, leaving Solano County as the sole participant. The Monticello Dam was completed in 1957, and the formation of Lake Berryessa was finished by 1964. Based on its participation, Solano County maintains the majority of water rights to Lake Berryessa. Lake Berryessa has an approximate storage capacity of 1.6 million acre-feet.

* 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 – Service 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. Of this amount, 31 connections are residential, while 15 connections are commercial (note: one commercial connection provides water service to the 48-space Spanish Flat Mobile Villa[56], while three commercial connections provide water service to the Spanish Flat Resort).[57]

Spanish Flat Service Area – 2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(3). Estimate based on the total number of equivalent dwelling units (EDU) and multiplied by a service factor of 2.8. EDU assignments for the District include 31 for single-family residences, 11 for commercial establishments, 48 for the Spanish Flat Mobile Villa, and 221 for the Spanish Flat Resort.

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

[56] The Spanish Flat Mobile Villa provides rental spaces for 48 trailer homes.

[57] The Spanish Flat Resort is one of seven concessionary resorts under contract with the United States Department of the Interior, Bureau of Reclamation, to provide recreational and commercial services to the public at Lake Berryessa. Notably, the resort rents 180 recreational home spaces to seasonal residents. Recreational home tenants are allowed to live at the resort for up to 180 days a year (no more than 90 consecutive days). The resort is open year-round with peak services between May and September. The resort's daytime population during this period averages 2,000. Recreational home spaces are secured through one-year leases.

Berryessa Pines – Service 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. All 73 connections are located within the Berryessa Pines subdivision and serve single-family residences.

Berryessa Pines Service Area – 2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water must be available from the water sources and distribution reservoirs to adequately meet the requirements off all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections and multiplied by a service factor of 3.3.

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

WATER TREATMENT FACILITIES

Spanish Flat Water Treatment Facility:
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 filters and disinfects raw water generated from an intake system at Lake Berryessa before entering the distribution system. The treatment process begins as raw water is captured by the intake system, which is powered by two submersible pumps, and conveyed to the Spanish Flat WTP. Polymer (coagulant) and chlorine (disinfectant) are added and mixed as the raw water is cycled through a pressurized sand filter. Solids are separated and suspended from the treatment process in the filter tank and ultimately discharged into an adjacent sludge pond. After completing its detention time in the filter, the water is placed inside a clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the distribution system require recharge. 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.

Spanish Flat Water Treatment Facility	
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.

Berryessa Pines Water Treatment Facility:
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 filters and disinfects raw water generated from an intake system at Lake Berryessa before entering the distribution system. The treatment process begins as raw water is captured and conveyed by an intake system to the Berryessa WTP. Raw water is injected with polymer (coagulant) and chlorine (disinfectant) before being cycled through a pressurized sand filter. Solids are separated and suspended from the treatment process in the filter tank and ultimately discharged into an adjacent sludge pond. After completing its detention time in the filter, the water is placed inside a clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the distribution system require recharge. 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.

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

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

Spanish Flat – Water Distribution System:
The Spanish Flat's water distribution system receives and distributes treated water generated from the Spanish Flat WTP. The distribution system includes a network of six and eight inch water lines. The Spanish Flat service area includes the Spanish Flat Woodlands subdivision, Spanish Flat Village Center, Monticello Public Cemetery, Spanish Flat Mobile Villa, and the Spanish Flat Resort. The distribution system overlays three water pressure zones and is served (recharge and system pressure) 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.

The distribution system responds to water levels with the system's initial 24,000 gallon storage tank (Storage Tank 1). When water levels within Storage Tank 1 fall below a designated operating level, potable water is discharged from the clearwell tank into the distribution system. As water enters the distribution system, storage levels within five of the six storage tanks are recharged. A 12,000 gallon storage tank is located within the third pressure zone and requires the use of a booster pump station in order to be recharged. This storage tank currently provides water service to 10 residences located outside the Spanish Flat Woodlands subdivision. All six storage tanks work in conjunction with one another to maintain adequate pressure in the system by using gravity.

Spanish Flat Service Area - Distribution Storage Capacity	
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 – Water Distribution System:
The Berryessa Pines' water distribution system receives and distributes treated water generated from the Berryessa Pines WTP. 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 overlays one water pressure zone and is served (recharge and system pressure) by a 100,000 storage tank. Due to the service area's topography, a pump station is required to lift treated water stored in the Berryessa Pines WTP's clearwell tank into the distribution system.

The distribution system responds to water levels in the system's 100,000 gallon storage tank. When storage levels within the tank fall below a designated operating level, treated water is discharged from the clearwell tank into the distribution system. As water enters the distribution system, water level inside the storage tank are recharged. The storage tank is located above the distribution system and uses gravity to maintain pressure in the system.

Berryessa Pines Service Area – Distribution Storage Capacity	
Storage Tank 1:	100,000 gallons
TOTAL	**100,000 gallons***

***** Total does not include storage capacity at the Berryessa Pines WTP's clearwell tank.

RATE SCHEDULE

SFWD customers are charged two monthly fees for water service: a usage charge and an availability charge. Rates for these charges are divided between residential and commercial customers as well as inside and outside customers.[58] Residential and commercial customers inside the District are charged an identical usage rate based on the volume of water delivered according to a tiered rate schedule, which is measured in units of 1,000 gallons. Residential and commercial customers outside the District are charged a fixed usage rate based on the amount of water delivered, which is also measured in units of 1,000 gallons. All customers are charged a fixed availability fee based on their residential or commercial designation. The District also collects a connection fee for water service in the amount of $4,000.

SFWD – Rate Schedule	
Inside Usage Fee Residential and Commercial:	 $1.38 for 0 to 6,000 gallons $1.65 for 6,001 to 12,000 gallons $1.93 for 12,001 to 18,000 gallons $2.20 for 18,001 and more gallons
Outside Usage Fee Residential and Commercial:	 $2.20 per 1,000 gallons
Inside Residential Availability Fee Residential: Commercial:	 $25.30 $55.00
Outside Availability Fee: Residential: Commercial:	 $40.15 $70.40
Water Connection Fee:	$4,000

FINANCIAL

SFWD has an approved operating budget for 2002-2003 of $177,307. This amount includes water and sewer operations. Primary expenses include maintenance and operation costs, payroll, and utilities. The District's anticipated revenue for 2002-2003 is $207,917. Revenue sources include usage and availability charges as well as an energy surcharge.[59] The District's reserve balance as of August 2002 was $52,654.

[58] SFWD does not provide water service outside its jurisdictional boundary. The District does sell water to construction firms at its "outside" customer rate.

[59] The energy surcharge is applied to each customer, and presently equals 15 percent of each customer's monthly water bill. This surcharge is intended to recover pumping costs and is reviewed by the Board on a quarterly basis.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating the Spanish Flat Water District's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[60] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of the District's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its contractual agreement with the Napa County Flood Control and Water Conservation District, the Spanish Flat Water District imports an adequate supply of water to meet existing system demands for its two service areas under normal conditions. It is anticipated that this supply is sufficient to meet future system demands under normal conditions within the timeframe of this study.

2. The Spanish Flat Water District should continue to pursue opportunities to increase and enhance its available water supply by developing a water conservation program. A water conservation program, which should encompass a variety of measures to remind constituents of the importance of conservation, will reduce system demands and help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. The ability of the Spanish Flat Water District to address infrastructure needs or deficiencies in a timely manner is constrained by its financial resources relative to the cost of service.

4. The Spanish Flat Water District's maximum day water demand is an important component in evaluating its current and future service capacities.

   Title 22 of the California Code of Regulations requires all public water service providers ensure sufficient water be available from their supply, treatment, and storage facilities to adequately and dependably meet the requirements of all users under maximum demand conditions before permitting additional connections.

5. The Spanish Flat Water District requires improvements to its water treatment plant to independently meet maximum day water demands for its Spanish Flat service area. This results in a increased dependence on stored reserves to help meet maximum day demands that are equal or exceed the capacity of its water treatment plant.

[60] LAFCO Resolution No. 04-24, adopted October 14, 2004.

Spanish Flat Water District's maximum day water demand for its Spanish Flat service area in 2002 was 179,000 gallons, while its treatment plant's daily capacity is 144,000 gallons.

6. The Spanish Flat Water District has adequate water treatment capacity to independently meet existing maximum day water demands for its Berryessa Pines service area. It is anticipated that this capacity is sufficient to meet future maximum day water demands within the timeframe of this study.

   Spanish Flat Water District's maximum day water demand for its Berryessa Pines service area in 2002 was 97,000 gallons, while its treatment plant's daily capacity is 144,000 gallons.

7. The Spanish Flat Water District requires improvements to its treated water storage facilities to independently meet maximum day water demands for its Spanish Flat service area. Additional storage capacity is needed to help ensure adequate reserves are available during an emergency or interruption in service.

   Spanish Flat Water District's maximum day water demand for its Spanish Flat service area in 2002 was 179,000 gallons, while its treated water storage capacity is 132,000 gallons.

8. The Spanish Flat Water District requires improvements to its treated water storage facilities to independently meet maximum day water demands for its Berryessa Pines service area. Additional storage capacity is needed to help ensure adequate reserves are available during an emergency or interruption in service.

   Spanish Flat Water District's maximum day water demand for its Berryessa Pines service area in 2002 was 97,000 gallons, while its treated water storage capacity is 100,000 gallons.

9. Central components of the Spanish Flat Water District's water system, including its treatment plant and storage tanks, have been in operation since the 1960s. As a result, the water system requires a higher level of maintenance, resulting in additional costs with respect to repairs and staff time.

10. The Spanish Flat Water District requires a comprehensive facilities plan regarding its water service operations. This plan should evaluate existing water system facilities, project future water demands, and offer recommendations with respect to immediate and long-term capital improvements that are consistent with the service needs of the community.

Growth and Population Projections:

1. The Spanish Flat Water District is under the land use authority of the County of Napa. Within its jurisdictional boundary, there are several zoning standards that allow for additional commercial and residential development to occur within the District. These zoning standards, which reflect the original development plans for the community, currently accommodate two partially developed residential

subdivisions, several low density commercial sites, and a number of vacant parcels. Based on past market demand and present land use policies, little or no development is expected to occur within the District within the timeframe of this study.

2. In 2004, Napa County issued a draft update to its General Plan Housing Element. The draft update identifies potential development sites for affordable housing projects in unincorporated areas of the County, including parcels located within the jurisdictional boundary of the Spanish Flat Water District. If realized, the affordable housing projects identified in the draft update for the Spanish Flat area would result in a significant increase in service population for the District.

   The draft update anticipates that the Spanish Flat area could accommodate up to 110 new residential units, ranging from manufactured single-family residences to apartment complexes. To facilitate these development projects, the draft update proposes that the Board of Supervisors adopt a "Affordable Housing Overlay Zone" for the affected parcels.

3. Land located outside of the Spanish Flat Water District's jurisdictional boundary is designated under the County of Napa General Plan as "Agriculture, Watershed, Open Space." This land use designation discourages the Commission from approving annexation proposals to the District based on its policy to direct the extension of municipal services away from land designated for agriculture unless it is in response to a health or public safety concern.

4. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(3) is an appropriate method in estimating the total population served by Spanish Flat Water District's water service system within its Spanish Flat service area. The population served by the District's water system based on this calculation method is 871.

5. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by Spanish Flat Water District's water service system within its Berryessa Pines service area. The population served by the District's water system based on this calculation method is 241.

Financing Constraints and Opportunities:

1. The Spanish Flat Water District's water supply agreement with the Napa County Flood Control and Water Conservation District provides the District with a reliable source of water at a cost below market value. This agreement enables the District to establish and maintain a revenue stream based on its water supply that exceeds its cost of purchase, which helps to finance other operational and maintenance services.

The Spanish Flat Water District currently pays the Napa County Flood Control and Water Conservation District $20 per acre foot (325,900 gallons), while charging residential customers a tiered usage rate starting at $1.38 per 1,000 gallons. This results in a cost-to-revenue of $20 to $707 for each acre-foot (note: this does not take into account pumping, treatment, storage, and distribution costs).

2. Approximately one-fourth of the Spanish Flat Water District's annual revenue is generated from water service charges to the Spanish Flat Resort, which is under contract with the federal government to provide visitor services at Lake Berryessa. The federal government is presently evaluating redevelopment opportunities at Lake Berryessa, which may result in significant operating changes for the Spanish Flat Resort at the conclusion of its contract in 2008. As a result, pending a final determination by the federal government concerning future visitor services at Lake Berryessa, the District is subject to a significant loss in annual revenues within the timeframe of this study.

3. The Spanish Flat Water District's connection fee for water service is low relative to the connection fee adopted by other public water service providers in Napa County. The District should consider increasing its connection fee to help cover the cost of capital improvements needed to serve existing and future development within its jurisdictional boundary.

4. The Spanish Flat Water District's connection fee serves as a buy-in charge for new development within its jurisdictional boundary. This is an appropriate and equitable approach to ensuring that new development pays a fair share of past and future expense relating to the development and maintenance of the water system.

5. The ability of the Spanish Flat Water District to generate sufficient revenues has been hampered by unfulfilled development plans within its jurisdictional boundary. As a result, service costs for the District is spread out among fewer ratepayers, resulting in under funded operations and dependency on outside assistance to finance capital improvements.

6. The Spanish Flat Water District has been successful in securing grant funding from the State of California to help finance the construction of new water treatment plants for the Spanish Flat and Berryessa Pines service areas. The District should continue its efforts to secure grant funding through various programs administered by the California Department of Water Resources, including the Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002. These continued efforts will help the District fund needed capital improvements, such as expanding storage capacities, without depleting its cash reserves.

Cost Avoidance Opportunities:

1. The Spanish Flat Water District would benefit from a regional study evaluating whether cost avoidance opportunities are available with respect to joint agency practices with other special districts serving the Lake Berryessa area. Notably, a regional study may identify opportunities for the District to realize savings relating to infrastructure and equipment purchases, engineering services, and administrative costs.

Opportunities for Rate Restructuring:

1. The Spanish Flat Water District's water rates are among the lowest of all public water service providers in Napa County. To enhance its revenue stream, the District should consider increasing its water rates to be more reflective of the actual costs of providing water service along with capturing reserve funding.

2. The Spanish Flat Water District currently operates with limited cash reserves to help finance special projects or emergency improvements. This increases the District's dependency on outside financing to fund capital improvements or sustain operations in the event of an emergency. It is imperative that the District build-up its cash reserves to maintain the solvency of its water service operations.

   As of August 2002, the Spanish Flat Water District maintained a cash reserve balance of $52,654.

3. It is appropriate for the Spanish Flat Water District to amend its water rates to be more reflective of the actual costs of providing water service. An increase in rates would provide the District with additional revenue needed to finance capital improvements and help to build up its cash reserves.

4. The Spanish Flat Water District's tiered water usage rate schedule assists the District in recovering costs of providing service to high-use customers, while encouraging water conservation by providing a financial incentive to conserve.

Opportunities for Shared Facilities:

1. The Spanish Flat Water District should explore opportunities to share costs with the Lake Berryessa Resort Improvement District and the Napa-Berryessa Resort Improvement District based on their proximity and similar service area characteristics.

Government Structure Options:

1. The Spanish Flat Water District is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of the District: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. The Spanish Flat Water District has been successful in achieving its original service objective to provide water and sewer service to the Spanish Flat area. However, due to its financial constraints, it is unclear whether the District under its present organization can continue to effectively meet the service needs of the community.

3. Preliminary analysis suggests that there may be advantages to pursuing a change in organization for the Spanish Flat Water District, and that consolidation with the Lake Berryessa Resort Improvement District and the Napa-Berryessa Resort Improvement District may be appropriate. Notably, reorganization of these districts may establish economies of scale necessary to enhance operational and service levels within their respective jurisdictional boundaries and help to formalize service provision in the Lake Berryessa area.

4. Pursuant to California Government Code §56378, LAFCO should conduct a governance study to evaluate the merits of reorganizing the Spanish Flat Water District, Lake Berryessa Resort Improvement District, and the Napa-Berryessa Resort Improvement District. This study should be completed prior to the next scheduled service review of the District.

Evaluation of Management Efficiencies:

1. The Spanish Flat Water District provides an annual summary of past and projected revenues and expenditures relating to its water service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected representatives, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

Local Accountability and Governance:

1. The Spanish Flat Water District's board meetings are conducted once a month and are open to the public. Public inquiries involving water service operations can be addressed to the Board at this time. Regularly scheduled board meetings provide an opportunity for District constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The Spanish Flat Water District's governing body is comprised of five directors serving elected four-year terms. The ability of the District to continually maintain a full board roster has helped establish continuity with respect to policies and procedures along with fostering local accountability within the community.

3. The Spanish Flat Water District makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

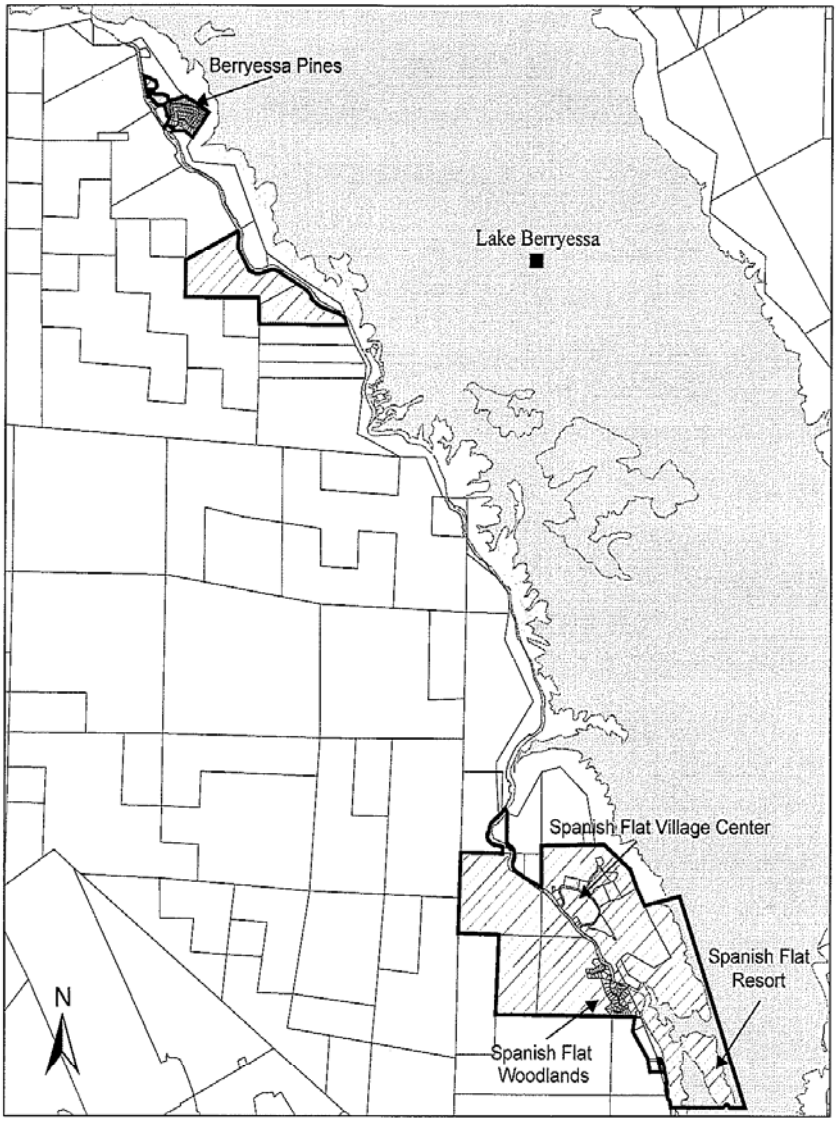
4. The Spanish Flat Water District provides water service to two distinct service areas, Spanish Flat and Berryessa Pines. The District should continue to pursue opportunities to engage the public within both communities with respect to identifying and meeting their respective service needs.

5. The Spanish Flat Water District should closely monitor and participate in the review of the draft update to Napa County's General Plan Housing Element. This update, which may facilitate the creation of up to 110 new residential units within the District's jurisdictional boundary, could have significant impacts on its service operations and may amend the service needs of the community.

6. The Spanish Flat Water District should closely monitor the plans of the United States Department of the Interior, Bureau of Reclamation, with respect to long-term visitor uses at Lake Berryessa. This will help prepare the District for possible operational changes at the Spanish Flat Resort, which may require the development of an alternative service plan to account for a diminished revenue stream.

7. The Spanish Flat Water District's water service operations are maintained and managed by a responsive and courteous staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Spanish Flat Water District



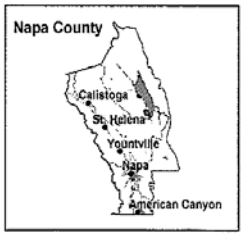
LEGEND

District Boundary

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP



Local Agency Formation Commission LAFCO Napa County

Prepared by: KS

CITY OF AMERICAN CANYON

OVERVIEW

At the end of the 19th Century, the emergence of agriculture and cattle grazing at the southern end of Napa County led to the development of a small rural community, known originally as "Napa Junction." The community's original name reflected its relationship with the railroad system; the community served as a crossing for railroad lines traveling to and from Napa County. Over time, the community's name was changed to American Canyon. Augustus Watson's discovery in the early 1900s of clay and limestone underlaying portions of American Canyon led to the community's first industrial enterprise, the Standard Portland Cement Company.

By the end of the 1950s, American Canyon had steadily grown to a population of approximately 1,000. In 1961, to meet the needs of this growing community, the American Canyon County Water District (ACCWD) was formed to provide wastewater and potable water services. The District initiated wastewater services in 1965 after completing construction on a sewage and collection system as well as purchasing the Rancho Del Mar Sanitary Corporation. That same year, District voters authorized the sale of $370,000 in revenue bonds to facilitate the purchase of the California-Pacific Utilities Company – Napa Junction Water System (potable water purveyor for the affected area).[61]

In 1966, in anticipation of purchasing the California-Pacific Utilities Company – Napa Junction Water System, ACCWD entered into a water supply agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). In addition to providing ACCWD with an annual entitlement through 2035 of water drawn from the State Water Project (SWP), the agreement was the first legal document delineating an exclusive service area for the District. The agreement defines the District's service area as Soscol Creek to the north, Solano County to the east and south, and the Napa River to the west. Pursuant to this agreement, no other agency under contract with NCFCWCD is permitted to provide water service within the District's service area. The District's purchase of the utility company was finalized in 1967.

To secure access to its newfound water supply, ACCWD reached a 20-year water supply agreement with the City of Napa in 1967. The water supply agreement enabled the District to begin receiving its SWP entitlement through an interconnection with Napa's distribution system. As a result, the District was able to begin accessing its SWP entitlement without having to construct its own treatment and transmission system connecting to the Napa Turnout Reservoir.[62] To facilitate delivery, the District turned over its SWP entitlement to Napa in exchange for an equivalent amount of water drawn from one of Napa's three water supplies: SWP, Lake Hennessey, and Milliken Reservoir.

[61] Water supplied by the California-Pacific Utilities Company was generated from a water supply agreement with the City of Napa.

[62] The Napa Turnout Reservoir is a 7.0 million gallon storage reservoir that is operated by the California Department of Water Resources and connects to the North Bay Aqueduct.

In exchange, the District paid Napa a calculated fee based on the amount of water delivered. In 1987, the agreement was extended for an additional 10 years before finally expiring in 1997.[63]

The addition of SWP water facilitated growth in American Canyon. From the early 1950s to early 1970s, American Canyon's population more than tripled to approximately 3,800. At the same time, however, the water distribution system purchased from California-Pacific Utilities Company proved inadequate to meet system demands. Specifically, the distribution system was undersized and had begun to deteriorate. As a result, the system began experiencing negative pressure and water losses. Moreover, the system was without storage facilities, leaving it vulnerable to water outages during peak demand periods. To finance a new water system, the District secured a $2,050,000 low-interest loan from the California Department of Water Resources in 1973. A major component of the new water system included a water treatment plant located in Jameson Canyon next to the Napa Turnout Reservoir. Other key components of the new water system included new distribution and transmission systems, as well as a 2.0 million gallon storage tank on Oat Hill. Collectively, the new water system enabled the District to begin accessing its SWP entitlement without the assistance of Napa.

Following the completion of ACCWD's new water system in 1976, development within American Canyon continued to gain momentum. By 1981, American Canyon's population was estimated at 5,800. During this time, public support for incorporating American Canyon materialized, resulting in a ballot measure in November 1981. Although the 1981 ballot measure failed, cityhood was revisited and approved by voters in November 1991, allowing the community to incorporate as the City of American Canyon in 1992. As part of LAFCO's terms and conditions for incorporation, ACCWD was merged into the new City. To this end, all improvements, powers, rights, contracts, and duties of the District were turned over to the City.

In 1996, to protect against shortages of SWP water, and to ensure a steady supply during periods of peak demands, American Canyon entered into a water supply agreement with the City of Vallejo. The agreement entitles American Canyon to a maximum daily capacity of 1.0 million gallons of potable water, resulting in monthly and annual entitlement capacities of 57.14 acre-feet and 628.6 acre-feet respectively. In exchange, American Canyon paid Vallejo a 1.4 million dollar connection fee in addition to agreeing to pay monthly service and volume charges. American Canyon also agreed to be responsible for the cost associated with the construction of transmission and metering facilities necessary to connect the two cities' distribution systems. American Canyon is also credited with a nominal reduction in its monthly volume charge for each acre-foot of raw water drawn from its SWP entitlement and supplied to Vallejo. This water is treated and delivered back to American Canyon and subject to the same terms and conditions as water that is drawn from Vallejo's own potable water supply. Significantly, the agreement includes a provision enabling American Canyon to increase its maximum day capacity over the course of designated time periods. These time periods include specified capacity option increases available to American Canyon through five planning periods:

[63] American Canyon maintains an informal agreement with Napa to purchase potable water.

1996-2001; 2002-2006; 2007-2011; 2012-2016; and 2017-2021. Collectively, the time periods covering 2002 through 2021 provide American Canyon the option to increase its maximum daily entitlement capacity up to 5.1 million gallons (this includes the City's base capacity of 1.0 million gallons) for drought protection purposes.[64] The agreement is in effect until mutually terminated.

In 1998, to help defray the costs incurred following its water supply agreement with the City of Vallejo, American Canyon entered into a water transfer agreement with the City of Calistoga. As part of a three-way agreement involving Vallejo, American Canyon agreed to permanently transfer 500 acre-feet of its annual SWP entitlement to Calistoga. In exchange, Calistoga paid American Canyon a one-time compensation fee of $500,000 and reimbursed Vallejo $114,000 for the construction costs associated with connecting American Canyon and Vallejo's distribution systems. Later that year, American Canyon recovered the sale of its SWP entitlement to Calistoga following an addendum to its 1996 water supply agreement with Vallejo. This addendum provides American Canyon with annual entitlement to 500 acre-feet of "permit water" drawn from Vallejo's water rights to Lindsey Slough (component of the Sacramento-San Joaquin Delta).

To further help defray the costs associated with its water supply agreement with Vallejo, American Canyon reached a water transfer agreement with the Town of Yountville in 2000. This agreement provides for the permanent transfer of 250 acre-feet of American Canyon's SWP entitlement to Yountville in exchange for cash compensation and rights to future pipeline capacity to the North Bay Aqueduct. The agreement, however, does not become effective until specified conditions are satisfied, including the certification of adequate CEQA documents. To this end, an interim agreement was reached allowing Yountville to annually receive 250 acre-feet until the permanent agreement becomes effective. Analogous to its agreement with Calistoga, American Canyon maintains an addendum to its water supply agreement with Vallejo to purchase an equivalent amount of permit water from Vallejo in the event Yountville exercises its right to purchase water from the City.[65]

American Canyon's water supply was augmented once again 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. As a participant, American Canyon's share of the Kern County water transfer is 500 acre-feet.

[64] The agreement includes a provision that American Canyon's decision not to purchase additional capacity within an applicable time period relieves Vallejo from having to reserve such capacity for the City. American Canyon's decision not to purchase the additional capacity reserved during the 1996-2001 time period relieves Vallejo from having to reserve 1.15 million gallons of the 6.25 million gallons of maximum daily capacity originally offered to the City. As a result, the maximum daily capacity available to American Canyon over the next four time periods in which Vallejo is obligated to reserve is 5.1 million gallons. This amount equates to monthly and annual entitlement capacities of 291.414 and 3,205.86 acre-feet.

[65] As of March 2003, Yountville has not required the use of the interim agreement, but remains available for drought protection.

In 2002, American Canyon authorized an outside consultant to conduct an update of its *Water Master Plan (1996)*. The update includes a review of the existing water system and recommendations on immediate and long-term capital improvements. Specifically, the update recommends a two-phase capital improvement program addressing current and future system requirements. The first phase, covering current system requirements through 2006, recommends several pipeline replacement projects as well increasing the City's water treatment and storage capacities. Most notably, the first phase proposes that the City more than triple the current day treatment capacity at the American Canyon WTP from 2.6 to 8.6 million gallons. Other recommended improvements include constructing a 2.6 million gallon storage tank on the northeast side of the City and a 2.0 million gallon storage tank to serve the La Vigne subdivision. The second phase, covering system needs from 2006 through build-out[66], proposes additional pipeline replacement projects and a second 2.6 million gallon storage tank in the northeast side of the City. In all, the update proposes a total of 18 capital improvement projects at an estimated cost of $18,060,000. Of this amount, approximately 8.5 million dollars is planned for the expansion of the American Canyon WTP.

In addition to offering potable water service, American Canyon intends to alleviate potable water demands within its service area by providing reclaimed water to current potable water customers. The City's plans for reclamation were originally developed in 1997 as part of its *Wastewater Treatment and Reclamation Project Report*. In 2002, after several years of sending wastewater to the Napa Sanitation District, the City completed construction on a new wastewater treatment plant. The treatment capacity of the plant is 2.57 million gallons a day and is equipped with filtering and treatment facilities necessary to produce tertiary water (unrestricted recycled water). The City's reclamation program is scheduled to be implemented in phases, beginning with "Phase One." Phase One is slated to begin at the end of 2003 with services being provided to Green Island Vineyards followed by Hess Collection Wineries. Phase One will also include extending reclamation services to American Canyon Community Park, Donaldson Way School, and Napa Junction School. "Phase Two" will continue the expansion of reclaimed water service to current potable water customers within the City's service area, including agricultural users, schools, and public parks. Phase Two is scheduled to be completed by the end of 2006. American Canyon anticipates implementation of both phases resulting in the annual savings of over 1,000 acre-feet of potable water; potable water conserved by reclamation will then be available and added to the City's potable water supply.

GOVERNANCE

American Canyon was incorporated in 1992 as a general-law city. The City's governing body is comprised of a five-member city council. The City Council appoints from its ranks a mayor and vice-mayor for one-year terms. Councilmembers serve staggered four-year terms and are elected by general vote. A city manager is appointed to oversee and implement policies on behalf of American Canyon's governing body and to provide administration of the City's five departments: administration, community services,

[66] American Canyon estimates its build-out population at 18,000.

finance, planning, and public works. In 1994, the City Council adopted the City's first general plan. The general plan outlines land use and development policies for the City through 2010. Currently, American Canyon's City Council meetings are conducted on the first and third Thursday of each month at the City's Recreation Center. Meetings are open to the public.

OPERATIONS

American Canyon's water system is maintained and operated by the City's Public Works Department, Water Service Division. Typically, a public works director is appointed by the city manager whose duties include overseeing and managing American Canyon's water system division. However, due to the recent departure of its public works director, American Canyon has entered into a one-year contract with Coastland Civil Engineering, Inc. to oversee the public works department. The water division is comprised of three sections: treatment, distribution, and billing & collections. As of February 2003, the division consisted of 14 employees.

ADOPTED BOUNDARIES

American Canyon's incorporated boundary is comprised of two non-contiguous areas consisting of 2,672 acres. Pursuant to its water supply agreement with NCFCWCD, American Canyon's service area is defined as Soscol Creek to the north, Solano County to the east and south, and the Napa River to the west. As part of this agreement, no other agency under contract with NCFCWCD is permitted to provide water service within this area. Land use designations for American Canyon are defined in the City's General Plan.

American Canyon – Adopted Boundaries	
Incorporated Boundary:	2,672 acres *****
Sphere of Influence Boundary:	2,691 acres *****

* Figures are approximations calculated using information generated by LAFCO and the County of Napa's geographic information systems.

WATER SUPPLY

American Canyon's water supply is based on contracted entitlements drawn from two outside sources: the SWP and the City of Vallejo. The City's water supply drawn from the SWP is secured through a 1966 agreement between ACCWD and NCFCWCD. The original agreement provided the City (as successor agency to ACCWD) with an annual entitlement of SWP water through 2035. This agreement also established a maximum annual entitlement of 5,200 acre-feet, made available through gradual increases over the first 23 years. 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.

As noted, the portion of American Canyon's water supply drawn 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, resulting in monthly and annual capacities of 57.14 and 628.6 acre-feet respectively. The agreement also enables 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 monthly and annual entitlement capacities of 291.414 and 3,205.86 acre-feet. Any increase to the base daily entitlement of 1.0 million gallons, however, requires American Canyon to pay additional connection fees.[67]

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

[67] As part of the 1996 water supply agreement, American Canyon paid Vallejo a $1,428,571 connection fee for a maximum daily entitlement capacity of 1.0 million gallons.

agricultural, landscaping or golf course uses. The 1996 agreement, along with the aforementioned addendums, are in effect until mutually terminated.

American Canyon – Available Water Supply (acre-feet)			
Year	**State Water Project***	**City of Vallejo****	**Permit Water*****
2003	4,500	628.6	500
2004	4,600	628.6	500
2005	4,700	628.6	500
2006	4,750	628.6	500
2007	4,800	628.6	500
2008	4,850	628.6	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.

****** American Canyon's agreement with the City of Vallejo for potable water restricts delivery to 1.0 million gallons per day, resulting in monthly and annual entitlement capacities of 57.14 and 628.6 acre-feet respectively. Treated water delivered to American Canyon from Vallejo is generally generated from Lake Berryessa (Napa County), Lake Frey, Lake Madigan (Solano County), or the State Water Project.

*** American Canyon's agreement with the City of Vallejo is for permit water generated from Lindsey Slough that is delivered to the City through the North Bay Aqueduct.

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 gallons. The City's maximum day water demand was 4.75 million gallons. 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.

American Canyon – 2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions (§64562).

** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for American Canyon were identified in its *Water System Master Plan (2003)*. The plan projected water demands for American Canyon under two planning periods: 2006 and buildout. 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.

American Canyon – Projected Water Demands (acre-feet)		
Year	**Average Day Demand**	**Annual Demand**
2006	12.82 *	4,679.30
Buildout	17.05 **	6,223.25

* Based on an average daily demand of 4.176 million gallons.

** Based on an average daily demand of 5.555 million gallons.

WATER TREATMENT 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). The treatment process begins once raw water is released from the Napa Turnout Reservoir and gravity fed through a 12-inch transmission line to the American Canyon WTP. Alum and polymer (coagulants) are added as raw water passes through a rapid mix chamber before entering into two flocculation basins. While in the flocculation basins, the raw water is gently mixed to facilitate the coagulation of unwanted particles. Raw water is conveyed into sedimentation basins allowing solids in the water to settle and separate from the treatment process. Two gravity filters remove solids before chlorine (disinfectant) is added as water is detained in an 118,600 gallon clearwell tank. The clearwell tank completes the treatment process by allowing the treated water to complete its necessary contact time with the chlorine prior to entering the distribution system. Finished water remains in the clearwell tank until storage levels within the City's distribution system require recharge. The American Canyon WTP has a treatment capacity of 1,805 gallons per minute, resulting in a daily treatment capacity of 2.6 million gallons.[68]

[68] American Canyon is scheduled to upgrade the American Canyon WTP's capacity to 5.6 million gallons a day in 2004.

American Canyon Water Treatment Plant	
Water Source:	State Water Project City of Vallejo - "Permit Water"
Treatment Capacity:	1,805 gallons per minute; or 2.6 million gallons per day
Clearwell Storage Capacity:	118,600 gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

American Canyon's water distribution system receives and distributes potable water generated from American Canyon WTP and the City of Vallejo. American Canyon's distribution 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 overlays five pressure zones and is served (recharge and system pressure) by four treated water storage tanks.

Zone 1 serves as American Canyon's primary pressure zone and includes the majority of service connections. Potable water is supplied to Zone 1 by a 2.5 million gallon storage tank located next to the American Canyon WTP. The 2.0 million gallon Oat Hill Tank No. 1 maintains pressure for Zone 1 and provides system recharge during peak demand periods. Zone 1 also includes a subzone (Zone 1A), which receives water generated from Zone 1 through two pressure reducing stations.

American Canyon's remaining four pressure zones serve specific service areas within the distribution system. Zone 2 serves a 44-acre industrial park connection that is located to the west of State Highway 29 in the Hess Drive area. A booster pump station is required to lift potable water from Zone 1 to the 200,000 gallon Oat Hill Tank No. 2, which serves Zone 2. Zone 3 serves four residential connections off of Jameson Canyon Road near the American Canyon WTP. Booster pumps at the American Canyon WTP's clearwell tank are required to lift potable water to a 4,000 gallon storage tank, which serves Zone 3. Zone 4 consists of 63 residential units in the Montevino section of American Canyon's southern border and is served by interconnection with Vallejo's distribution system. This area is located in between Broadway and Flosden Avenues. Zone 5 consists of 173 residential units in the La Vigne subdivision in southeast American Canyon and is served by booster pumps that draw water from Zone 1. In addition, an interconnection with Vallejo provides supplemental fire flow to the subdivision. This area is located east of Flosden Road and north of the Solano County line.

American Canyon's distribution system operates on a supply and demand basis and responds to storage levels within Zone 1's Oat Hill Tank No. 1. When storage levels within Zone 1 require recharge, potable water is released into the distribution system from the 2.5 million gallon storage tank. Constructed in 2002, the 2.5 million gallon storage tank is supplied by the clearwell tank at the American Canyon WTP. As water enters the main distribution system, water levels within Oat Hill Tank No. 1 are recharged.

American Canyon – Distribution Storage Capacity	
American Canyon WTP Tank:	2.5 million gallons
Oat Hill Tank No. 1:	2.0 million gallons
Oat Hill Tank No. 2:	200,000 gallons
"Kirkland" Tank:	4,000 gallons
TOTAL	**4,704,000 million gallons ***

***** Total does not include storage capacity at American Canyon WTP's clearwell tank (118,600 gallons).

RATE SCHEDULE

American Canyon's water customers are charged a monthly usage fee for water service. The usage fee is divided between outside and inside city customers as well as five primary customer classes: single-family residential, multi-family residential, commercial, large industrial, and landscape. The usage charge is based on the volume of water delivered and is measured in units of 100 cubic feet (hcf). In addition, the City charges a monthly availability fee to non-single-family residential and landscape customers.

American Canyon – Rate Schedule	
Water Usage Fee: Single-Family Residential	
Inside City:	$2.50 per hcf
Outside City:	$3.50 per hcf
Water Usage Fee: Multi-Family Residential	
Inside/Outside City:	$2.30 per hcf
Water Usage Fee: Commercial	
Inside City:	$2.30 per hcf
Outside City:	$3.25 per hcf
Water Usage Fee: Large Industrial	
Inside/Outside City:	$1.80 per hcf
Water Usage Fee: Landscape	
Inside City:	$2.50 per hcf
Outside City:	$3.50 per hcf

Water Availability Fees	
Inside Commercial:	$11.00
Outside Commercial:	$15.00
Large Industrial:	$25.00
Multi-Family Residential:	$11.00
Water Service Connection Fees	
Single-Family Residential:	$4,211
Non-Single Family Residential:	TBD by City Engineer

Note: a hundred cubic feet (hcf) is equivalent to 748 gallons.

FINANCIAL

American Canyon's Water Operation and Capital Improvements Fund has an approved operating budget for 2003 of $8,785,100. The fund includes expenditures for utility billing, operations, distribution, and capital improvement projects. Primary expenses include water purchases (SWP and Vallejo), salaries and benefits, debt payments, and maintenance and operations. The City's anticipated revenue for 2003 is $8,634,300. Main revenue sources include water sales, interest earnings, and meter installation fees. As of June 2002, the City's Water Operation and Capital Improvement Fund's unreserved cash balance was $9,744,000.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating American Canyon's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[69] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of American Canyon's sphere of influence will be included as part of another service review currently in progress.

Infrastructure Needs or Deficiencies:

1. Through its contractual agreements, the City of American Canyon imports an adequate supply of water to meet existing and future system demands under normal conditions within the timeframe of this study.

2. The City of American Canyon should continue to pursue opportunities to increase its available water supply and continue to expand its water conservation efforts. These actions will help to ensure an adequate water supply during periods of below normal and dry year conditions.

[69] LAFCO Resolution No. 03-34, adopted December 11, 2003.

3. The City of American Canyon's water supply is dependent on contracted entitlements with the Napa County Flood Control and Water Conservation District and the City of Vallejo. These contractual entitlements are essential to American Canyon's ability to deliver potable water to its customers.

4. To account for the realities of water entitlements, the City of American Canyon should continue to objectively differentiate between entitlements and actual deliveries in their water supply analysis. This is especially important to ensure an adequate supply of water during extended drought periods when deliveries are restricted.

5. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of SWP deliveries using historical precipitation rates along with projected land and water use demands through 2021, including delivery estimates during drought periods. This report is a valuable tool for all SWP contractors and should be incorporated into American Canyon's water supply planning efforts.

6. The City of American Canyon has made reasonable efforts to secure additional water supplies to meet existing and projected potable water demands within its service area. This demonstrates a continued effort by American Canyon to address system needs and deficiencies in a timely manner.

   Recent examples include American Canyon's 1996 potable water supply agreement with the City of Vallejo and its participation in Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with the Kern County Water Agency. In addition, American Canyon has continually benefited from augmenting its contracted water supply with carryover and interruptible water supplies generated by the Department of Water Resources.

7. The City of American Canyon has made reasonable efforts to maintain adequate reserves for drought protection.

   American Canyon's 1996 agreement with the City of Vallejo enables the City to increase its annual draw of potable water entitlements from Vallejo over designated time periods through 2021. In addition, American Canyon is in the process of negotiating a long-term water supply agreement with the City of St. Helena to purchase an additional 1,000 acre-feet of entitlement from the State Water Project.

8. The City of American Canyon requires improvements to its water treatment plant to independently meet maximum day water demands.

American Canyon's maximum day water demand in 2002 was 4.75 million gallons, while its treatment plant's daily capacity is 2.6 million gallons. In 2003, American Canyon is scheduled to begin the first of two capital improvement projects aimed at expanding capacity at its water treatment plant. Collectively, these projects will increase the plant's daily treatment capacity to 8.6 million gallons. These planned improvements will enable American Canyon to independently meet projected maximum day water demands of 8.36 million gallons in 2006 without severely taxing stored reserves.

9. The City of American Canyon requires improvements to its treated water storage facilities to independently meet future maximum day water demands and ensure adequate reserves during an emergency or interruption in service.

   American Canyon's maximum day water demand in 2002 was 4.75 million gallons, while its total treated water storage capacity is 4.7 million gallons. In 2003, American Canyon is scheduled to begin construction on a new 2.0 million gallon treated water storage tank to serve the La Vigne subdivision. American Canyon also plans to construct two 2.6 million gallon treated water storage tanks on the hills northeast of the intersection Highway 29 and American Canyon Road within the next five years. Collectively, these projects will increase American Canyon's available treated water storage capacity to 11.9 million gallons and provide greater balance to the City's distribution system. These planned improvements will enable American Canyon to independently meet its projected required storage capacity of 9.1 million gallons in 2006.

10. The City of American Canyon is scheduled to begin providing reclaimed water service to existing potable water customers by the end of 2003. The use of reclaimed water within American Canyon's service area is an important component in its water conservation efforts and should alleviate future potable water demands, especially among agricultural and irrigation customers.

    American Canyon's reclamation program is planned to be implemented in two phases and will consist of tertiary recycled water: treated and distributed by its new wastewater treatment plant. Aggregately, American Canyon anticipates implementation of both phases resulting in the annual savings of over 1,000 acre-feet of potable water; potable water conserved by reclamation will then be available and added to the City's potable water supply.

11. Reclamation is a beneficial and efficient use of existing water resources and will provide credence to the City of American Canyon's water conservation efforts.

12. Evaluation of the City of American Canyon's reclamation program and its actual impact on potable water demands should be included in future studies.

Growth and Population Projections:

1. The City of American Canyon evaluates its water service capacities using reasonable demand projections detailed in its *Water System Master Plan (2003)*.

2. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by the City of American Canyon's water service system. The population served by American Canyon's water system based on this calculation method is 12,283.

Financing Constraints and Opportunities:

1. The City of American Canyon is scheduled to begin providing reclaimed water service to existing potable water customers by the end of 2003. Reclamation will offer agricultural, industrial, and irrigation customers a suitable water source at an alternative rate, while reducing the draw upon the overall supply of potable water.

2. The City of American Canyon's contracted water supply is subject to rate changes imposed by the supplier (exporter), resulting in potential increases in costs to the City. Similarly, American Canyon's ability to supplement its contracted water supply in dry years through water supply programs facilitated by the Department of Water Resources and/or open market purchases are also liable to increase costs. Typically, these increases in operation costs are passed on directly to the customer through rate increases. The extent of these costs and impact on the rates paid by customers, however, remain difficult to measure due to the uncertainty involving water markets.

Cost Avoidance Opportunities:

1. Through outside agreements, the City of American Canyon has successfully mitigated costs associated with its water service operations.

   An example includes American Canyon's 1998 agreement with the City of Calistoga. This agreement helped American Canyon share in the cost associated with connecting to the City of Vallejo's water distribution system, while maintaining its overall objective of securing additional water supplies. A similar agreement was reached with the Town of Yountville in 2000.

2. The City of American Canyon is a member of Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Watrtac." This group provides NCFCWCD with a consensus among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory group provides American Canyon the opportunity to share costs with other participating agencies on projects of mutual interest and facilitates the exchange of service information.

3. The City of American Canyon is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." The study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050. American Canyon will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. The City of American Canyon could minimize future rate increases by lessening the demand for potable water within its service area by investing in infrastructure improvements that reduce its dependency on potable water withdraws from the City of Vallejo.

   American Canyon is currently charged $2.38 per hundred cubic foot (748 gallons) by Vallejo. Comparatively, American Canyon is charged $19.86 per acre-foot (325,900 gallons) by the Department of Water Resource (note: this charge does not take into account cost of treating SWP water or annual transportation charges).

2. The City of American Canyon's water rates were last increased in 2000 and are competitive with the rates offered by the other four cities in Napa County.

Opportunities for Shared Facilities:

1. As a subcontractor to Napa County Flood Control and Water Conservation District, the City of American Canyon is responsible for assuming its proportional costs for the delivery of water drawn from the State Water Project. Subcontractors are also responsible for paying a transportation charge that covers the cost associated with the infrastructure and facilities needed to capture and convey water to Napa County. These shared facilities include the North Bay Aqueduct and the Napa Turnout Reservoir. Costs relating to future upgrades and improvements to this conveyance system will be shared among each subcontractor as well as the Solano County Water Agency and its subcontractors.

   Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District (NCFCWD). NCFCWCD is currently working with the Solano County Water Agency to implement improvements to the North Bay Aqueduct to meet both agencies contracted entitlement amount. A key factor to this planned improvement is the completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from NCFCWCD's agreement with the Kern County Water Agency.

Government Structure Options:

1. The City of American Canyon is the only public agency currently providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of American Canyon: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. The City of American Canyon, the County of Napa, and LAFCO should establish a policy that reconciles the provisions of Government Code §56133, which restricts the extension of water service outside an agency's adopted boundaries, with both the water service area inherited by the City at the time of incorporation and the City's responsibility to delivery State Water Project water in the south county pursuant to its contract with the Napa County Flood Control & Water Conservation District.

Evaluation of Management Efficiencies:

1. Each year, the City of American Canyon provides a summary of past and projected revenues and expenditures stemming from its water service operations as part of its annual budget. The budget is adopted following a noticed finance committee session in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected and appointed officials, the budget process provides a clear directive towards staff with respect to prioritizing city resources.

2. In 2003, the City of American Canyon prepared an update to its water system master plan. The plan recommended approximately 18 million dollars in short and long-term capital improvement projects aimed at maintaining and improving American Canyon's water system through buildout; adoption of the plan is scheduled for consideration by the City Council in August. This demonstrates a reasonable effort on behalf of American Canyon's management staff to address and update water quality and services objectives in a timely and efficient manner.

3. Over the past two years, the City of American Canyon has had two public works directors. The most recent director left American Canyon in July, necessitating the appointment of a third director within this time period. Rather than appoint a permanent director, American Canyon has entered into a one-year contract with Coastland Civil Engineering, Inc., a Santa Rosa based consulting firm to perform the duties of public works director. Turnover within this position creates continuity challenges among staff and impacts the ability of management to gain sustained expertise regarding local service conditions.

4. The City of American Canyon has sufficient capital reserves to finance necessary upgrades and improvements to its water system.

Local Accountability and Governance:

1. The City of American Canyon's City Council meetings are conducted twice a month and are open to the public. Public inquires involving water service operations can be addressed to the Council at this time. Regularly scheduled council meetings provide an opportunity for American Canyon's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

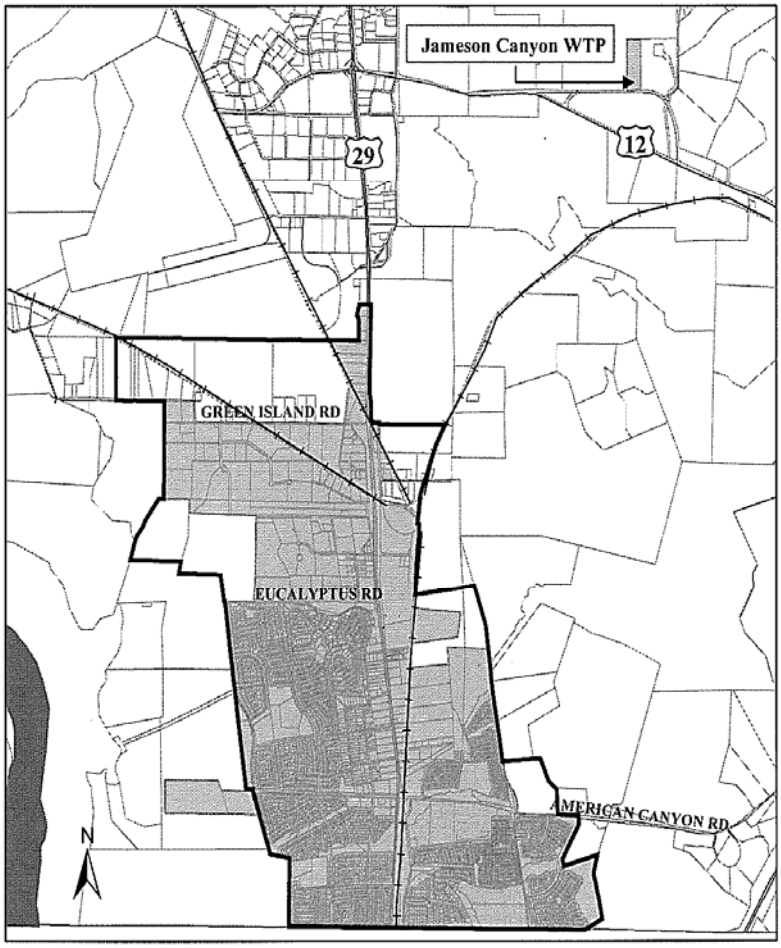
2. The City of American Canyon makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

   These efforts include conducting public workshops, mailing newsletters, news inserts with billing statements, and posting its annual "water quality report" on American Canyon's website. Customers can also visit or call American Canyon's utility billing division during regular business hours to discuss questions regarding their monthly water bill. Designated public works employees are also on call 24 hours a day to respond to water service related emergencies.

3. The City of American Canyon provides water service to approximately 157 connections outside of its jurisdictional boundary. These connections are located throughout American Canyon's water service area which encompasses lands north to Soscol Creek, south and east to Solano County, and west to the Napa River. American Canyon has made reasonable efforts to include current and projected water demands for these outside lands as part of its water supply analysis.

4. The City of American Canyon's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

City of American Canyon



LEGEND

City of American Canyon

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

Note. sphere last updated in Febuary 2004

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

CITY OF CALISTOGA

OVERVIEW

The City of Calistoga was incorporated in 1886 following the development of the Calistoga Hot Springs Resort, a luxury hotel and resort founded by Samuel Brannan. The Calistoga Hot Springs was intended to rival the celebrated Saratoga Resort in New York and to provide Calistoga with a viable commerce foundation based on tourism. The subsequent development of the Napa Valley Railroad, which transported residents and visitors from Napa City to Calistoga, aided in the development of the City, and by the early 1900s there was a need for a potable water system.

The development of Calistoga's first potable water system emerged in the first half of the 20th Century, and consisted of water drawn from Stone Pond in nearby Feige Canyon. The City's water system was later amended following the construction of Kimball Dam in 1939. The construction of Kimball Dam allowed the City to begin diverting and storing water from Kimball Creek, a tributary of the Napa River. The construction of Kimball Dam facilitated the creation of Kimball Reservoir, which served as Calistoga's primary water source until growth demands in the 1960s prompted the City to develop a well site in Feige Canyon. Developed between 1965 and 1973, the Feige Canyon well site involved the construction of four wells. Two of these wells were later abandoned due to limited production and high levels of iron. Over the next several years, the two remaining Feige Canyon wells produced an annual average of 100 acre-feet of water. The wells proved particularly valuable to the City during the 1976-1977 drought when water supplies at Kimball Reservoir were diminished. In the 1990s, however, production of the Feige Canyon wells began to taper. The wells were also producing groundwater that had instances of high levels of arsenic, antimony, and mercury. The wells were eventually taken off-line in 1998 following the detection of antimony that exceeded regulatory standards imposed by the California Department of Health Services (DHS).

Before their deterioration, the Feige Canyon wells provided Calistoga with a reliable source of water to supplement production at Kimball Reservoir. However, even with the Feige Canyon wells in operation, water demands in the City were outpacing supply. In the late 1970s, Calistoga's limited water supplies forced the City to issue a moratorium on building permits. In 1982, to alleviate system demands on Kimball Reservoir and the Feige Canyon wells, the City reached a water supply agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). The original agreement provided the City with an annual entitlement of water drawn from the State Water Project (SWP) through 2035, and established a maximum annual entitlement of 500 acre-feet by 1990. The agreement was amended later that year as part of a statewide program by the Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amendment increased the City's short-term entitlement while regressing Calistoga's maximum annual entitlement to 2003 (subsequently accelerated to 1999). The amended agreement requires the City to have a water

conservation plan with the specific goal of conserving 130 acre-feet of its annual SWP entitlement by 2010.

In 1982, to gain access to its SWP entitlement, Calistoga entered into an agreement with the City of Napa. Pursuant to this agreement, Napa treats and conveys Calistoga's SWP entitlement through an interconnection between the two cities' distribution systems. In exchange, Napa is reimbursed for the capital costs associated with the construction, operation, and maintenance of the Jameson Canyon Water Treatment Plant on a proportionate level to the amount of Calistoga's maximum annual entitlement. Napa is also reimbursed for the delivery costs associated with the construction, operation, and maintenance of its distribution systems (Conn and Jameson Lines) that convey water to Calistoga. Since Napa's water sources are commingled, Calistoga's SWP entitlement is essentially turned over to Napa in exchange for an equal amount of potable water from one of Napa's three potable sources: SWP, Lake Hennessey, and Milliken Reservoir. Calistoga's distribution system is connected to Napa's distribution through its "NBA Line." Built in 1984, the NBA Line is approximately 12.3 miles long and connects to Napa's distribution system near the intersection of Silverado Trail and State Highway 128.

Although the addition of SWP water in 1982 provided Calistoga with a much-needed reprieve from increasing system demands, relief proved temporary. In the late 1980s, Calistoga's water supply attracted the attention of DHS, which regulates all public water systems in California. DHS expressed concern regarding the City's capability in meeting system demands with existing water supplies. Requests by DHS in 1992 and 1995 for Calistoga to submit a plan and timetable for the development of additional water supplies went unanswered, resulting in DHS issuing a compliance order to the City in 1996. The compliance order required Calistoga to submit a detailed evaluation of its water system. In particular, Calistoga was required to submit a plan and timetable addressing its ability to meet existing maximum demand conditions as well as demands through 2007. As a result of the compliance order, Calistoga authorized two independent evaluations of its water system. An evaluation of Calistoga's available water supply concluded that it was sufficient to meet demand under normal conditions through 2007, but was not capable of meeting current and projected demands in either below normal or dry year conditions. To address current and future system demands, Calistoga evaluated a number of options to increase its available water supply. In the end, Calistoga planned to accelerate its full SWP entitlement, purchase 500 acre-feet of additional SWP entitlement from the City of Vallejo, dredge Kimball Reservoir, and purchase water from the State Water Bank during dry years. Calistoga concluded that upon completion of these projects, its water supply would be capable of meeting current and projected system demands through 2033. These planned actions were codified by a subsequent compliance order by DHS in 1997, requiring Calistoga to complete the first three projects along with relocating and upgrading the Pope Street Pump Station within specified time periods.

Improvements to increase its water supply were initiated in 1998 following Calistoga's successful negotiation to accelerate its SWP entitlement to its maximum amount of 500 acre-feet. That same year, Calistoga also increased its water supply following an agreement with the City of American Canyon. This agreement involved a three-way exchange between Calistoga, American Canyon, and Vallejo. American Canyon agreed to permanently transfer 500 acre-feet of annual SWP entitlement to Calistoga, with 25 acre-feet being made available beginning in 2000 and in each year thereafter until the total is reached in 2019. In exchange, Calistoga agreed to assume all responsibilities of entitlement and compensate American Canyon $500,000. Calistoga also agreed 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 replacement water from Vallejo under the terms and conditions of an earlier agreement made between those agencies.[70]

Calistoga's water supply was increased again in 2000 following a water transfer agreement between NCFCWCD and the Kern County Water Agency (KCWA). The agreement was negotiated by NCFCWCD on behalf of the five cities in Napa County and established the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Costs are proportionately shared by each city according to the amount allocated. Calistoga's share of this entitlement transfer is 925 acre-feet and is relied upon to meet system demands during cutbacks in SWP deliveries.

Also in 2000, Calistoga issued its first comprehensive water facilities plan. The plan included a detailed review of the City's existing water system and recommended several capital improvement projects to address current and future system deficiencies. Most notably, the plan recommended that Calistoga increase its local water supply by dredging Kimball Reservoir in order to recover storage capacity lost to sedimentation. The facilities plan also recommended that Calistoga expand its treated water storage capacity by constructing a new storage tank to ensure adequate reserves. In all, the facilities plan recommended 16 capital improvement projects at an estimated cost of $13.1 million (anticipated costs were subsequently reduced to $9.8 million).

In 2001, Calistoga hired an outside consultant to conduct a water rate study. The study concluded that the City needed to substantially increase its water rates to meet operational and capital improvement costs. This conclusion was based primarily on four factors: the last rate increase occurred in December 1994; rate increases adopted in 1994 for implementation in 1995 and 1996 were never imposed; the cost to cover improvements to the water system; and the cost to cover the purchase of additional water supplies. To this end, the study recommended that the City increase its overall water rates over the next five years by 6%, 8%, 10%, 10%, and 10%. The recommended rate change was adopted by Calistoga's City Council in April 2002 and included adjustments to the water rate structure that were intended to improve rate equity between customers.

[70] In 2000, following a request by Calistoga, DHS has amended its compliance order allowing the City additional time to complete the last two projects. As a result, Calistoga was required to complete the relocation and upgrade to the Pope Street Pumping Station by June 1, 2002 (subsequently amended). Additionally, Calistoga is required to complete its dredging of Kimball Reservoir by January 1, 2005.

The adopted rate change implemented a six-tiered volume rate schedule for single-family residences. The six-tiered rate scheduled raised volume rates for single-family residential customers and was designed to encourage water conservation. The adopted rate change also substantially increased the base fee for water connections from $6,812 to $26,350 (based on one acre-foot use). However, in response to the objections of residential customers, the City Council subsequently amended these rate changes and elected to provide credits toward residential water bills from the General Fund. The amended rate schedule lowered the single-family residential tier rates and increased volume rate reductions for low and very low-income residents.

In 2002, Calistoga commenced its capital improvement program with a major pipeline replacement for the Feige Canyon Storage Tank. Other planned projects include constructing a new 1.5 million gallon storage tank, numerous water main replacements, dredging Kimball Reservoir, and constructing an inflatable dam at Kimball Dam to increase storage capacity. Calistoga has obtained approval of a grant and loan funding package from the Untied States Department of Agriculture (USDA) to finance the first group of these capital improvement projects. The City is currently pursuing financing options with USDA to assist in the costs for the new water tank project.

In addition to providing potable water service, Calistoga operates a reclaimed water program. The intent of Calistoga's reclamation program is to reduce overall discharge of treated wastewater to the Napa River and to lessen storage requirements when discharge is prohibited by the San Francisco Bay Regional Water Quality Control Board; discharge is currently prohibited between May and October. Calistoga's reclamation services consist of tertiary treated wastewater that provides for unrestricted use with the exception of human and/or animal consumption. Due to high levels of boron in the treated water (a result of processed groundwater), however, Calistoga's reclamation projects are limited to pasture irrigation and turf landscaping. As of 2000, the City provided reclaimed water service to approximately 14 sites, consisting of 131 acres. Recipients of the City's reclaimed water are not charged fees for service, but are required to install a meter on the reclaimed water line and a backflow prevention device on the potable water line before connection.

Aside from its water service operations, Calistoga is the only municipality in Napa County with an ordinance regulating the issuance of cold-water wells within its incorporated territory. The ordinance was adopted by Calistoga's City Council in 1998 and is intended to protect and preserve groundwater basins underlying the City. The ordinance prohibits new wells for commercial or industrial use. As part of the permit process, an applicant is required to submit a preliminary report to the City's Public Works Department that includes an estimate of projected water use and current and future land use plans for the affected territory.[71]

[71] Agriculture and landscape uses are exempt. Since 1998, Calistoga has received 17 cold-water applications, 9 of which have been approved.

GOVERNANCE

Calistoga was incorporated as a general-law city in 1886 and is governed by a four-member city council and a directly elected mayor. Elections are conducted by general vote; the mayor serves a two-year term while the four city councilmembers serve staggered four-year terms. A city manager is appointed to oversee and implement policies on behalf of Calistoga's governing body and to provide oversight of the City's five departments: fire services, police services, public works, planning and building services, and administrative services. In 1990, the City Council adopted a general plan that outlines land use and development policies for the City through 2010. The City is currently in the process of updating the 1990 General Plan. Calistoga's City Council meetings are conducted on the first and third Tuesday of each month at the City's Community Center. Meetings are open to the public.

OPERATIONS

Calistoga's water system is maintained and operated by the City's Public Works Department, Water System Operations. A public works director is appointed by the city manager to oversee and manage the City's water system operations unit. Designated staff is on call 24 hours, 7 days a week to respond to any reported emergencies. The water system operations unit is comprised of three divisions: administration, treatment, and maintenance. As of January 2003, the water system operations unit consisted of 11 employees.

ADOPTED BOUNDARIES

Calistoga's incorporated boundary is comprised of one contiguous area consisting of 1,670 acres. Calistoga's adopted sphere of influence is conterminous with the City's incorporated boundary. The City's water service area extends outside its incorporated boundary to include several properties north of the City along Highway 29 and west along Highway 128. Land use designations for Calistoga are defined in the City's General Plan.

Calistoga – Adopted Boundaries	
Incorporated Boundary:	1,670 acres *****
Sphere of Influence Boundary:	1,670 acres *****

* Figures are approximations calculated using information generated by LAFCO and the County of Napa's geographic information systems.

WATER SUPPLY

Calistoga's water supply is drawn from two sources: Kimball Reservoir and the SWP. Water provided by Kimball Reservoir is supplied by Kimball Creek, a tributary of the Napa River. Calistoga's water rights to Kimball Reservoir are secured through two licenses from the State Water Resources Control Board, Division of Water Rights. These two licenses authorize the City 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.[72] In addition, due to its size, Kimball Reservoir's estimated storage capacity is less than its actual output. 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.[73] 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 NCFCWCD. 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. The agreement was amended later that year as part of a statewide program by the Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amendment increased Calistoga's short-term entitlement while regressing its maximum annual entitlement to 2003.[74] The amended agreement requires the City to have a water conservation plan with the specific goal of conserving 130 acre-feet of its annual SWP entitlement by 2010.

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 NCFCWCD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified terms and conditions for NCFCWCD 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.

[72] A 1991 capacity survey estimated that between 1954-1991, Kimball Reservoir experienced a storage loss of 2.6 acre-feet per year due to sedimentation.

[73] Calistoga defines below-normal as its "firm yield," which is the amount that can be expected to occur 90 percent of the time.

[74] The receipt of this entitlement was later accelerated to allow Calistoga to receive its full 500 acre-feet by 1999.

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.[75]

Calistoga – Available 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.

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.

Calistoga – 2001-2002 Water Demand	
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 **

[75] This limitation is caused by the current configuration of the pump stations needed to pressurize the transmission line.

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions (§64562).

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for Calistoga were identified in the City's *Water Facilities Plan (2000)*. The plan projected water demands for Calistoga through 2036 using a per capita method based on the maximum average water demand between 1991 to 1998 and adjusted using an annual growth rate of 1.5%. Demands were calculated under three hydrological conditions: normal year, below-normal year, and dry year.

Calistoga – Projected Water Demands (acre-feet)			
Year	**Normal Year**	**Below-Normal Year***	**Dry Year****
2003	1,033	930	782
2004	1,042	938	788
2005	1,053	948	796
2006	1,065	958	805
2007	1,076	969	813
2008	1,088	980	822

* Based on a 10% reduction in demand through a voluntary conservation program.

** Based on a 20% reduction in demand through a mandatory conservation program.

WATER TREATMENT FACILITIES

Calistoga provides treatment of raw water generated from Kimball Reservoir at the Kimball Water Treatment Plant (WTP). Constructed in 1990, the Kimball WTP receives raw water from Kimball Reservoir through an inlet valve. The treatment process begins as raw water passes through an inline mixer that injects chlorine (disinfectant) and polymer (coagulant). Raw water is detained in a settling tank to facilitate the sedimentation of solids in the water. Solids are removed from the treatment process through a separate booster pump. Water is cycled through two adjoining filter banks completing the filtration of unwanted particles from the water. Following the filtration process, water is conveyed into a 100,000 gallon clearwell tank. The clearwell tank completes the disinfection process by allowing the water to complete its necessary contact time with the chlorine. Finished water remains in the clearwell tank until storage levels within the Feige Canyon Storage Tank require recharge. The Kimball WTP has a

treatment capacity of 833 gallons per minute, resulting in a daily treatment capacity of 1.2 million gallons.[76]

Kimball Water Treatment Plant	
Water Source:	Kimball Reservoir
Treatment Capacity:	833 gallons per minute; or 1.2 million gallons per day
Clearwell Storage Capacity:	100,000 gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

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, four, six, eight, ten, and twelve inch water lines that serve the majority of Calistoga as well as 72 outside service connections. Calistoga's distribution system overlays two pressure zones: Zone 1 and Zone 2. Zone 1 serves as Calistoga's primary pressure zone with 1,424 service connections and is served (recharge and system pressure) by the 1.0 million gallon Feige Canyon Tank. Zone 2 includes 16 residential service connections within the High Street area and is served by the 24,000 gallon High Street Tank.

Calistoga's distribution system responds to water levels at the Feige Canyon Storage Tank. When water levels within Feige Canyon Storage Tank fall below a designated level, pumps are activated at either Kimball WTP (Kimball Reservoir) or Dunaweal Pumping Plant (Napa) to provide recharge to the distribution system. Water generated from Kimball WTP is delivered to the City's distribution system by a transmission line that connects to the Feige Canyon Storage Tank. Water generated 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 that underlays easements along the Silverado Trail and Deer Park Road as well as a right-of-way belonging to Southern Pacific Railroad Company. The transmission line includes two pump stations that help maintain adequate pressure within the system. The initial pump station, the Pope Street Pump Station, is located near the crossing of Silverado Trail and Pope Street Bridge. This station is typically used between October and April when Napa's Jameson WTP is operating in place of the closer Hennessey WTP. The second pump station, the Dunaweal Pump Station, is located next to Calistoga's wastewater treatment plant and continually operates when the City receives water from Napa.

Calistoga – Distribution Storage Capacity	
Feige Canyon Storage Tank:	1.0 million gallons
High Street Storage Tank:	24,000 gallons
TOTAL	**1.024 million gallons ***

[76] Water production is reduced by approximately 50% during the winter months when the City is restricted from diverting no more than 0.48 million gallons per day by the State Water Resources Control Board.

***** Total does not include storage capacity at Kimball WTP's clearwell tank (100,000 gallons).

RATE SCHEDULE

Calistoga's water customers are charged two bimonthly fees for water service: a service and a usage charge.[77] The service charge is comprised of a base demand charge determined by meter size that is multiplied by a demand factor for each type of customer class. Calistoga's customer class is divided into seven categories: single-family residential; multi-family residential; mobile home park; commercial-general; commercial-restaurant; commercial-transient; and industrial.

The usage charge is divided between single-family residences and non-single family residences. Single-family residences are charged based on the amount of water delivered. This charge is determined using a six-tiered rate schedule and measured in units of a hundred cubic feet. Non single-family residences are charged a flat usage fee that is measured in units of a hundred cubic feet. These customers are responsible for a peaking charge if they exceed a designated peak service unit demand that is based on meter size. Customers exceeding their designated peak service unit demand are billed a peak base volume charge and a variable service charge. This service charge represents the City's cost for purchasing water from the City of Napa to meet peak demands. In addition, customers outside the City are subject to an additional 15% charge on water usage fees.

Customers are also charged a $26,350 water connection fee for new service or for the expanded use of an existing connection. The connection fee is based on an acre-foot of water consumption per year and is adjusted according to projected water use for each customer type.

Calistoga – Bimonthly Service Charge *	**Rate**
Monthly Service Fee **	
5/8 or 3/4-inch:	$13.18
1-inch meter size:	$32.95
1.5-inch meter size:	$65.90
2-inch meter size:	$105.44
3-inch meter size:	$197.70
4-inch meter size:	$329.50
6-inch meter size:	$659.00
Demand Factor **	
Single-family residential:	1.00
Multi-family residential:	1.58
Mobile home park:	2.36
Commercial-general:	1.16

[77] Commercial customers are billed monthly.

Commercial-restaurant:	2.39
Commercial-transient:	2.57
Commercial-industrial:	5.35

* Represent rates as of January 1, 2003. Rates are scheduled to increase over the next three years by 8%, 10%, and 10%.

** The monthly service charge is calculated by multiplying the meter rate with the corresponding demand factor.

Calistoga – Bimonthly Water Usage Charge *	**Rate**
Single-Family Residence Water Usage Fee	
0-8 hcf:	$2.52
9-14 hcf:	$3.02
15-22 hcf:	$3.36
23-30 hcf:	$3.36
31-50 hcf:	$3.36
51 or more hcf:	$4.46
Non Single-Family Residence Water Usage Fee	
Base Rate:	$3.36 (per hcf)
Peak Charge - Non-Single Family Residences **	
5/8 or 3/4-inch meter size:	35 hcf
1-inch meter size:	88 hcf
1.5-inch meter size:	175 hcf
2-inch meter size:	280 hcf
3-inch meter size:	525 hcf
4-inch meter size:	875 hcf
6-inch meter size:	1,750 hcf
Peak Base Volume Charge	$4.41 (per hcf)

* Represent rates as of January 1, 2003. Rates are scheduled to increase over the next three years by 8%, 10%, and 10% .

** Peak charges are applied to non-single-family residences and are calculated by adding the peak base volume charge with a service charge for importing water from Napa.

FINANCIAL

Calistoga's Water Operation and Capital Improvements Fund has an approved operating budget for 2002-2003 of $8,777,900. Primary expenses include financing capital improvement projects, maintenance and operation costs, and repayment of existing debts. The City's anticipated revenue for 2002-2003 is $9,341,998. Revenue sources include water service charges, connection fees, and state and federal grants. The City's 2002-2003 budgets projects an ending working capital budget of $1,323,921.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Calistoga's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[78] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Calistoga's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its local and imported water supply, the City of Calistoga has an adequate supply of water to meet existing and projected water demands under normal conditions within the timeframe of this study.

2. The City of Calistoga should continue to pursue opportunities to increase its available water supply and continue to expand its water conservation efforts. These actions will help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. As a subcontractor of Napa County Flood Control and Water Conservation District, the City of Calistoga receives an annual entitlement of water drawn from the State Water Project. To account for the realities of water entitlements, Calistoga should continue to objectively differentiate between entitlements and actual deliveries in their water supply analysis. This is especially important to ensure an adequate supply of water during extended drought periods when deliveries are restricted.

4. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of SWP deliveries using historical precipitation rates along with projected land and water use demands through 2021, including delivery estimates during drought periods. This report is a valuable tool for SWP contractors and should be incorporated into Calistoga's water supply planning efforts.

5. The City of Calistoga has made reasonable efforts to secure additional water supplies to meet existing and projected water demands within its service area. This demonstrates a continued effort by Calistoga to address system needs and deficiencies in a timely manner.

   Recent examples include Calistoga's 1998 water supply agreement with the City of American Canyon and its participation in Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with the Kern County Water Agency.

[78] LAFCO Resolution No. 03-27, adopted October 11, 2003.

6. The City of Calistoga requires improvements to its water treatment plant to independently meet maximum day water demands within its service area. In absence of expanding its treatment plant capacity, Calistoga will continue to rely on imported potable water deliveries to help meet maximum day water demands.

   Calistoga's maximum day water demand in 2002 was 1.34 million gallons, while its treatment plant's daily capacity is 1.2 million gallons. Pursuant to its adopted operating policies, Calistoga does not intend to upgrade its water treatment plant to independently meet maximum day water demands, and will continue to rely on imported potable supplies during peak demand periods.

7. The City of Calistoga requires improvements to its treated water storage facilities to independently meet maximum day water demands and ensure adequate reserves during an emergency or interruption in service.

   Calistoga's maximum day water demand in 2002 was 1.34 million gallons, while its total treated water storage capacity is 1.124 million gallons. In 2005, Calistoga is scheduled to begin construction on a new 1.5 million gallon underground treated water storage tank on Mount Washington, a hill located in the northwest section of the City. Once completed, this project will provide greater balance to Calistoga's distribution system and enable the City to independently meet its projected required storage capacity of 2.451 million gallons in 2010.

8. The City of Calistoga requires improvements to its transmission system connecting its distribution system to the City of Napa to utilize its full amount of contracted entitlements drawn from the State Water Project.

   Due to the current capacity and configuration of the pumps needed to pressurize its NBA transmission line, Calistoga cannot take delivery exceeding 0.9 million gallons per day, resulting in an annual restriction of 1,008 acre-feet. Calistoga is currently working with the City of Napa to make improvements to Napa's Dwyer Road Pump Station. Once completed, these improvements will increase delivery to Calistoga and eliminate the need for the City to maintain its Pope Street Pump Station. Construction is scheduled to begin in 2005.

9. The City of Calistoga operates the Dunaweal Wastewater Treatment Plant, which provides tertiary-level treatment to wastewater for reclamation uses. Due to high levels of boron residing in the treated wastewater (impact of processing groundwater), Calistoga's reclamation program is restricted to pasture irrigation and turf landscaping. Consequently, Calistoga's ability to alleviate future demands on its potable water supply through reclamation appears limited.

10. The City of Calistoga is currently under a compliance order by the Department of Health Services to complete specified improvements to its water system as part of its domestic water supply permit. These improvements include commencing a maintenance dredging program at Kimball Reservoir by 2004, and working with the City of Napa to refurbish the Dwyer Street Pump Station by 2005. Future studies should evaluate Calistoga's progress with respect to implementing these needed improvements.

Growth and Population Projections:

1. The City of Calistoga evaluates its water service capacities using reasonable demand projections detailed in its *Water Facilities Plan (2000).*

2. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by the City of Calistoga's water service system. The population served by Calistoga's water system based on this calculation method is 4,752.

Financing Constraints and Opportunities:

1. The City of Calistoga has been successful in supplementing its capital reserves with outside financing to cover the costs of implementing needed capital improvements.

   Calistoga was recently awarded a 1.0 million dollar grant and 2.5 million dollar loan from the United States Department of Agricultural. This funding is for planned improvements to Calistoga's water facilities, including increasing treatment capacity at Kimball WTP, replacing an inflatable dam at Kimball Reservoir, and relocating Kimball's main transmission line.

Cost Avoidance Opportunities:

1. The City of Calistoga is a member of Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Watrtac." This group provides NCFCWCD with a consensus among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory group provides Calistoga the opportunity to share costs with other participating agencies on projects of mutual interest and facilitates the exchange of service information.

2. The City of Calistoga is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." This study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative

water supply projects aimed at meeting countywide demands through 2050. Calistoga will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. In 2002, the City of Calistoga's City Council adopted its first water rate increase since 1994. The rate increase is spread out over a five-year time period and is intended to meet increased operational costs and to pay for needed capital improvement projects; surplus revenue generated from water rates is applied to a "working capital" account which funds water system improvement projects. The tiered increase in Calistoga's water rates over the next several years is a fair and equitable approach to passing increases in cost to the customer while maintaining the solvency of its water system operations.

2. Comparatively, the City of Calistoga's water rates are the highest among the five cities in Napa County. Calistoga should continue its efforts to educate its constituents with respect to the relationship between operational cost, infrastructure constraints, and water rates.

Opportunities for Shared Facilities:

1. As a subcontractor to Napa County Flood Control and Water Conservation District, the City of Calistoga is responsible for assuming its proportional costs for the delivery of water drawn from the State Water Project. Subcontractors are also responsible for paying a transportation charge that covers the cost associated with the infrastructure and facilities needed to capture and convey water to Napa County. These shared facilities include the North Bay Aqueduct and the Napa Turnout Reservoir. Costs relating to future upgrades and improvements to this conveyance system will be shared among each subcontractor as well as the Solano County Water Agency and its subcontractors.

   Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District (NCFCWD). NCFCWCD is currently working with the Solano County Water Agency to implement improvements to the North Bay Aqueduct to meet both agencies contracted entitlement amount. A key factor to this planned improvement is the completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from NCFCWCD's agreement with the Kern County Water Agency.

2. The City of Calistoga currently shares costs with the City of Napa to treat and deliver its allotment of water entitlements drawn from the State Water Project. This relationship provides the mechanism for both agencies to share cost with respect to future system improvements affecting each agency's water distribution systems.

3. The City of Calistoga may have an opportunity to share costs and facilities with the City of St. Helena relating to its need to improve the conveyance system that connects its distribution system to the City of Napa. St. Helena recently purchased 1,000 acre-feet in SWP entitlements as part of Napa County Flood Control and Water Conservation District's water transfer agreement with Kern County Water Agency. However, St. Helena does not have the infrastructure needed to convey this entitlement to its distribution system. Accordingly, these two Upper-Valley cities may benefit from a collaborative project that increases delivery capacity of Calistoga's conveyance system while providing St. Helena access to its SWP entitlements.

Government Structure Options:

1. The City of Calistoga is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of Calistoga: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. There has not been a change in the City of Calistoga's organization since 1984 and its sphere of influence remains conterminous with its jurisdictional boundary.

Evaluation of Management Efficiencies:

1. Each year, the City of Calistoga provides a summary of past and projected revenues and expenditures stemming from its water service operations as part of its annual budget. The budget is adopted following public hearings in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected and appointed officials, the budget process provides a clear directive towards staff with respect to prioritizing city resources.

2. In 2000, the City of Calistoga prepared its first comprehensive water facilities plan. The plan recommended approximately 13 million dollars in capital improvement projects to address existing and future water system requirements through 2005. The capital improvement program was adopted by Calistoga's City Council and demonstrates a reasonable effort on behalf of management to address and update water quality and service objectives in a timely and efficient manner.

3. The City of Calistoga regulates the issuance of water connections in accordance with procedures specified in its Resource Management System. This system requires Calistoga's Public Works Department to provide the City's Planning and Building Department on a quarterly basis with a written report identifying current water use by customer class as well as the amount of available water. Planning and Building uses this information in determining whether to approve a new water connection with the caveat that the allocation of new connections remains 60/40 in favor of residential projects. This system facilitates communication between different branches of city services and works to ensure that the extension of water service to new development will not adversely affect the service conditions of existing customers.

4. Through its recently adopted water rate increase that will continue to increase rates each year through 2006, the City of Calistoga is developing adequate capital reserves to finance necessary upgrades and improvements to its water system.

Local Accountability and Governance:

1. The City of Calistoga City Council meetings are conducted twice a month and are open to the public. Public inquiries involving water service operations can be addressed to the Council at this time. Regularly scheduled council meetings provide an opportunity for Calistoga's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The City of Calistoga makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

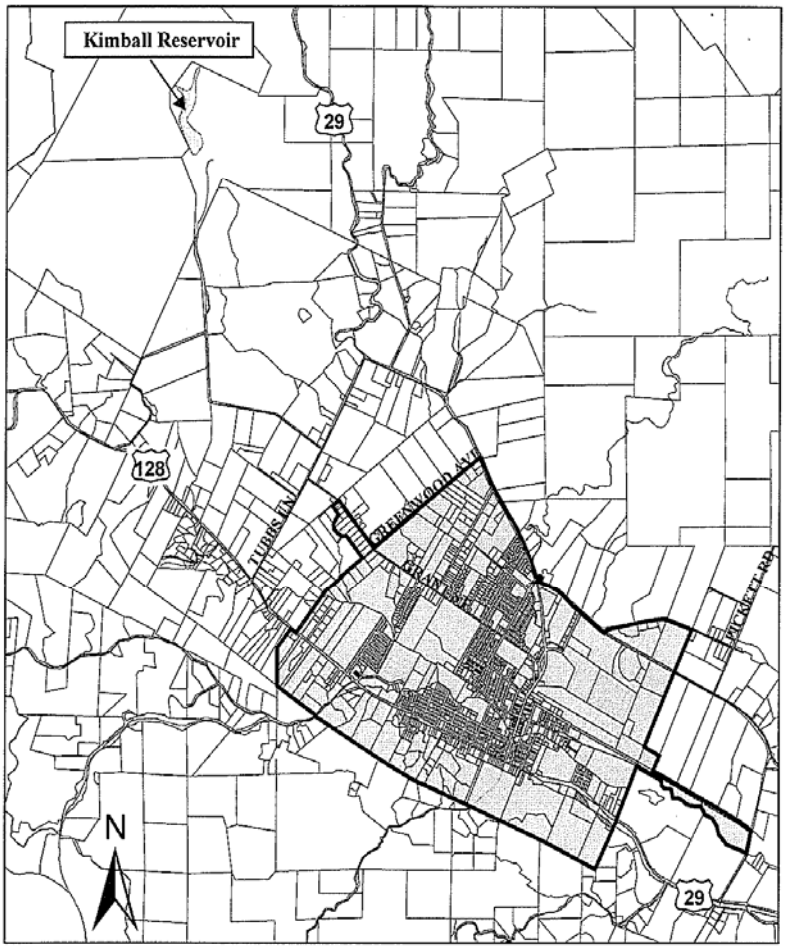
   These efforts include publishing a quarterly newsletter that typically includes information relating to its water service operations, including personnel news, capital improvement projects, studies, and water rates. Calistoga also provides news inserts with billing statements and utilizes its website to provide visitors with current information involving water service, including conservation opportunities. Customers can visit or call Calistoga's water division during regular business hours to discuss questions involving their water bill or service conditions. Designated public works employees are also on call 24 hours a day to respond to water service related emergencies.

3. The City of Calistoga currently provides water service to approximately 72 connections outside its jurisdictional boundary. Although Calistoga no longer approves new connections or expansions of existing water connections for outside users, the City should continue to include the service demands of these users in their water supply analysis.

4. The City of Calistoga is the only municipality in Napa County with an ordinance regulating the issuance of cold-water wells within its jurisdictional boundary. This demonstrates a concerted effort by Calistoga to implement proactive measures for the preservation and health of Napa County's groundwater basins.

5. The City of Calistoga's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

City of Calistoga



LEGEND

City of Calistoga

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

CITY OF NAPA

OVERVIEW

The Napa River developed as a bustling trade route in the latter part of the 19th Century. The advancement of trade along the Napa River was prompted in 1848 when a local entrepreneur, Nathan Coombs, planned southern Napa County's first community development called "Napa City." Over the next three decades, Napa City's population surged as its wharf near Third Street became the focal point of commerce in Napa Valley. Following the success of the Napa River as a trade route, Napa City's population expanded from 150 in 1850 to 3,500 by 1880. In 1883, to meet the needs of this growing community, Napa City's first potable water system was developed and operated by the Municipal Water Works Company. This initial system consisted of captured water from the Napa River, which was cleansed through a sand-filter and distributed through wooden and cast iron pipelines.

Following several years of growth, the community incorporated as the City of Napa in 1914. The City began offering water service in 1923 after purchasing the Municipal Water Works Company. This purchase coincided with the construction of Milliken Dam, allowing the City to begin diverting and storing water from Milliken Creek, a tributary of the Napa River. The construction of Milliken Dam and the subsequent creation of Milliken Reservoir, served as the City's single water source for the next 25 years. By the 1940s, however, subdivision development in Napa proved taxing to the City's water supply. In 1946, to assuage demands on Milliken Reservoir, the City completed construction on Conn Dam. The construction of Conn Dam allowed the City to begin diverting and storing water from Conn Creek, an up-valley tributary of the Napa River. The result was the creation of a reservoir, Lake Hennessey, which became the City's primary water source. To access water drawn from Lake Hennessey, the City built the Conn Transmission Line. Approximately 20 miles long, Conn Line connects to the City's distribution system in north Napa through two inter-ties. The 36-inch line is located along easements and right-of-ways paralleling State Highways 128 and 29; several affected properties that overlay the Conn Line receive water service through outside user agreements with the City.

Twenty years after the construction of Conn Dam, Napa reached an agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD) for an annual entitlement of water drawn from the State Water Project (SWP). The 1966 agreement provided Napa with a gradual increase in annual entitlements, with a maximum annual entitlement of 12,500 acre-feet by 1990. The agreement was amended in 1982 as part of a statewide program by the California Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amended agreement reduced the City's short-term annual entitlement, while increasing its overall annual entitlement to 18,800 acre-feet by 2021. The amended agreement requires the City to have a water conservation plan with the specific goal of conserving 1,100 acre-feet of its annual SWP

water entitlement by 2010. The City's SWP entitlement was amended again in 2000 following a water transfer agreement between NCFCWCD and Kern County Water Agency (KCWA). Negotiated on behalf of the County's five cities, the water transfer agreement specified the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Napa's share of the Kern County transfer is 1,000 acre-feet: providing the City with a maximum annual SWP entitlement of 19,800 acre-feet by 2021.

In 1968, to treat and deliver its SWP entitlement, Napa constructed its first water treatment plant: the Jameson Canyon Water Treatment Plant (WTP). Located next to the Napa Turnout Reservoir in Jameson Canyon, the Jameson Canyon WTP provides conventional treatment of water drawn from the SWP. Water treated at the Jameson Canyon WTP is conveyed to the City through the Jameson Transmission Line, which is situated along easements and right-of-ways parallel to State Highways 12 and 29. The line splits near the intersection of State Highways 29 and 221 before diverging into different ends of the City's distribution system.

Napa's water supply proved sufficient for the next 20 years, primarily due to a change in the City's growth patterns. In 1969, the City adopted its first general plan. The general plan envisioned the City becoming an urbanized center consisting of 150,000 residents by 1990. However, by the early 1970s, public support for slower growth materialized. In 1973, residents responded in favor to an advisory ballot issued by Napa's City Council limiting the City's build-out size to 75,000. In 1975, the City adopted a new general plan that projected a population of 75,000 by 2000.

By the end of the 1980s, a prolonged statewide drought taxed local water resources and limited deliveries generated from the SWP. To meet system demands between 1989-1991, Napa purchased approximately 1,700 acre-feet of raw water from Yuba County. The purchase of Yuba County water coincided with the initiation of voluntary and mandatory conservation programs to reduce system demand. The conservation programs proved successful; annual peak water demand in the City prior to the conservation programs was 14,400 acre-feet as compared to an annual peak demand of 9,800 acre-feet in 1992. A lasting remnant of the City's conservation efforts during this time is the City's toilet retrofit program. Implemented in 1991, the program enables City customers to replace standard (7-gallon) and low-flush (3.5-gallon) toilets with ultra low-flush toilets (1.6-gallon) free of charge. In addition, the City requires that all new construction install ultra low-flush toilets.

In 1997, to improve water supply reliability, Napa issued its first comprehensive water master plan. The plan was conducted by an outside consultant and included a detailed evaluation of the City's water system. The plan recommended approximately 60 capital improvement projects to address current and future system demands over the next 25 years. Estimated cost for the 60 improvement projects: $30.2 million. Major projects included adding 10 million gallons of treated water storage capacity (to meet current storage requirements) and increasing treatment capacity at Jameson Canyon WTP (to

meet scheduled increases in SWP entitlements). Notably, the plan concluded that in drought years, the City faced a short-term annual water deficit of approximately 4,200 acre-feet (based on the assumption of a 50% reduction in SWP entitlement).[79] The plan provided an analysis of potential supply alternatives, including enhancing local water resources, conjunctive use programs, increasing imported water supplies, and wastewater reclamation projects. Of special interest, the two conjunctive use programs analyzed in the plan proposed supplying groundwater users with surface flows generated from Milliken Creek or Conn Creek during above-normal and normal water years. The Milliken Creek alternative suggested supplying the two golf courses at the Silverado County Club with surface flows from Milliken Creek. The affected groundwater basin could then be recharged and available to the City during dry periods. Similarly, the Conn Creek alternative proposed supplying agricultural users in the mid-Napa Valley with water from Conn Creek or the Conn Transmission Line. The plan noted that implementation of the aforesaid conjunctive use projects would require a groundwater management plan developed in cooperation with the County. Based on cost and feasibility of implementing supply alternatives examined, the plan recommended the City pursue a water banking agreement with another SWP contractor or negotiate an acceleration of its SWP entitlement to mitigate water deficits during drought years.

Beginning in the late 1990s, Napa undertook a number of projects to improve its potable water system. In 1998, the City reached a 20-year agreement with the Napa Sanitation District (NSD) allowing NSD to provide reclaimed water service within a portion of its water service area. The agreement defines NSD's reuse area as lands east of the Napa River, south of Imola Avenue, west of State Highway 221, and north of the City of American Canyon. In addition, the agreement allows NSD to deliver reclaimed water to the Napa State Hospital, Stanley Ranch, and the South Napa Market Place. The agreement has two primary objectives: alleviate system demands on the City's potable water system and provide NSD with suitable alternatives for the storage of treated wastewater when discharge to the Napa River is prohibited.

In 1999, Napa increased its available water supply by negotiating an accelerated entitlement for its SWP supply, increasing its available entitlement from 7,400 acre-feet to 11,350 acre-feet. One year later, the City completed construction on the Lakeview Reservoir in east Napa. The Lakeview Reservoir is a buried, five million gallon reservoir that provides pressure and recharge to the City's downtown area during fluctuations in system demand. The Lakeview Reservoir replaced the Eastside Reservoir, a 30 million gallon open reservoir that was taken off-line in 1993.[80] The Eastside Reservoir served as the City's storage and treatment facility (chlorinated gas chlorinators) for water drawn from Lake Hennessey. In 1981, the Hennessey Water Treatment Plant was constructed downstream from Conn Dam and Eastside Reservoir received fully treated water from the conventional treatment facility. Until the time it was taken off-line, the Eastside Reservoir provided pressure and recharge to the City's downtown area.

[79] The plan concluded that Napa's water supply deficit would be eliminated without augmentation by 2012 due to the City's scheduled increases in SWP entitlement.

[80] California Department of Health Services now requires that treated water storage facilities be covered.

In 2002, Napa completed construction of the Alston Tank No. 2, a four million gallon treated water storage tank. The Alston Tank No. 2 is in addition to the City's original A Tank (4.0 million gallons) that has served the City since 1961. Currently, the City is concluding easement negotiations to facilitate the construction of a five million gallon treated water storage tank near the Napa State Hospital. In addition, the City has recently completed the pre-design study and is preparing a Request for Proposal (RFP) for the expansion of the Jameson Canyon WTP. The City also anticipates preparing a vulnerability assessment and an emergency response plan later this year.

In addition to providing potable water service within its own service area, Napa's water system performs a key role in the supply of potable water to the City of Calistoga, Town of Yountville, and the Congress Valley Water District (CVWD). Each of these agencies maintains their own transmission lines connecting to Napa's distribution system. Both Calistoga and Yountville have agreements for Napa to treat and convey their annual SWP entitlements. Napa is reimbursed for the costs associated with the treatment and conveyance of SWP water in proportion to the amount of water delivered to each city. To facilitate delivery, Calistoga and Yountville turn their SWP entitlements over to Napa in exchange for an equivalent amount of water from the City's three commingled sources: Lake Hennessey, Milliken Reservoir, and the SWP.

Since 1951, Napa has supplied potable water to CVWD. The District was formed in 1949 under the California County Water District Law and serves a rural-residential community directly southwest of Napa. Its formation was sought by local property owners for the purpose of facilitating an agreement with the City for the delivery of potable water. Negotiations with the City were prompted following several consecutive years of water shortages in Congress Valley; during the late 1940s, groundwater supplies proved inadequate and bridled with high levels of minerals. The most recent agreement between the City and District was reached in 1987. This 30-year agreement provides the District with an annual entitlement of 100 acre-feet of potable water and restricts service to 140 connections. District customers are billed directly by the City at its inside city rate. The City maintains the distribution system serving Congress Valley and currently has 74 metered water connections. At the conclusion of the agreement in 2017, the District will voluntarily dissolve and turn over all of its assets to the City.

Finally, Napa has until recently maintained a water supply agreement with the State of California allowing the State to convey potable water from Rector Reservoir to the Napa State Hospital through an interconnection with the City's distribution system. The agreement specified the terms and conditions in which Napa agreed to reserve a maximum average of 3,000 gallons per day (subsequently amended to 1,250,000 gallons) for use by the Napa State Hospital and the Veterans Home in Yountville. However, the State was forced to take the Rector Water Treatment Plant off-line in 1981 due to water quality concerns. As a result, the State discontinued using the City's distribution system to serve Napa State Hospital. Water service to Napa State Hospital is now provided directly by the City. The Rector Water Treatment Plan was brought back on-line in 1986

and now serves the Town of Yountville and the Veterans Home. The interconnection is currently used by the Veterans Home to draw water from the City's distribution system on a need basis. Since December 1, 2000, the City has supplied water to Napa State Hospital and the Veterans Home at the outside city limit water rate.

GOVERNANCE

Napa was incorporated in 1914 as a charter-law city and is governed by a four-member city council and directly elected mayor. The mayor and four city councilmembers serve staggered four-year terms and are elected by general vote. A city manager is appointed to oversee and implement policies on behalf of Napa's City Council. The city manager is responsible for overseeing the City's 12 departments: city clerk, civil service commission, community resources, finance, fire, housing authority, parks and recreation, personnel, planning, police, public works, and redevelopment. In 1998, Napa's City Council adopted an update to the 1982 General Plan outlining land use and development policies for the City through 2020. Napa's City Council meetings are conducted on the first and third Tuesday of each month at the City's Council Chambers. Meetings are open to the public.

OPERATIONS

Napa's water system is maintained and operated by the City's Public Works Department, Water Division. A general manager is appointed by the public works director to oversee and manage the water division's three sections: engineering and administration, treatment and operations, and distribution system maintenance. Designated staff is on call 24 hours a day, 7 days a week to respond to reported emergencies. As of February 2003, the water division consisted of 46 full-time employees.

ADOPTED BOUNDARIES

Napa's incorporated boundary is comprised of approximately 11,786 acres. Napa's adopted sphere of influence encompasses the majority of the City's incorporated boundary with two notable exceptions: Alston Park and Stanly Ranch. The City's water service area extends outside its incorporated boundary to include customers north of the City along State Highway 29 towards Rutherford, east along Monticello Road towards the Silverado Estates Community, and south along State Highway 29 towards State Highway 12. Land use designations for Napa are defined in the City's General Plan.

Napa – Adopted Boundaries	
Incorporated Boundary:	11,786 acres *****
Sphere of Influence Boundary:	11,085 acres *****

* Figures are approximations calculated using information generated by County of Napa's geographic information system.

WATER SUPPLY

Napa's water supply is drawn from three sources: Lake Hennessey, Milliken Reservoir, and the SWP. Water provided by Lake Hennessy is supplied by Conn Creek, a tributary of the Napa River. 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 Creek 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 of approximately 5,000 acre-feet of water per year.[81] Lake Hennessey is typically set as the City's lead water source between May and September.

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 typically set as a secondary water source between March 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 NCFCWCD. 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 original agreement provided the City with an annual entitlement of SWP water through 2035, with a maximum annual entitlement of 12,500 acre-feet by 1990 (made available in gradual increments). The agreement was amended in 1982 as part of a statewide program by the California Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amended agreement reduced the City's short-term annual entitlement, while increasing its maximum annual entitlement to 18,800 acre-feet by 2021.[82] The City's SWP entitlement was modified again in 2000 following a water transfer agreement between NCFCWCD and Kern County Water Agency (KCWA). Negotiated on behalf of the five cities in Napa County, the agreement specified terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from

[81] Napa's *Water System Optimization and Master Plan (1997)* defined "firm yield" as the supply available under drought conditions.

[82] In 1999, Napa negotiated an acceleration of its entitlement schedule increasing the available SWP entitlement in 1999 from 7,400 acre-feet to 11,350 acre-feet.

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. Water drawn from the SWP is typically used as the City's lead water source between October and April.

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.

** Napa's SWP entitlements are gradually increased each year through 2021 at which time the City shall reach its maximum annual entitlement of 19,800 acre-feet. Entitlements continue thereafter until 2035.

WATER DEMAND

In 2002, Napa delivered approximately 5.7 billion gallons (17,613 acre-feet) of potable water, resulting in an approximate daily average of 15,726,238 gallons. This includes 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.[83]

Napa – 2002 Water Demand	
Annual Water Demand:	5,740,076,700 *
Average Daily Water Demand:	15,726,238 gallons
Maximum Day Water Demand:	30.7 million gallons **
Water Connections:	24,293
Population Served:	80,167 ***

[83] Outside water service connections are restricted and subject to an application process codified in the City's "Resolution No. 7." Resolution No. 7 limits extension of water service to outside residential properties of legal record as of December 31, 1982 that are contiguous to an existing public right-of-way that includes an existing water line. In addition, outside residential properties that are located within the City's Rural Urban Limit must annex to the City unless annexation is not legally permissible or the Council waives the requirement. Exemptions require approval by four-fifths of the City Council.

* Includes potable water deliveries to the City of Calistoga, Town of Yountville, and the Congress Valley Water District. In 2002, Napa delivered approximately 560 acre-feet to Calistoga, 282 acre-feet to Yountville, and 50 acre-feet to Congress Valley Water District. In addition, Napa delivered approximately 636 acre-feet to the City of American Canyon. Similar to its agreements with Calistoga and Yountville, Napa "treats and wheels" a portion of American Canyon's SWP entitlement when the North Bay Aqueduct is off-line or when American Canyon's treatment facility is shut down for repair. This arrangement is facilitated through a recently expired emergency water supply agreement. Both agencies are currently negotiating a renewal to this agreement.

** Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

******* Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for Napa were identified in the City's *Water System Optimization and Master Plan (1997).* The plan identified existing and projected water demands for Napa's water service area in 2010 and 2020 under two hydrological conditions: normal and restricted. Demands were determined by applying historical unit water demand factors for six consolidated land use classifications with expected land use development according to the City's General Plan. Consolidated land use classifications identified in the plan included single-family residential, multi-family residential, commercial/industrial, elementary schools, high schools and Napa Community College, and parks and sports complexes.

Napa – Projected Water Demands (acre-feet) *		
Year	**Normal Conditions**	**Restricted Conditions****
2010	15,063	12,050.40
2020	16,566	13,252.80

* Napa's projected water demand does not include demands for the City of Calistoga or the Town of Yountville. Projected water demands also assume an 8% reduction in demand due to the implementation of the City's long-term water conservation program.

** Restricted demand based on 20% reduction in normal year demand due to conservation measures enacted during drought years.

WATER TREATMENT 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 receives raw water from Lake Hennessey through an intake pump system. The treatment process begins as raw water is injected with potassium permanganate (disinfectant), alum and polymer (coagulants) before entering a flash mixer. Solids are removed as raw water passes through flocculation and sedimentation basins. Settled water is filtered and injected with chlorine (disinfectant) and caustic soda (controls acidity) before flowing into a 5.0 million gallon clearwell tank. The clearwell tank completes the disinfection process by facilitating the necessary contact time between the chlorine and treated water. Finished water remains in the clearwell tank until storage levels within the City's distribution system require recharge. The Hennessey WTP has a treatment capacity of approximately 13,888 gallons per minute, resulting in a daily treatment capacity of 20 million gallons.

Raw water drawn from Milliken Reservoir is treated at the Milliken WTP. The Milliken WTP was constructed in 1976 and receives raw water through a transmission line that captures released water from Milliken Creek. The treatment process begins as chlorine, alum and polymer are injected as raw water is detained in a contact/reaction tank. Solids are removed as the settled water is filtered and pumped to a 2.0 million gallon clearwell tank. The clearwell tank completes the disinfection process and stores finished water until storage levels in the distribution system require recharge. The Milliken WTP has a treatment capacity of approximately 2,777 gallons per minute, resulting in a daily treatment capacity of 4.0 million gallons.

The Jameson Canyon WTP provides treatment for raw water drawn from the SWP. The Jameson Canyon WTP was constructed in 1968 and receives SWP water through a transmission line that connects to the Napa Turnout Reservoir (SWP storage facility). SWP water is generated from the Sacramento-San Joaquin Delta near Barker Slough and is conveyed to the Napa Turnout Reservoir by the North Bay Aqueduct. Raw water stored inside the Napa Turnout Reservoir is pretreated with potassium permanganate. The treatment process at Jameson Canyon WTP begins as raw water is injected with alum, polymer, and chlorine before entering a flash mixer. Solids are then removed as raw water passes through flocculation and sedimentation basins. Settled water is filtered and injected with chlorine and caustic soda before entering a 5.0 million gallon storage clearwell tank. The clearwell tank completes the disinfection process and stores finished water until storage levels in the distribution system require recharge. The Jameson Canyon WTP has a treatment capacity of approximately 8,333 gallons per minute, resulting in a daily treatment capacity of 12 million gallons.[84]

[84] Napa is currently in the pre-design process of expanding the treatment capacity at the Jameson Canyon WTP to 29 million gallons a day. The project is scheduled to begin in 2005.

Hennessey Water Treatment Plant	
Water Source:	Lake Hennessey
Treatment Capacity:	13,888 gallons per minute; or 20 million gallons per day
Clearwell Storage Capacity:	5.0 million gallons

Milliken Water Treatment Plant	
Water Source:	Milliken Reservoir
Treatment Capacity:	2,777 gallons per minute; or 4.0 million gallons per day
Clearwell Storage Capacity:	2.0 million gallons

Jameson Canyon Water Treatment Plant	
Water Source:	State Water Project
Treatment Capacity:	8,333 gallons per minute; or 12 million gallons per day
Clearwell Storage Capacity:	5.0 million gallons

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

Napa's distribution system receives and distributes potable water generated from its three water treatment plants: Hennessey, Milliken, and Jameson Canyon. The distribution system overlays five pressure zones and is served (recharge and system pressure) by three clearwell tanks and 11 storage tanks. "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 on lower elevations and receive water that is released from Zone 3. Zone 1 underlays the downtown area while Zone 2 underlays the remaining portion of central Napa. Collectively, these three pressure zones constitute the majority of the City's distribution system and include 11 pressure reducing stations that regulate pressure between interchanges.

"Zone 4" and "Zone 5" consist of eight independent subzones serving residential customers in Napa's outlying water service areas. Zone 4 underlays Browns Valley, Alta Heights, and the Hillcrest area and is served by booster pumps from Zone 3 and the Milliken Clearwell Tank. Zone 5 underlays a small portion of Alta Heights and the Silverado Highlands and is served by booster pumps from Zone 3 and the Milliken Clearwell Tank. In all, nine booster pump stations lift water to Zones 4 and 5.

Napa's distribution system operates on a supply and demand basis and responds to storage levels within Zone 3. When storage levels within Zone 3 require recharge, potable water is released from the designated clearwell tank in accordance to the City's water supply schedule. The City's primary water supply alternates between Lake

Hennessey and the SWP; Milliken Reservoir is used as a secondary water source between March and October. As a result, the distribution system is primarily dependent on two transmission lines: the Conn Transmission Line and the Jameson Transmission Line.

The Conn Transmission Line was constructed in 1948 and delivers potable water to Napa from the clearwell tank at the Hennessey WTP. The 36-inch line is approximately 20 miles long and runs parallel to Conn Creek, State Highway 128, and State Highway 29. The Conn Line travels along easements and right-of-ways before connecting to the Jameson Line in northwest Napa. The two transmission lines connect near the intersection of West Pueblo Avenue and Solano Avenue. A second connection is made as the Conn Line continues east from its original connection point to the Lakeside Reservoir in northeast Napa. The second connection point is near the intersection of East Avenue and Evans Avenue.

The Jameson Transmission Line was constructed in 1967 and delivers potable water to Napa from the clearwell tank at the Jameson Canyon WTP. The Jameson Line is comprised of a 42-inch line that runs parallel from Jameson WTP to Jameson Canyon Road and State Highway 29. The line splits into 36-inch and 24-inch lines near the intersection of State Highways 29 and 221. The 36-inch line continues northwest along State Highway 29 and underneath the Napa River before connecting to the Conn Line near the intersection of West Pueblo Avenue and Solano Avenue. The 24-inch line continues north from the split along State Highway 221 before connecting to the Conn Line near the intersection of East Avenue and Evans Avenue.

A third transmission line, the Milliken Transmission Line, delivers potable water from the clearwell tank at the Milliken WTP to Napa. The 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 Milliken Line also provides water service to the residential area near the Silverado County Club as well as the Hillcrest area.

Napa – Distribution Storage Capacity	
Storage Tank A (Alston):	4.0 million gallons
Storage Tank A No. 2 (Alston):	4.0 million gallons
Storage Tank B:	1.0 million gallons
Storage Tank C:	2.0 million gallons
Alta Heights Tank 1:	45,000 gallons
Alta Heights Tank 2:	5,000 gallons *
Falcon Ridge Tank:	25,000 gallons
Hagen Oaks Tank:	25,000 gallons
Holly Court Tank:	600 gallons *
Lakeview Reservoir:	5.0 million gallons
Silverado Tank:	10,000 gallons
TOTAL:	**16,110,600 gallons ****

* Pressure tanks

** Figure does not include storage capacity within Napa's three clearwell tanks (12 million gallons) or the Alta Heights Fire Tank (45,000 gallons)

RATE SCHEDULE

Napa's water customers are charged a bimonthly usage fee for water service. The usage fee is fixed and divided between inside and outside city customers. The fee is based on the amount of water delivered and is measured in units of 1,000 gallons. A lift elevation surcharge is applied to some customers located within the City's two highest pressure zones: Zone 4 and Zone 5. This charge is intended to recover costs associated with the operation of booster pumps needed to lift treated water to the above-noted pressure zones. Connection fees are divided between three customer classes: single-family residential, multi-family residential, and non-residential (commercial, industrial, and irrigation). Residential connection fees are based on meter size and the number of living units, while non-residential connection fees are based solely on meter size.[85]

Napa – Rate Schedule	
Water Usage Fee	
Inside City:	$3.23 per 1,000 gallons
Outside City:	$4.32 per 1,000 gallons
Lift Elevation Fee:	$0.15 per 1,000 gallons
Connection Fee	
Single-Family Residential:	3/4-inch meter size: $2,117 1-inch meter size: $2,117 1.5-inch meter size: $7,049 2-inch meter size: $11,283
Multi-Family Residential:	Detached (living unit): $2,117 Attached (additional unit): $1,588
Non-Residential: (commercial/industrial/irrigation)	3/4-inch meter size: $2,117 1-inch meter size: $3,535 1.5-inch meter size: $7,049 2-inch meter size: $11,283 3-inch meter size: $22,587 4-inch meter size: $35,288 6-inch meter size: $70,556 8-inch meter size: $112,893 12-inch meter size: calculated

[85] Connection fees for fire service are calculated independently from the formula used to determine residential and non-residential connection fees.

FINANCIAL

Napa's Water Enterprise Fund has an approved operating budget for 2002-2003 of $14,929,007. Primary expenses include maintenance and operation costs, employee payroll, and capital improvements. The City's anticipated revenue for 2002-2003 is $14,894,000. Revenue sources include water sales, connection fees, and interest on reserve funds. As of February 2003, the City's Water Enterprise Fund's cash reserve balance was $5,825,000.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Napa's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[86] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Napa's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its local and imported water supply, the City of Napa has an adequate supply of water to meet existing and projected water demands under normal conditions within the timeframe of this study.

2. The City of Napa should continue to pursue opportunities to increase and enhance its available water supply and continue to educate its constituents with respect to water conservation opportunities. These actions will help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. Through its contractual agreements, the City of Napa's water system performs a key role in the supply of potable water to the City of Calistoga, Town of Yountville, and the Congress Valley Water District. Napa should continue to address the system needs of these agencies in their water supply planning efforts. This includes evaluating and implementing mutually beneficial system improvements to maximize the timely availability of water to each affected agency, while minimizing the demand on Napa's stored reserves.

4. As a subcontractor of Napa County Flood Control and Water Conservation District, the City of Napa receives an annual entitlement of water drawn from the State Water Project. To account for the realities of water entitlements, Napa should continue to objectively differentiate between entitlements and actual deliveries in their water supply analysis. This is especially important to ensure an adequate supply of water during extended drought periods when deliveries are restricted.

[86] LAFCO Resolution No. 03-35, adopted December 11, 2003.

5. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of State Water Project deliveries using historical precipitation rates along with projected land and water use demands through 2021. Notably, this report includes delivery estimates during drought periods. This report is a valuable tool for all SWP contractors and should be incorporated into Napa's water supply planning efforts.

6. The City of Napa has made reasonable efforts to secure additional water supplies to meet existing and projected water demands within its service area. This demonstrates a continued effort by Napa to address system needs and deficiencies in a timely manner.

   Examples include Napa's 1989-1991 water supply agreement with Yuba County and its participation in Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with Kern County Water Agency. In addition, Napa has continually benefited from augmenting its imported water supply with carryover and interruptible water supplies generated by the California Department of Water Resources.

7. The City of Napa requires improvements to its treated water storage facilities to meet future maximum day water demands and ensure adequate reserves during an emergency or interruption in service.

   Napa's maximum day water demand in 2002 was 30.7 million gallons, while its total treated water storage capacity is approximately 28.1 million gallons (including storage capacities within its three clearwell storage tanks). Napa is currently in easement negotiations to facilitate the construction of a 5.0 million gallon treated water storage tank near the Napa State Hospital. Once completed, this project will increase Napa's available treated water storage capacity to approximately 33.1 million gallons, enabling Napa to meet its projected required storage capacity of 33.1 million gallons in 2010.

8. The City of Napa has an agreement with the Napa Sanitation District permitting the District to solicit and provide reclaimed water service within a portion of its water service area. The extension of reclaimed water service within Napa's "reuse area" is an important component to its water conservation efforts and offers the promise of alleviating future potable water demands.

   Existing potable water customers within Napa's reuse area includes the Napa State Hospital, Kennedy Park, Napa Municipal Golf Course, Napa Valley College, and the South Napa Market Place. In 2002, Napa delivered approximately 843.1 acre-feet of potable water to these customers.

9. Reclamation is a beneficial and efficient use of existing water resources and will strengthen the City of Napa's water conservation efforts.

10. Evaluation of Napa Sanitation District's reclaimed water program within the City of Napa's water service area and its actual impact on the City's potable water demands should be evaluated in future studies.

Growth and Population Projections:

1. The City of Napa evaluates its water service capacities using reasonable demand projections detailed in its *Water System Optimization and Master Plan (1997).*

2. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by the City of Napa's water service system. The population served by Napa's water system based on this calculation method is 80,167.

Financing Constraints and Opportunities:

1. The City of Napa's water service operations are primarily financed through the collection of fixed water usage fees; service fees are not collected. Due to the variance associated with this revenue source, Napa's water service operations could experience a significant loss in revenue during a drought when water sales are reduced as a result of conservation measures.

   Napa maintains a "Revenue Stabilization Reserve Fund" as part of its cash reserves for its water enterprise fund. This reserve fund is designed to help cover operating costs during a drought when the City experiences a loss in water sale revenues.

2. The City of Napa has been successful in supplementing its capital reserves with outside financing to cover the costs of implementing needed capital improvements to its water service operations.

   In 2002, Napa received a four million dollar low-interest loan from the California Department of Water Resources to fund construction of the Alston Park No. 2 treated water storage tank. This loan was made available to Napa as part of California's Safe, Clean, Reliable Water Supply Act of 1996. Napa is currently pursuing a similar loan to finance the construction of a five million gallon treated water storage tank near the Napa State Hospital.

3. The City of Napa has an agreement with the Napa Sanitation District permitting the District to solicit and provide reclaimed water service within a portion of its water service area. As part of this agreement, Napa is reimbursed for the loss of potable water sales revenue attributed to a customer's conversion to reclaimed water service; reimbursement continues until Napa regains its previous revenue level (based on gallons) prior to conversion. This arrangement should provide Napa with added revenue over the short-term, while reducing its operation cost relating to the treatment and delivery of potable water.

4. As Napa Sanitation District begins to extend reclaimed water service within the City of Napa's water service area, future studies should further examine the long-term financial impact this arrangement has on Napa's water service operations.

Cost Avoidance Opportunities:

1. The City of Napa is a member of Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Watrtac." This group provides NCFCWCD with input among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory group provides Napa the opportunity to share costs with other participating agencies on projects of mutual interest and facilitates the exchange of service information.

2. The City of Napa is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." This study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050. Napa will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. The City of Napa's water service rates were last increased in 1999 and are competitive with the rates offered by the other four cities in Napa County.

2. The City of Napa should consider adopting a service fee to supplement its bimonthly usage fee. A service fee would lessen the financial impact resulting from lost revenue during a drought when water sales are reduced as a result of conservation measures.

   Napa recently initiated work on a financing plan to determine revenue requirements for its water service operations, including funding approved capital improvement projects. As part of this plan, Napa will be conducting a review of its water rate schedule. This review could result in the recommendation for an increase to its current water rate schedule.

Opportunities for Shared Facilities:

1. As a subcontractor to Napa County Flood Control and Water Conservation District, the City of Napa is responsible for assuming its proportional costs for the delivery of water drawn from the State Water Project. Subcontractors are also responsible for paying a transportation charge that covers the cost associated with

the infrastructure and facilities needed to capture and convey water to Napa County. These shared facilities include the North Bay Aqueduct and the Napa Turnout Reservoir. Costs relating to future upgrades and improvements to this conveyance system will be shared among each subcontractor as well as the Solano County Water Agency and its subcontractors.

Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District (NCFCWD). NCFCWCD is currently working with the Solano County Water Agency to implement improvements to the North Bay Aqueduct to meet both agencies contracted entitlement amount. A key factor to this planned improvement is the completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from NCFCWCD's agreement with the Kern County Water Agency.

2. The City of Napa shares costs with the City of Calistoga and the Town of Yountville relating to its water treatment and delivery facilities for treating and conveying each agency's allotment of water entitlements drawn from the State Water Project. Napa's relationship with each of these agencies provide the mechanism for the City to share costs relating to future system improvements for its water system, while eliminating the need for Calistoga and Yountville to invest in duplicate conveyance infrastructure.

3. The City of Napa and the Napa Sanitation District share resources relating to each agency's toilet retrofit program. Both agencies' programs are managed by a shared employee and offer incentives for constituents to replace their standard and low-flush toilets with ultra-flush toilets. This collaborative effort lessens the demand on Napa's potable water supply, while reducing the amount of wastewater needed to be collected and treated by Napa Sanitation District. This relationship facilitates cost efficiencies between both agencies and serves to encourage the efficient use of existing water resources within each agency's respective service area.

Government Structure Options:

1. The City of Napa is the only public agency currently providing potable water service within its jurisdictional boundary. There are two other public agencies empowered to provide potable water service whose jurisdictions overlap that of Napa: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. The City of Napa, the County of Napa, and LAFCO should establish a policy reconciling the provisions of Government Code §56133, which restricts the extension of water service outside an agency's adopted boundaries, with the provisions contained in the City's Charter Section 180 and Policy Resolution No. 7, which places its own restrictions on outside water service.

3. The City of Napa has elected not to exercise its right to provide reclaimed water service. Under the terms of a 1998 agreement, Napa permits the Napa Sanitation District to provide reclaimed water service within a specified portion of its water service area. A jurisdictional-wide arrangement for the provision of reclaimed water service would enhance planning between both agencies and facilitate greater opportunities for the extension of reclaimed water service for beneficial uses.

4. As part of a 1987 agreement, the City of Napa provides potable water supplies and maintains the distribution system for the Congress Valley Water District. This agreement specifies that the Congress Valley Water District voluntarily dissolve and turn over all assets to Napa in 2017. Future studies should evaluate the relationship between both agencies, including the impacts of dissolution and the benefits of alternative government structure options for the affected area.

Evaluation of Management Efficiencies:

1. Each year, the City of Napa provides a summary of past and projected revenues and expenditures stemming from its water service operations as part of its annual budget. The budget is adopted following a series of internal steps and reviews that precedes a public workshop and hearing in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected and appointed officials, the budget process provides a clear directive towards staff with respect to prioritizing city resources.

2. In 1997, the City of Napa prepared its first comprehensive water master plan. The plan recommended approximately 30 million dollars in capital improvement projects to address existing and future water system requirements through 2020. The capital improvement program was adopted by Napa's City Council and demonstrates a reasonable effort on behalf of management to address and update water quality and service objectives in a timely and efficient manner.

3. The City of Napa has sufficient capital reserves to finance necessary upgrades and improvements to its water system; reserves are generated from surplus revenue drawn from water sales. Applying surplus revenue from water sales is a fair and equitable approach to passing capital expenditures to ratepayers without incurring or relying on loans, special assessments, or bonded indebtedness to fund needed improvements.

Local Accountability and Governance:

1. The City of Napa City Council meetings are conducted twice a month and are open to the public. Public inquiries involving water service operations can be addressed to the Council at this time. Regularly scheduled council meetings provide an opportunity for Napa's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The City of Napa makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute to public involvement in local governance.

   These efforts include mailing an annual newsletter providing an overview of water service operations, inserting news inserts with billing statements, special mailings for major construction projects, and posting pertinent service information, including its most recent "water quality report," on Napa's website. Customers can visit or call Napa's water billing division during regular business hours to discuss questions regarding their bimonthly water bill. Designated water division employees are also on call 24 hours a day to respond to reported emergencies.

3. The City of Napa is the largest potable water service provider in Napa County, serving approximately 80,000 customers. In addition to serving its own customers, Napa is under contract to provide potable water to three other public agencies in the County: City of Calistoga, Town of Yountville, and Congress Valley Water District. Napa should continue to diligently evaluate and implement improvements to its water service operations to meet system demands and help to ensure a safe and reliable water supply.

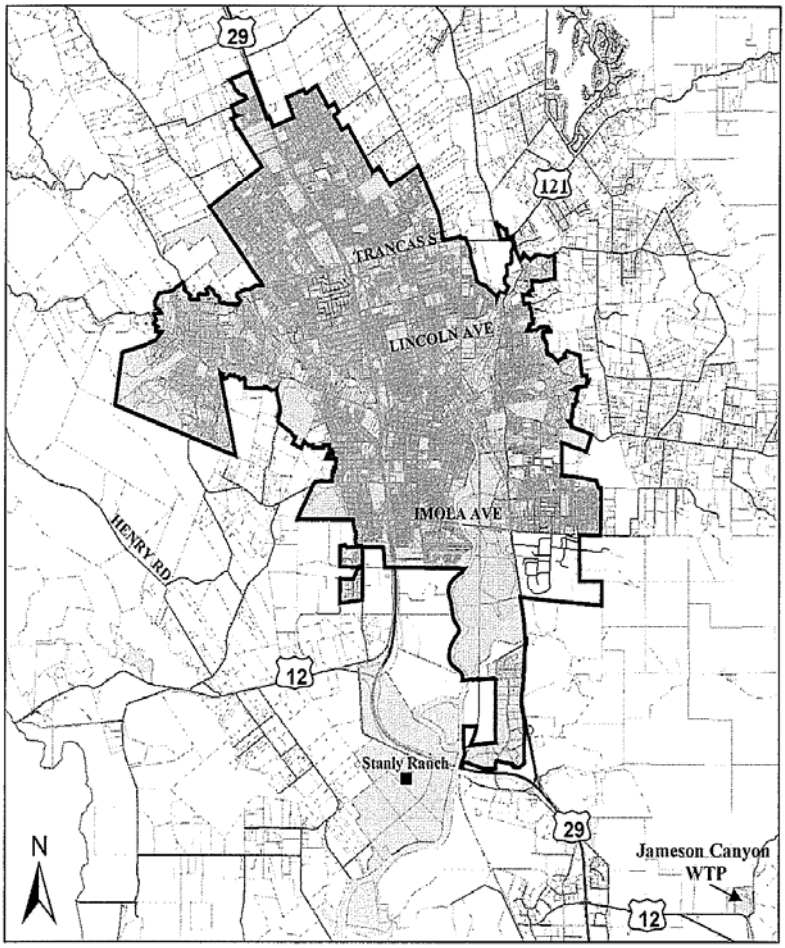
4. The City of Napa is currently preparing two studies aimed at evaluating its water service system with respect to vulnerability and emergency response capabilities. Collectively, these studies should enhance Napa's ability to mitigate deficiencies to its water service facilities and improve system responses during an emergency or interruption in service.

5. The City of Napa's Water Service Division actively pursues and promotes water conservation opportunities through various components of its water conservation program. This program helps to ensure the beneficial and long-term use of existing water resources within Napa's service area and is an important component in strengthening its local accountability.

   Examples include offering a toilet retrofit program, issuing water conservation materials, conducting water efficient landscaping workshops, and attending local annual events, such as Napa County Fair and the Napa County Home and Garden Show.

6. The City of Napa's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

City of Napa



LEGEND

City of Napa

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

CITY OF ST. HELENA

OVERVIEW

Beginning in the mid-1800s, the community of St. Helena emerged as the agricultural trading and shipping center for the Napa Valley. Originally settled as part of General Mariano Vallejo's land grant in the 1830s, St. Helena quickly developed as the commercial base for local farmers and ranchers due to its central location within the Valley. St. Helena commercial base was expanded to include tourism following the opening of the White Sulphur Springs Hotel in 1855, Napa County's first spa resort. By the 1860s, the Napa Valley Railroad Company, the precursor to future branches of the Central Pacific Railroad and Southern Pacific Railroad Companies, was extended north from Napa City to include stops in Yountville, Oakville, Rutherford, and St. Helena. Notably, the arrival of the railroad coincided with an influx of European immigrants, prompting the development of vineyards as the Valley's principal commerce.

St. Helena was incorporated in 1876.[87] Over the next several decades, the City's commercial base continued to expand as local vineyards flourished. The early success of vineyards in the latter part of the 1800s led to the development of permanent commercial and residential areas along Main Street in St. Helena. In 1878, the City's first potable water system was developed and operated by the St. Helena Water Company following the construction of York Creek Dam and St. Helena Lower Dam. This system was purchased by the City in 1922 and consisted of water drawn from York Creek (tributary of the Napa River) by means of a concrete diversion structure and stored at two off-stream reservoirs, Upper and Lower Reservoir. York Creek continued to serve as a potable water source until 1980 when increased water quality standards prompted the City to abandon Upper Reservoir and convert Lower Reservoir to a non-potable water source for local irrigation and construction use.

St. Helena's development was tempered in 1920 after the United States Congress passed the National Prohibition Act. The passage of prohibition, which outlawed the sale of alcohol in the United States, led to the closure and abandonment of a number of vineyards in the Napa Valley and limited growth in St. Helena for several years thereafter. Following the repeal of prohibition in 1933, a renewed interest in winemaking emerged facilitating an increase in growth and tourism throughout the Valley. To meet increased system demands during this period, the City augmented its water supply by enlarging the storage capacity of Lower Reservoir in 1935 and constructing an emergency interconnection with the City of Napa's distribution system near Rutherford in 1948. In 1959, the City completed construction on Bell Canyon Dam allowing it to begin diverting and storing water drawn from Bell Canyon Creek, a tributary of the Napa River. The result was the creation of Bell Canyon Reservoir, which quickly became the City's lead water source with an original maximum storage capacity of 1,800 acre-feet.

[87] St. Helena was reincorporated in 1889.

The development of additional water supplies proved timely as continued growth within St. Helena resulted in increased water demands. Between 1970 and 1980, the City's population surged from 3,173 to 4,898, a growth increase of nearly 55 percent. In 1973, in response to the influx of commercial and tourist related development, St. Helena's City Council issued an advisory ballot asking residents to indicate preferred growth policies for the City. The majority of residents responding to the advisory ballot favored implementing slow growth measures to maintain the City's small-town and agricultural character. Two years later, the City Council adopted St. Helena's first general plan, implementing growth restrictions and placing limits on tourist related establishments.

In the 1980s, growth pressures stemming from the 1970s proved taxing to St. Helena's available water supply. In addition, increased federal and state water quality standards required the City to improve the level of treatment for water drawn from York and Bell Creeks. In 1980, to comply with higher water quality standards for water drawn from Bell Creek, the City completed construction on the Louis Stralla Water Treatment Plant. At the same time, however, concerns involving possible threats to native endangered species coupled with the costs of constructing a second water treatment facility prompted the City to suspend its use of York Creek as a potable water source. The City's water supply was further taxed as a result of the 1987-1992 drought. To meet system demands during this period, the City initiated mandatory water restrictions in 1987, 1988, 1989 and 1991. These restrictions placed limits on residential and non-residential water uses such as landscaping and resulted in the adoption of permanent water conservation regulations. These regulations provide thresholds relating to the implementation of volunteer and mandatory water conservation programs based on current storage and consumption rates.

In 1992, to alleviate water restrictions, St. Helena developed a municipal well near the crossing of Pope Street and the Napa River. Referred to as the "Stonebridge Well," the well connects directly to the City's distribution system and is used to supplement the Bell Canyon Reservoir during peak demand periods as well as periods when the Louis Stralla Water Treatment Plant is off-line for maintenance. A second municipal well was developed next to the original Stonebridge well in 1996.

In 2000, to improve its future water supply, St. Helena participated in a water transfer agreement between the Napa County Flood Control and Water Conservation District (NCFCWCD) and the Kern County Water Agency (KCWA). Negotiated on behalf of the five cities, the water transfer agreement specified the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. St. Helena's annual share of the Kern County water transfer is 1,000 acre-feet. St. Helena's access to this entitlement, however, is contingent on the City making its own arrangements for transporting SWP water stored at the Napa Turnout Reservoir in Jameson Canyon to its distribution system.[88] In the interim, due to infrastructure costs and capacity restrictions associated with the North Bay Aqueduct, the City has elected to sell its annual entitlement to other Napa County SWP subcontractors while exploring opportunities to take delivery of this water in the future.

[88] St. Helena's existing transmission line that connects to the City of Napa's distribution system near the intersection of State Highways 29 and 128 in Rutherford does not have adequate capacity to deliver SWP entitlement.

In 2003, St. Helena issued its first *Urban Water Management Plan*. This plan addresses water supply and demand issues for the City through 2020, and highlights the potential for additional water supplies. The plan recommends the City evaluate the feasibility of enlarging Bell Canyon Reservoir and constructing a treatment facility at Lower Reservoir to increase available water supplies.

In addition to offering potable water service, St. Helena is in the process of developing a comprehensive reclaimed water service project aimed at reducing its annual potable water demand by approximately 1,000 acre-feet. Notably, the project would reduce potable water demands by providing an alternative water supply for landscaping and irrigation uses. Currently, the City produces restricted (secondary) reclaimed water that meets federal and state water quality standards for non-edible crops and certain industrial and landscaping uses. Treated wastewater is stored in a 100 acre-foot reservoir pond next to its wastewater treatment plant and used to irrigate an adjacent field to reduce storage volume. The project would increase the level of wastewater treatment to tertiary, allowing for unrestricted landscaping and irrigation use on parks, schools, and vineyards, while alleviating the City's dry-season storage requirements.[89] In addition, the project would enable the City to develop a conjunctive use program with local agricultural users. This would involve supplying contracted users currently on well water with unrestricted reclaimed water in lieu of extracting groundwater. In exchange, the City would then draw from these wells during dry periods when surface supplies are limited. The City is currently in the process of preparing an Environmental Impact Report and anticipates completing the first phase of the project in 2005. All three planned construction phases of the project are anticipated to cost approximately $16,000,000.

GOVERNANCE

St. Helena was incorporated in 1876 as a general-law city and is governed by a four-member city council and a directly elected mayor. Elections are conducted by general vote; the mayor serves a two-year term while the four city councilmembers serve staggered four-year terms. A city manager is appointed to oversee and implement policies on behalf of St. Helena's governing body and to provide oversight of the City's seven departments: finance, fire, library, planning, police, public works, and recreation. In 1993, the City Council adopted an update to its 1975 General Plan outlining land use development policies for the City through 2010[90]. St. Helena's City Council meetings are conducted on the second and fourth Tuesday of each month at Vintage Hall. Meetings are open to the public.

[89] The San Francisco Bay Regional Water Quality Control Board prohibits discharge of treated wastewater to the Napa River between May and October when flow rates are insufficient to handle discharges.

[90] St. Helena's 1993 General Plan identifies the City's maximum holding capacity as 7,450. Along with land use policies identified in the General Plan, development in St. Helena is limited in accordance to the City's Residential Growth Management System. Originally implemented in 1979, the Residential Growth Management System restricts new residential development to a maximum rate of 9 dwelling units per year; affordable housing units are exempt.

OPERATIONS

St. Helena's water system is maintained and operated by the City's Public Works Department, Water Operations Division. A public works director is appointed by the city manager to oversee and manage the water operations division's two sections: treatment and distribution. Designated staff is on call 24 hours a day, 7 days a week, to respond to any reported emergencies. As of March 2003, this division consisted of seven employees.

ADOPTED BOUNDARIES

St. Helena's incorporated boundary is comprised of two non-contiguous areas consisting of 3,285 acres. St. Helena's adopted sphere of influence encompasses the majority of its incorporated boundary with two notable exceptions: Bell Canyon Reservoir and the "Howell Mountain Road area."[91] The City's water service area extends outside its incorporated boundary to include several properties north along State Highway 29 to Lodi Lane, and south along State Highway 29 to Niebaum Lane. In addition, the City provides outside water service to the Meadowood Resort and a nearby residential area along Madrone Knoll Lane. Land use designations for St. Helena are defined in the City's General Plan.

St. Helena – Adopted Boundaries	
Incorporated Boundary:	3,285 acres *****
Sphere of Influence Boundary:	2,929 acres *****

* Figures are approximations calculated using information generated by County of Napa's geographic information system.

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." Water drawn from Bell Canyon Reservoir is supplied by Bell Creek, a tributary of the Napa River. St. Helena's water rights to Bell Creek are secured through two licenses from the State Water Resources Control Board, Division of Water Rights. These two licenses authorize St. Helena 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

[91] The Howell Mountain Road area was annexed to St. Helena in 1966 as part of a planned residential development project. In 1973, following the decision by the developer not to pursue the project, the Commission approved a request by the City to detach the affected area. However, detachment proceedings were terminated following 60 percent written protest by local residents.

drought.[92] 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 lead 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 located near the crossing of Pope Street and the Napa River. These wells are referred to as "Stonebridge Well No. 1" and "Stonebridge Well No. 2," and have current daily production capacities of .346 and .467 million gallons respectively. In 1998, the City adopted an ordinance restricting its use of groundwater to a maximum of 20 percent of its total system demand under normal conditions. In 2001, the City adopted a second ordinance increasing its use of groundwater to a maximum of 30 percent of its total system demand if storage levels at Bell Canyon Reservoir fall below designated operating levels throughout the year.[93]

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.[94]

St. Helena – Available Water Supply (acre-feet)	
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 million gallons per day. 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.

[92] The *Urban Water Management Plan (2003)* notes that Bell Canyon Reservoir's safe yield during multiple dry years could be reduced to 1,330 acre-feet to account for minimum water releases required by the California Department of Fish and Game for downstream fish populations.

[93] Since 1992, St. Helena has withdrawn an annual average of 274 acre-feet of groundwater from its Stonebridge Wells. In 2002, the City withdrew 349 acre-feet from these two wells.

[94] In the past, local construction firms have also purchased raw water drawn from Lower Reservoir. However, as of 2003, St. Helena has stopped allowing construction firms to purchase water from Lower Reservoir until an improved permitting system can be developed. The Robert Louis Stephenson Middle School and Spring Mountain Winery currently pay a flat usage rate of $0.61 and $0.63 per 748 gallons respectively.

****** Estimate based on current production capacity of .467 million gallons per day. 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.

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.[95]

St. Helena – 2002 Water Demand	
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 ******

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for St. Helena were identified in its *Urban Water Management Plan (2003)*. The plan identified projected water demands for St. Helena through 2020 over the course of designated planning periods: 2005, 2010, 2015, and 2020. 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.[96]

[95] In 1964, St. Helena's City Council adopted Resolution No. 577 prohibiting new water connections outside its incorporated boundary. In 2003, the City Council adopted Ordinance No. 2003-5 codifying the provisions of Resolution No. 577 as part of St. Helena's Municipal Code.

[96] Population estimates based on growth projections issued by the Association of Bay Area Governments.

St. Helena – Projected Water Demands (acre-feet)				
Year	**Inside ***	**Outside ****	**Landscape**	**Total**
2005	1,555	335	90	1,980
2010	1,580	335	90	2,005
2015	1,606	335	90	2,031
2020	1,631	335	90	2,056

* Projected demand based on an average per capita use of 228 gallons.

** Projected demand based on an average per capita use of 413 gallons (the plan assumes that no additional water connections will be approved outside St. Helena's incorporated boundary: thereby eliminating future demand increases for outside water service)

WATER TREATMENT 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's inlet tower through 24-inch and 18-inch transmission lines. The treatment process begins as potassium permanganate (disinfectant) is added to the raw water along with alum and non-ionic polymer (coagulants). Solids are removed as raw water passes through flocculation and sedimentation basins. Settled water is treated with chlorine (disinfectant), filtered, and treated again with chlorine and caustic soda (reduces pH levels) before pumps lift the water to a 84,700 gallon clearwell tank. The clearwell tank completes the disinfection process by facilitating the necessary contact time between the chlorine and treated water. Finished water remains in the clearwell tank until storage levels within St. Helena's distribution system require recharge. 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. Following its filtration, groundwater is disinfected with chlorine before entering the distribution system. Estimated daily treatment capacity when both wells are operating is 0.74 million gallons.

Louis Stralla Water Treatment Plant	
Water Source:	Bell Canyon Reservoir
Treatment Capacity:	2,430 gallons per minute; or 3.5 million gallons per day
Clearwell Storage Capacity:	84,700 gallons

Stonebridge Water Treatment Facility	
Water Source:	Stonebridge Well No. 1 Stonebridge Well No. 2
Treatment Capacity:	513 gallons per minute; or 0.74 million gallons per day

DISTRIBUTION SYSTEM AND STORAGE FACILITIES

St. Helena's distribution system receives and distributes potable water generated from the Louis Stralla WTP and the Stonebridge WTF. The distribution system overlays four pressure zones and is served (recharge and system pressure) by six treated water storage tanks. "Zone 1" serves as the City's primary pressure zone underlaying almost the entire distribution system and includes approximately 2,369 service connections. The City's remaining three pressure zones serve outlying residential areas within the distribution system and all draw water from Zone 1 through separate pumping stations. "Zone 2" includes approximately 38 service connections on the western side of the City in the vicinity of Dean York Lane and draws water from Zone 1 through the Spring Mountain Pump Station. "Zone 3" includes approximately seven service connections along the northwest perimeter of the City and draws water from Zone 1 through a separate pump station. This pump station lifts water to a 10,000 gallon treated storage tank, which supplies pressure and storage for customers within this zone. "Zone 4" includes approximately 44 service connections directly northeast of the City serving the Meadowood Resort and the Madrone Knoll residential area and draws water from Zone 1 through the Meadowood Pump Station. This pump station lifts water to three 66,000 gallon treated storage tanks, which supplies pressure and storage for customers within this zone.

St. Helena's distribution system operates on a supply and demand basis and responds to storage levels within Zone 1. Zone 1 is served by a 1.4 million gallon treated storage tank located next to the Louis Stralla WTP and a 2.7 million gallon treated storage tank located next to the Lower Reservoir. These tanks are respectively referred to as "Storage Tank No. 1" and "Storage Tank No. 2." When storage levels within Storage Tank No. 1 fall below a designated operating level, potable water is released and pumped from the Louis Stralla WTP's clearwell tank to Storage Tank No.1 for recharge. An 18-inch transmission line conveys potable water from Storage Tank No. 1 into Zone 1 through an interconnection near the intersection of Silverado Trail and Deer Park Road. As water enters Zone 1, water levels inside Storage Tank No. 2 are replenished.[97] Both storage tanks are located above Zone 1 and generate pressure through gravity.

[97] Storage Tank No. 2 can also be recharged by a booster pump station located at Storage Tank No. 1 if its storage levels are too low and/or storage levels at Storage Tank No. 1 are too high.

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 – Distribution Storage Capacity	
Storage Tank No. 1:	1.4 million gallons
Storage Tank No. 2:	2.7 million gallons
Zone 3 Storage Tank:	10,000 gallons
Meadowood Storage Tank No. 1:	66,000 gallons
Meadowood Storage Tank No. 2:	66,000 gallons
Meadowood Storage Tank No. 3:	66,000 gallons
TOTAL	**4,308,000 gallons ***

* Total does not include storage capacity at Louis Stralla WTP's clearwell tank (84,700 gallons).

RATE SCHEDULE

St. Helena's water customers are charged two bimonthly fees for water service: a tiered usage charge and a fixed service charge. The usage charge is divided between inside and outside city customers as well as residential and non-residential customers. This charge is based on the amount of water delivered and is measured in units of one hundred cubic feet. The service charge is also divided between inside and outside city customers and is based on meter size. In addition, a bimonthly pumping surcharge is applied to customers located within portions of St. Helena's service area requiring the use of pumping facilities. The pumping surcharge is based on the amount of water delivered to all customers served by a common special reservoir or pumping facility and is applied to each customer in measurements of one hundred cubic feet. Minimum connection fees are based on meter size and are divided between inside and outside customers as well as complete and partial service connections. Partial service connections typically involve subdivision developments where a service pipe is already in place.

St. Helena – Rate Schedule	
Inside Usage Fees	
Residential:	$1.16 for 0 to 20 hcf $1.89 for 21 to 40 hcf $1.94 for 41 to 60 hcf $2.05 for 61 to 80 hcf $2.31 for 81 to 120 hcf $2.89 for 121 and more hcf
Non-Residential: (based on entry level meter size)	$1.63 for 0 to 20 hcf $1.89 for 21 to 40 hcf $2.00 for 41 to 80 hcf $2.10 for 81 to 150 hcf $2.21 for 151 to 250 hcf $2.31 for 121 and more hcf
Outside Usage Fees	
Residential:	$1.42 for 0 to 20 hcf $2.26 for 21 to 40 hcf $2.31 for 41 to 60 hcf $2.47 for 61 to 80 hcf $2.78 for 81 to 120 hcf $3.47 for 121 and more hcf
Non-Residential: (based on entry level meter size)	$1.94 for 0 to 20 hcf $2.26 for 21 to 40 hcf $2.36 for 41 to 80 hcf $2.52 for 81 to 150 hcf $2.68 for 151 to 250 hcf $2.78 for 250 and more hcf
Inside Service Fees	
5/8-inch:	$14.18
1-inch:	$21.21
1.5-inch:	$38.96
2-inch:	$56.65
3-inch:	$95.60
4-inch:	$141.59
6-inch:	$247.80
8-inch:	$339.89
Outside Service Fees	
5/8-inch:	$30.45
1-inch:	$45.68
1.5-inch:	$83.84
2-inch:	$121.96
3-inch:	$205.80
4-inch:	$304.87
6-inch:	$533.56
8-inch:	$731.75

Inside Connection Fees – Standard	
3/4-inch:	$1,000
1-inch:	$1,200
1.5-inch:	$1,625
Inside Connection Fees – Partial	
3/4-inch:	$150
1-inch:	$275
1.5-inch:	$550
Outside Connection Fees – Standard	
3/4-inch:	$1,025
1-inch:	$1,225
1.5-inch:	$1,650
Outside Connection Fees – Partial	
3/4-inch:	$200
1-inch:	$325
1.5-inch:	$650
Pumping Surcharge	
(based on hundred cubic feet)	
0-300:	$0.851 each customer
301-400:	$0.683
401-500:	$0.588
501-600:	$0.504
601-700:	$0.420
701-800:	$0.378
801-900:	$0.347
901-1000:	$0.305
1001-1100:	$0.263
1101-1200:	$0.236
1201-2500:	$0.232
2501-3000:	$0.224
3001-3500:	$0.219
3501-4000:	$0.204
4001-4500:	$0.190
4501-5000:	$0.182
5001-5500:	$0.173
5501-6000:	$0.169
6001-6500:	$0.161
6501-7000:	$0.155
7001-7500:	$0.151
7501-8000:	$0.144
Above 8000:	$0.144
Meadowood Maintenance Surcharge	
Per Residential Unit:	$26.25
Meadowood Complex:	$2,625.00

* A hundred cubic feet (hcf) is equivalent to 748 gallons.

FINANCIAL

St. Helena's Water Enterprise Fund has an approved operating budget for 2002-2003 of $2,841,528. The fund is comprised of seven components: capital improvements, distribution, administration, water sources, treatment, debt services, and the Stonebridge Well. Primary expenses include employee payroll, capital improvements, utilities, and treatment and distribution supplies. The City's anticipated revenue for 2002-2003 is $2,256,365. Revenue sources include water sales, investment earnings, and operating transfers. The City maintains an informal reserve policy establishing an operating reserve equal to 15% of annual expenditures along with rate stabilization and capital replacement reserves that are collectively capped at $900,000 per year. As of July 2002, the City's Water Enterprise Fund's cash reserve balance was $2,203,122.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating St. Helena's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[98] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of St. Helena's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its local water supplies, the City of St. Helena has an adequate supply of water to meet existing and projected water demands under normal conditions within the timeframe of this study.

2. The City of St. Helena requires additional water supplies to meet existing and projected water demands during periods of consecutive dry years and critically dry years.

3. The City of St. Helena should continue to pursue opportunities to increase and enhance its available water supply while reducing system demands by expanding its conservation efforts. These efforts will help to ensure an adequate supply of water during periods of below normal and dry year conditions.

4. The City of St. Helena's water supply is dependent on local surface and groundwater supplies. To enhance its available supply, St. Helena should continue to explore opportunities to arrange for the delivery of its recent purchase of State Water Project entitlement. The addition of State Water Project entitlements would help St. Helena conserve and maximize its local water resources and provide greater flexibility in meeting future water demands.

[98] LAFCO Resolution No. 04-04, adopted February 26, 2004.

5. The City of St. Helena relies on groundwater to help meet existing and projected water demands within its service area. Although this source has proven reliable, there is limited information relating to the long-term ability of the affected groundwater basin to sustain demands as well as the impact on adjacent users. An objective evaluation is needed to determine reasonable production capacities for the affected groundwater basin to protect against overdraft and to preserve its long-term beneficial use.

6. The City of St. Helena recently approved a study to evaluate the feasibility of constructing a water treatment facility for use at Lower Reservoir in order to convert its water right to York Creek into an additional potable water supply source. If implemented, this conversion will help St. Helena address its existing water supply deficits during below normal and dry year conditions and may diminish the City's need to use groundwater to meet future system demands.

   Water drawn from York Creek is currently stored at the Lower Reservoir and has historically been used as a raw water source for local landscaping purposes.

7. The City of St. Helena should work with the City of Napa to renew its emergency agreement for potable water supplies. Renewal of this agreement would help protect St. Helena against future water shortages – in the event either of its water treatment facilities become impaired – without depleting its stored reserves.

8. The City of St. Helena has adequate treatment capacity to independently meet existing and projected maximum day water demands within the timeframe of this study.

   St. Helena's maximum day demand in 2002 was 3.73 million gallons, while its two water treatment facilities collectively provide a daily treatment capacity of 4.24 million gallons. This treatment capacity will enable St. Helena to independently meet projected maximum day water demands of 4.22 million gallons in 2010.

9. The City of St. Helena has adequate treated water storage capacity to independently meet existing and projected maximum day water demands within the timeframe of this study. This capacity will help to ensure adequate reserves are available during an emergency or interruption in service.

   St. Helena's maximum day demand in 2002 was 3.73 million gallons, while its existing treated water storage facilities provide a total storage capacity of 4.31 million gallons. This treated water storage capacity will enable St. Helena to independently meet projected maximum day water demands of 4.22 million gallons in 2010.

10. The City of St. Helena requires improvements to its distribution system to account for the significant disparity between recent water production and actual water demand within its service area.

    In 2002, St. Helena produced approximately 2,291 acre-feet of potable water, while delivering approximately 1,956 acre-feet to its metered service connections. This disparity accounts for approximately 335 acre-feet of unaccounted water.

11. The City of St. Helena is scheduled to begin providing reclaimed water service in 2005. The use of reclaimed water within St. Helena's service area is an important component in strengthening its water conservation efforts and should alleviate future potable water demands among agricultural and landscape customers.

    St. Helena's reclamation project is planned to be implemented over three construction phases and will consist of tertiary recycled water produced and distributed from its wastewater treatment plant. Aggregately, St. Helena anticipates implementation of this program resulting in the annual savings of approximately 1,000 acre-feet of potable water; potable water conserved by reclamation will then be available and added to the City's potable water supply.

12. Reclamation is a beneficial and efficient use of existing water resources and will provide credence to the City of St. Helena's water conservation efforts.

13. Evaluation of the City of St. Helena's reclamation program and its actual impact on potable water demands should be included in future studies.

Growth and Population Projections:

1. The City of St. Helena evaluates its water service capacities using reasonable demand projections detailed in its *Urban Water Management Plan (2003)*.

2. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by the City of St. Helena's water service system. The population served by St. Helena's water system based on this calculation method is 8,111.

Financing Constraints and Opportunities:

1. The City of St. Helena is scheduled to begin providing reclaimed water service to existing potable water customers within the next several years. Reclamation will offer agricultural and landscape customers a suitable water source at an alternative rate, while reducing the draw upon St. Helena's overall supply of potable water.

2. As the City of St. Helena begins to develop reclaimed water service within its service area, future studies should evaluate the financial impact diminished potable water sale revenues has on the City's water service operations.

3. The City of St. Helena has been successful in supplementing its capital reserves with outside financing to help cover the costs of implementing needed capital improvements.

Cost Avoidance Opportunities:

1. The City of St. Helena is a member of the Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Watrtac." This committee provides NCFCWCD with a consensus among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory committee provides St. Helena the opportunity to share costs with other participating agencies on projects of mutual interest and facilitates the exchange of service information.

2. The City of St. Helena is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." The study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050. St. Helena will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. The City of St. Helena has made a concerted effort to maintain low water rates by limiting operational and capital expenditures and relying on outside financing to help fund improvement projects. As a result, St. Helena's water rates, which were last increased in 2001, remain significantly lower than the rates offered by other public water agencies in Napa County.

2. It is anticipated that the City of St. Helena will increase its water service rates within the next year to support increased operational and maintenance costs and help fund needed capital improvement projects. This rate increase may be followed by an additional tiered increase based on the recommendations of a rate study scheduled to begin in 2004. Notably, this rate study will examine revenue requirements for St. Helena to help cover costs associated with its comprehensive reclamation project. Future studies should examine the relationship between these anticipated increases in water rates with St. Helena's ability to encourage water conservation while generating sufficient revenues to meet cost of service.

3. Tiered increases to the City of St. Helena's water rate schedule is a fair and equitable approach to passing increases in cost to the customer while maintaining the solvency of its water system operations.

Opportunities for Shared Facilities:

1. The City of St. Helena should explore opportunities to share costs with the Cities of Calistoga and Napa to allow the City to take delivery of its recently purchased annual entitlement to the State Water Project through these agencies' existing facilities. Specifically, this evaluation should examine system requirements and costs needed to improve Calistoga and Napa's existing treatment and conveyance facilities in order for St. Helena to take delivery of its State Water Project entitlement while addressing existing and future service needs of the other two agencies. This arrangement would enable all three agencies to share in the costs of mutually beneficial improvements to their respective water systems and would eliminate the need for St. Helena to develop new and duplicative infrastructure.

   Though an existing service agreement, Napa treats and conveys Calistoga's annual allocation of State Water Project entitlement through an interconnection between the two agencies distribution systems located south of St. Helena. In exchange, Calistoga reimburses Napa for the capital and delivery costs association with its water system in proportion to the amount of water delivered. Improvements to both agencies facilities are needed to increase system capacity in order for Calistoga to receive its full allocation of entitlement.

Government Structure Options:

1. The City of St. Helena is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of St. Helena: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. Because the City of St. Helena's adopted jurisdictional and sphere of influence boundaries are conterminous except for the "Howell Mountain Road area" and the lower portion of Bell Canyon Reservoir, and based on its existing water supply deficits during periods of below normal and dry years conditions, it is not anticipated that the City will pursue a change in its organization within the timeframe of this study. However, in the event a change in organization is proposed, St. Helena would need to address its ability to provide water service to the subject territory without adversely impacting the service levels of existing customers.

Evaluation of Management Efficiencies:

1. The City of St. Helena provides an annual summary of past and projected revenues and expenditures for its water service operations as part of its annual budget. The budget is adopted following internal reviews and several public study sessions in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to enhancing the accountability of elected and appointed officials, St. Helena's budget process provides a clear directive towards staff with respect to prioritizing city resources and helps to educate its constituents with respect to funding public services.

2. The City of St. Helena has sufficient capital reserves to finance necessary upgrades and improvements to its water system; reserves are generated from surplus revenue drawn from water sales and availability charges. Applying surplus revenue from these sources is a fair and equitable approach to passing capital expenditures to ratepayers without incurring or relying on loans, special assessments, or bonded indebtedness to fund needed improvements.

3. The City of St. Helena's recently adopted capital improvement project, which includes 18.9 million dollars for projects aimed at upgrading and improving its water service operations through 2010, was prepared by staff and demonstrates a reasonable effort on behalf of management to address and update water quality and service objectives in a timely and efficient manner.

   Notable expenditures includes the construction of the first two phases of St. Helena's comprehensive reclaimed water service project (9.6 million) and a water treatment plant at Lower Reservoir (1.0 million).

4. The City of St. Helena requires an update to its *Master Water Plan (1987)* to account for recent augmentations to its water service operations. An updated master water plan would help provide clarity to St. Helena's water services and facilities and improve its long-term planning by coordinating future service requirements with the City's most recently adopted general plan.

Local Accountability and Governance:

1. The City of St. Helena City Council meetings are conducted twice a month and are open to the public. Public inquiries involving water service operations can be addressed to the Council at this time. Regularly scheduled council meetings provide an opportunity for St. Helena's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The City of St. Helena makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

   These efforts include inserting news inserts with billing information and posting pertinent service information on its website, including St. Helena's Urban Water Management Plan (2003) and its most recent "water quality report." Customers can visit or call St. Helena's administration office during regular business hours to discuss questions involving their water bill or speak with water operations personnel regarding service conditions. In addition, designated personnel are on call 24 hours a day to respond to water service related emergencies.

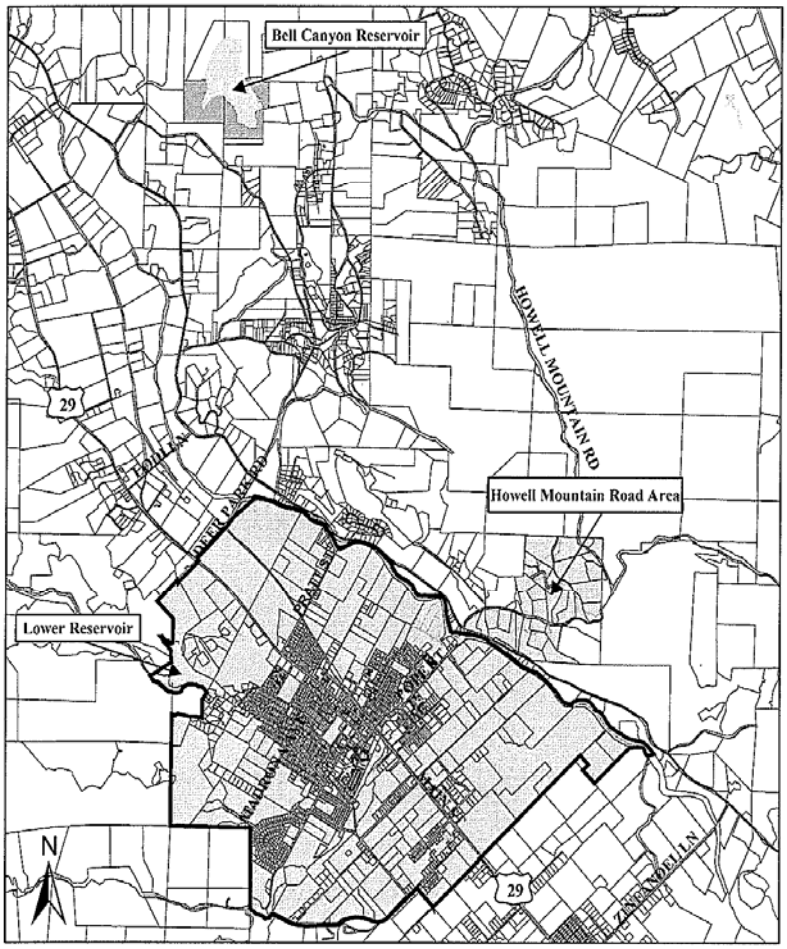
3. The City of St. Helena has an adopted multi-phased water shortage contingency plan designed to reduce system demands based on storage levels at Bell Canyon Reservoir. The contingency plan is comprised of voluntary and mandatory measures aimed at helping St. Helena maximize and conserve its local water resources during periods of below normal and dry year conditions when supplies are limited. This plan strengthens St. Helena's accountability to the public by reminding its constituents of the importance of water conservation and provides clear directives toward staff with respect to managing supplies during water shortages.

4. The City of St. Helena currently provides water service to approximately 355 connections outside its jurisdictional boundary. Although St. Helena no longer approves new connections or water main extensions for outside users, the City should continue to include the service demands of these users in their water supply analysis.

5. The City of St. Helena is the only municipality in Napa County that uses groundwater as part of its water supply. The County of Napa has an adopted policy that promotes the preservation of groundwater supplies for agricultural use while discouraging the use of groundwater for urban purposes. Although it is not subject to this policy, St. Helena should evaluate its continued use of groundwater in comparison to developing new surface water supplies to meet existing and future system demands. This evaluation, which should be based on documented analysis, will provide greater context to St. Helena's decision making process and improve its regional accountability.

6. The City of St. Helena's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

City of St. Helena



LEGEND

City of St. Helena

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

TOWN OF YOUNTVILLE

OVERVIEW

In 1831, George C. Yount, a frontiersman from North Carolina, arrived in the Napa Valley and became one of the first United States citizens to settle in the Mexican held territory. In 1855, Yount hired a land surveyor to plan and develop a small residential community catering to farmers and ranchers. Originally know as "Sebastopol," the community was renamed Yountville following Yount's death in 1875. The development of the community of Yountville was prompted and sustained by the success of agriculture (orchards) as well as the extension of the Napa Valley Railroad Company. The arrival of the railroad marked a new period of growth and prosperity in the Napa Valley. This period also coincided with the arrival of migrants from European, leading to the emergence of viniculture as the region's primary commerce.

In 1884, the federal government constructed a long-term care facility for elderly and disabled military veterans at the western edge of town (facility was turned over to the State of California in 1897). To provide water service to the facility, the "Veterans Home" developed a small on-sight reservoir consisting of diverted water drawn from nearby Dry Creek. By the 1940s, however, system demands for the Veterans Home necessitated a larger and more reliable water source. In 1946, the California Department of Public Works, Water Resources Division completed construction on Rector Dam, allowing the Veterans Home to begin diverting and storing water from Rector Creek, a tributary of the Napa River.

Concurrently, steady growth within the remaining portions of the community of Yountville necessitated the development of a public water system; groundwater had been the primary water source available to locals. In 1950, the Yountville County Water District (YCWD) was formed and subsequently issued general obligation bonds to construct the community's first public water system. To supply and operate the system, YCWD reached agreement with the City of Napa. This agreement allowed the District to connect to Napa's Conn Line (Lake Hennessey) and for Napa to assume operation and maintenance of the District's water distribution system.

In 1965, the community incorporated as the City of Yountville, which included the merger of YCWD and the Yountville Sanitation District.[99] In 1966, Yountville adopted its first general plan. The 1966 General Plan included land-use policies designed to transition Yountville from an agricultural community to small town consisting of neighborhoods and assorted commercial developments. As part of its planning component, the general plan anticipated a resident population of 30,000 by 1985.

[99] Yountville's incorporation included the merger of the Yountville Sanitation District (previous sewage collection and treatment provider for area).

In 1967, Yountville entered into a water supply agreement with the State of California Department of Veterans Affairs for an annual entitlement of water drawn from Rector Reservoir. The original agreement provided the Town with the right to purchase up to 240 acre-feet of potable water, with deliveries commencing through an interconnection with the State's distribution system near the intersection of Yountville Cross Road and Silverado Trail. The agreement was extended through 1977 and was replaced with a second agreement increasing the Town's annual entitlement to 325 acre-feet.[100]

By the early 1970s, a rejuvenated interest in wine making facilitated a surge in growth throughout the Napa Valley. In 1973, alarmed by a sudden increase in development, Yountville conducted a series of public workshops to revise land-use policies consistent with public interest. As a result, the Town adopted a new general plan in 1975 limiting development within existing town boundaries while maintaining its small town character. The revised general plan anticipated that the Town's resident population would not exceed 3,420 by 2000.

In 1982, to supplement water supplies drawn from Rector Reservoir, Yountville entered into a water supply agreement with the Napa County Flood Control and Water Conservation District (NCFCWCD). The original agreement provided the Town with an annual entitlement of water drawn from the State Water Project (SWP) through 2035 with gradual increases until reaching a maximum annual entitlement of 500 acre-feet by 1990. The agreement was amended later that year as part of a statewide program by the Department of Water Resources to encourage SWP contractors to implement water conservation programs. The amendment increased the Town's short-term entitlement while regressing Yountville's maximum annual entitlement to 1998. The amended agreement requires the Town to have a water conservation plan with the specific goal of conserving 30 acre-feet of annual SWP water by 2010.

To facilitate access to its newfound water supply, Yountville reached agreement with the City of Napa to treat and convey its SWP entitlement though an interconnection between the two municipalities' distribution systems. In exchange, Napa is reimbursed for the capital costs associated with the construction, operation, and maintenance of the Jameson Canyon Water Treatment Plant on a proportionate level to the amount of Yountville's maximum annual entitlement. Napa is also reimbursed for the delivery costs associated with the construction, operation, and maintenance of its distribution systems (Conn and Jameson Lines). Significantly, since Napa's water sources are commingled, Yountville's SWP entitlement is essentially turned over to Napa in exchange for an equal amount of potable water from one of Napa's three sources: SWP, Lake Hennessey, and Milliken Reservoir. Yountville's distribution system is connected to Napa's 36-inch Conn Line at three separate delivery points off of State Highway 29.

[100] Since 1998, Yountville has operated under the provisions of one-year contract extensions with the State of California, Department of Veterans Affairs, for entitlement to Rector Reservoir. Negotiations for a long-term water supply agreement are pending the outcome of a state study identifying project water demands for the Veterans Home, Department of Fish and Game, Napa State Hospital, as well as environmental requirements.

By the 1990s, increased system demands from development projects coupled with lingering effects from the 1987-1992 drought had severely taxed Yountville's available water supply. In April 1998, to abate water outages, Yountville's Town Council adopted Ordinance No. 280-98, declaring a water shortage emergency and prohibiting new water connections as well as the expansion of existing water connections. Following several extensions, the Town Council adopted Ordinance No. 300-00, specifying restrictions of new water connections to single-family and duplex (two units) residences on existing lots of record. The ordinance mandates that expansions or conversions of existing non-residential uses require a review process prior to approval. This review process requires an applicant to submit a development application with the Town describing the proposed alteration to the existing water connection. Upon receipt of the application, the Town uses historical information to determine the anticipated water demand for proposed project. In order to be approved, the proposed expansion or conversion cannot increase the Town's existing water demand.[101]

At the end of 1998, Yountville issued its first water supply plan. The study was conducted by an outside consultant and calculated the Town's existing and projected water demands based on current and planned land uses. Assuming that a future agreement with the Veterans Home would secure an annual entitlement of 500 acre-feet, the study concluded the Town had an existing water deficit under below normal and dry year conditions of 113 acre-feet and 224 acre-feet respectively. Moreover, these deficits would increase under maximum buildout to 238 acre-feet and 334 acre-feet as identified in the Town's 1992 General Plan. In addition, the study noted that the Town's yield estimates for Rector Reservoir did not take into account potential loss of storage capacity due to sedimentation or the possibility of the Department of Fish and Game requiring water.

In 2000, to further alleviate system demands and mitigate water deficits, Yountville increased its SWP entitlement 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 water transfer agreement provided the terms and conditions for NCFCWCD to permanently purchase 4,025 acre-feet of annual SWP entitlement from KCWA. Costs are proportionally shared by each city in proportion to the amount of water allocated. Yountville's share of the Kern County transfer is 600 acre-feet.

Following the Kern County water transfer, Yountville reached a water transfer agreement with the City of American. The agreement (once effective) permanently transfers 250 acre-feet of American Canyon's SWP entitlement to Yountville. In exchange, Yountville agreed to assume all responsibilities of entitlement and compensate American Canyon $275,000. Yountville also agreed to reimburse Vallejo $57,000 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 water from Vallejo under the terms and conditions of an earlier agreement made between those agencies. Finally, Yountville agreed to relinquish to American Canyon its rights to any

[101] Criteria requirements detailed in Town Resolution No. 1755-00.

additional capacity made to the North Bay Aqueduct (NBA). However, this agreement does not become effective until specified conditions are satisfied, including the certification of adequate CEQA documents. To this end, an interim agreement was reached allowing Yountville to annually receive 250 acre-feet water transfer until the permanent agreement becomes effective. As of March 2003, Yountville has not required the use of the interim agreement, but remains available for drought protection.

In 2001, Yountville reached an interim agreement with the State of California's Department of Veterans Affairs for the continuation of potable water deliveries drawn from Rector Reservoir. The interim agreement provides the Town with 325 acre-feet of potable water (treated by the State at the Rector Water Treatment Plant) through 2003. The interim agreement also permits the Town to purchase additional water exceeding 325 acre-feet under the same payment conditions when surplus water is available.[102] However, the Town's entitlement rights to Rector Reservoir are surpassed by the water rights of the Veterans Home, Department of Fish and Game, and the Department of Mental Health (Napa State Hospital). Accordingly, the Town is beholden to the availability of surplus water after the Department of Veterans Affairs meets the needs of the aforementioned state entities. In the interim, the Department of Veterans Affairs has agreed to study the feasibility of entering into a long-term water supply contract with Yountville.

In 2002, Yountville's Town Council adopted a five-year capital improvement program that included several projects aimed at improving the Town's water system. In sum, the five-year capital improvement program identified seven water system projects at an estimated cost of $1,384,000. In addition to several water line and lateral replacement projects, the Town has budgeted $1,000,000 in capital improvement funds to improve its water supply. These projects include improving pipeline capacity and treatment plant upgrades to the City of Napa's water system as well as constructing treated water storage facilities. To finance the proposed improvements, the Town Council adopted a 5% increase in water rates as of January 2003.

In addition to providing potable water service, Yountville operates a reclaimed water service program. Initiated in 1979, the intent of the Town's reclamation program is to reduce storage requirements for treated wastewater when discharge to the Napa River is prohibited by the San Francisco Bay Regional Water Quality Control Board. Discharge is currently prohibited between May and October. The Town provides advanced secondary treated reclaimed water for irrigation and landscaping uses to four customers: Chimney Rock Golf Course, Vinter Golf Course, Clos Du Val, and Stags Leap. In 2002-2003, the Town produced and delivered approximately 65 million gallons (200 acre-feet) of reclaimed water. Usage charges are applied to reclaimed water customers to help cover the cost of reclamation facilities at the Yountville/Veterans Home Wastewater Treatment Facility. Current charges for reclaimed water are approximately $73 per acre-

[102] As part of the water supply agreement with the Department of Veterans Affairs, Yountville is required to only pay for the actual amount of potable water delivered. The monthly payment is based on each acre-foot delivered and is calculated to sufficiently cover the annual costs associated with the operation and maintenance of Rector Reservoir and the Rector Water Treatment Facility.

foot. The Town does not anticipate increasing the level of reclaimed treatment to tertiary (unrestricted) due to the prohibitive costs associated with current reclamation services.

GOVERANCE

Yountville was incorporated in 1965 as a general-law city. The Town's governing body is comprised of a four-member town council and a directly elected mayor. Elections are conducted by general vote; the mayor serves a two-year term while the four town councilmembers serve staggered four-year terms. A town administrator is appointed to oversee and implement policies on behalf of Yountville's governing body and to administer the Town's five departments: community services, finance, planning, public works, and wastewater treatment. In 1992, Yountville's Town Council adopted a general plan that outlines land use and development policies. The Town is currently in the process of updating the 1992 General Plan. Yountville's Town Council meetings are conducted on the first and third Tuesdays of each month at the Town Hall Council Chambers. Meetings are open to the public.

OPERATIONS

Yountville's water system is maintained and operated by the Town's Public Works Department. The Town does not have a public works director; Yountville's Town Administrator appoints a public works supervisor to oversee and manage the water system. Designated staff is on call 24 hours a day, 7 days a week, to respond to any reported emergencies. As of March 2003, the Town's water system operations consisted of two designated public works' employees.

ADOPTED BOUNDARIES

Yountville's incorporated boundary is comprised of one contiguous area consisting of 934 acres. Yountville's adopted sphere of influence is conterminous with its incorporated boundary. Although the Town no longer permits outside connections, its water service area extends outside its incorporated boundary to include several properties located near the intersection of Yountville Cross Road and Silverado Trail. Land use designations for Yountville are defined in the Town's General Plan.

Yountville – Adopted Boundaries	
Incorporated Boundary:	934 acres *****
Sphere of Influence Boundary:	934 acres *****

* Figures are approximations calculated using information generated by LAFCO and Napa County's geographic information systems.

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[103]. Water provided by Rector Reservoir is generated from Rector Creek, a tributary of the Napa River. 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 1998 Water Supply Plan states that the Veterans Home's water rights to Rector Creek are secured through a license with the State Water Resources Control Board, Division of Water Rights. This license authorizes the Veterans Home to divert and store up to 1,937 acre-feet of water annually from Rector Creek for beneficial uses. The Town's entitlement rights to Rector Reservoir, however, are surpassed by the water rights of the Veterans Home, Department of Fish and Game, and the Department of Mental Health (Napa State Hospital). In 2001, Yountville entered into a one-year interim water supply agreement with the Department of Veterans Affairs for 325 acre-feet of potable water generated from Rector Reservoir and treated at the Rector Water Treatment Plant. Extended through 2003, the interim agreement enables the Town to continue to purchase additional water if surpluses exist.[104]

Yountville's water supply drawn from the SWP is secured through a 1982 water supply agreement with NCFCWCD. 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 NCFCWCD and 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. 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.

Yountville also maintains an interim agreement with the City of American Canyon for the annual transfer of 250 acre-feet of American Canyon's SWP entitlement. Executed in 2000, the interim agreement is in lieu of an earlier agreement made between both agencies. This earlier agreement provides for the permanent transfer of 250 acre-feet of American Canyon's SWP entitlement to Yountville. The agreement, however, does not become effective until specified conditions are satisfied, including the certification of adequate CEQA documents. As of March 2003, Yountville has not required the use of the interim agreement, but remains available for drought protection.

[103] The Rector Water Treatment Plant was recently upgraded and has a daily treatment capacity of 4.5 million gallons. The plant responds to storage levels in a nearby 1.0 million gallon treated water storage tank.

[104] In 2001-2002, Yountville purchased 418 acre-feet from the Veterans Home.

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.

As noted, Yountville has historically relied on water drawn from Rector Reservoir to meet the majority of its system demands. However, due to a recent spill at Rector Reservoir, water supplied by Rector has transmitted sand into the Town's distribution system. In addition, water drawn from Rector Reservoir is susceptible to high levels of turbidity stemming from watershed erosion causing the water treatment plant to periodically shut down.[105]

Yountville – Available Water Supply (acre-feet)		
Year	**Rector Reservoir ***	**State Water Project ****
2003	325	1,100
2004	325	1,100
2005	325	1,100
2006	325	1,100
2007	325	1,100
2008	325	1,100

* Yountville's interim water supply agreement with the California Department of Veterans Affairs is due to expire on October 1, 2003. It is anticipated that an extension agreement will be reached prior to the aforementioned expiration date, providing at minimum the current level of entitlement.

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

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.[106]

[105] Operations at Rector WTP were forced to shut down between December 16, 2002 and January 13, 2003 due to high levels of turbidity caused by a winter storm.

[106] In 1998, Yountville's Town Council adopted Ordinance No. 300-00, restricting water connections to single and multi-family residential projects on existing lots of record.

Yountville – 2001-2002 Water Demand	
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 **

* Title 22 of the California Code of Regulations requires that sufficient water be available from the water sources and distribution reservoirs to adequately and dependably meet the requirements of all users under maximum demand conditions.

****** Calculated in accordance with Title 22 of the California Code of Regulations §64412(a)(2). Estimate based on the total number of service connections multiplied by a service factor or 3.3.

Projected water demands for Yountville were identified in the Town's *Water Supply Plan (1998)*. The study identified existing and projected water demands for Yountville under two planning alternatives at buildout: expected development and maximum development.[107] Demands were based on current and planned land uses defined in the Town's General Plan and then calculated under three hydrological conditions: normal, below normal, and dry year. [108]

Yountville – Projected Water Demands (acre-feet)*			
Type	**Normal Year**	**Below-Normal Year**	**Dry Year**
Maximum Development	774	698	619

* Projected demands were modified to reflect a 30 acre-feet reduction in demand due to the implementation of a water conservation program (in accordance with its water supply contract with Napa County Flood Control and Water Conservation District). In addition, analysis assumed adoption of a conservation program to reduce demand 10% and 20% during below normal and dry years (this conservation program was subsequently adopted by the Town Council).

WATER TREATMENT 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.

[107] Buildout is anticipated for 2020.

[108] Hydrologic conditions in the study were defined in percentages as to reliability levels of supply delivery: normal year, 60%; below year, 90%; and dry year, 95%.

DISTRIBUTION AND STORAGE FACILITIES

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 underlays 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. Potable water drawn from the Veterans Home is delivered through three separate interconnections with the State's distribution system. These connections are located near the intersections of Yountville Cross Road and Silverado Trail, Yountville Cross Road and Finnell Road, and California Drive and Washington Street. Potable water drawn from Napa is delivered through three interconnections with the City's 36-inch Conn Line, which underlays State Highway 29 in Yountville. These interconnections are located near the intersections of California Drive and Washington Street, Mulberry Street and Washington Street, and Webber Street and Washington Street.

RATE SCHEDULE

Yountville's water customers are charged two bimonthly fees for water service: a tiered usage charge and a fixed service charge. The usage charge is divided between inside and outside town customers as well as customer class. The usage charge is based on the amount of water delivered and is measured in quantities of 1,000 gallon units. The service charge is also divided between inside and outside town customers and is based on meter size. In addition, the Town collects a connection fee for initiating water service. Connection fees are divided between residential and non-residential customer classes. Residential customers are charged a flat fee while non-residential customers are charged a rate based on the estimated potential water demand for their meter type in relation to the average water use of a single-family residence. For example, a commercial structure with a 3-inch meter will pay a connection fee of $17,680 (10.67 x $1,657).

Yountville – Rate Schedule	
Inside Usage Fees	
Single-Family Residential:	$1.26 for 1 to 5 units $1.88 for 6 to 42 units $2.26 for 43 to 100 units $3.39 for 101 units and above
Multi-Family Residential: (per dwelling unit)	$1.26 for 1 to 2 units $1.88 for 3 to 14 units $2.26 for 15 to 33 units $3.39 for 33 units and above
Commercial:	$1.75 for all usage
Industrial:	$2.03 for 1 to 100 units $4.04 for 101 units and above

Outside Usage Fees	
Residential:	$2.52 for 1 to 5 units $3.76 for 6 to 42 units $5.65 for 43 to 100 units $8.46 for 101 units and above
Industrial:	$4.04 for 1 to 100 units $8.09 for 101 units and above
Inside Service Fees	
.75-inch:	$16.99
1-inch:	$26.05
1.5-inch:	$52.52
2-inch:	$78.50
3-inch:	$164.42
4-inch:	$255.90
6-inch:	$509.88
8-inch:	$814.80
Outside Service Fees	
.75-inch:	$33.98
1-inch:	$54.40
1.5-inch:	$105.02
2-inch:	$161.15
3-inch:	$328.83
4-inch:	$511.78
6-inch:	$1,019.75
8-inch:	$1,629.60
Water Connection Fees	
Single-Family Residential:	$1,657
Multi-Family Residential:	$1,160 (each dwelling unit)
Other – .75-inch:	1.00
Other – 1-inch:	1.67
Other – 1.5-inch:	3.33
Other – 2-inch:	5.33
Other – 3-inch:	10.67
Other – 4-inch:	16.67
Other – 6-inch:	33.33
Other – 8-inch:	53.33

Note: one unit equals 1,000 gallons.

FINANCIAL

Yountville's Water Enterprise Fund has an approved operating budget for 2002-2003 of $527,280. Primary expenses include water purchases[109], employee payroll, and capital improvements. The Town's anticipated revenue for 2002-2003 is $454,085[110]. Revenue sources include residential and commercial water sales. As of June 2002, the Town's Water Enterprise Fund's capital reserve balance was $222,647.

[109] Yountville currently is charged $385 per acre-foot of potable water purchased from the Veterans Home and $459 per acre-foot for potable water purchased from the City of Napa.

[110] Yountville anticipates subsidizing its Water Enterprise fund in 2002-2003 by transferring $175,000 from the Town's General Fund.

WRITTEN DETERMINATIONS

In anticipation of reviewing and updating Yountville's sphere of influence, and based on the above-mentioned information, the following written determinations were adopted by the Commission to fulfill the requirements of California Government Code §56430.[111] When warranted, some determinations include supplemental information listed in italics to provide context to the underlying service factor. A review of Yountville's sphere of influence will be included as part of a future study.

Infrastructure Needs or Deficiencies:

1. Through its contractual agreements, the Town of Yountville imports an adequate supply of water to meet existing and future system demands under normal conditions within the timeframe of this study.

2. The Town of Yountville should continue to pursue opportunities to increase its available water supply and continue to expand its water conservation efforts. These actions will help to ensure an adequate water supply during periods of below normal and dry year conditions.

3. The Town of Yountville's water supply is dependent on contracted entitlements with the Napa County Flood Control and Water Conservation District and the State of California's Department of Veterans Affairs. These contractual entitlements are essential to Yountville's ability to deliver potable water to its customers.

4. To account for the realities of water entitlements, the Town of Yountville should continue to objectively differentiate between entitlements and actual deliveries in their water supply analysis. This is especially important to ensure an adequate supply of water during extended drought periods when deliveries are restricted.

5. In 2003, the Department of Water Resources issued the *State Water Project Delivery Reliability Report*. The report provides an assessment of SWP deliveries using historical precipitation rates along with projected land and water use demands through 2021, including delivery estimates during drought periods. This report is a valuable tool for all SWP contractors and should be incorporated into Yountville's water supply planning efforts.

6. The Town of Yountville has made reasonable efforts to secure additional water supplies to meet existing and projected water demands within its service area. This demonstrates a continued effort by Yountville to address system needs and deficiencies in a timely manner.

[111] LAFCO Resolution No. 03-28, adopted October 11, 2003.

Recent examples include Yountville's 2000 water supply agreement with the City of American Canyon and its participation in Napa County Flood Control and Water Conservation District's 2000 water transfer agreement with the Kern County Water Agency. In addition, Yountville maintains a 1991 emergency water supply agreement with Domaine Chandon to access the winery's groundwater supply during a declared water shortage.

7. The Town of Yountville's water supply agreement with the State of California's Department of Veterans Affairs for annual entitlements drawn from Rector Reservoir is due to expire on October 1, 2003. The execution of a long-term water entitlement agreement with the Department of Veterans Affairs is essential to Yountville's ability to properly plan for projected water demands.

   Negotiations for a long-term water supply agreement are pending the results of a capacity study being conducted by the Department of Veterans Affairs. The study was prompted by a determination by the Department of Fish and Game that releases from Rector Dam must be sufficient to meet the needs of downstream fish populations.

8. The Town of Yountville currently has a moratorium on new water connections and the expansion of existing water connections except for single-family and multi-family (two-unit) projects on lots of existing records. This moratorium is scheduled to remain in effect until concerns involving the long-term reliability of its contracted water supply at Rector Reservoir and capacity restrictions involving the North Bay Aqueduct are addressed. To satisfy these concerns in a timely manner, Yountville should continue to work closely with the State of California's Department of Veteran Affairs, Napa County Flood Control and Water Conservation District, and the City of Napa.

9. The Town of Yountville does not own or operate its own water treatment facility. Yountville must rely on the treatment facilities of the State of California's Department of Veterans Affairs and the City of Napa to provide treatment for its contracted water supply. Yountville should continue to work closely with these agencies with respect to operational constraints to ensure the timely availability of potable water supplies.

10. The Town of Yountville does not have a treated water storage facility. Yountville must rely on treated storage supplies from the City of Napa and the State of California's Department of Veterans Affairs during peak system demand periods. Yountville should invest in its own treated water storage facility to ensure the availability of treated supplies during an emergency or interruption in service. The storage facility's capacity should be sufficient to meet Yountville's maximum day demand.

Yountville is currently studying the feasibility of developing a municipal storage system within a local aquifer. When available, surface flows would be stored in the affected aquifer and recovered through a municipal well during below normal and dry year conditions.

11. The Town of Yountville and the State of California's Department of Veterans Affairs jointly own and operate the Yountville/Veterans Home Joint Wastewater Treatment Facility. This plant provides advanced secondary treatment to wastewater for discharge and reclamation uses with Yountville's water service area. In order to offer the greatest range of reclamation uses within its service area, Yountville should explore opportunities aimed at expanding its reclamation program to include tertiary-level treatment.

12. Reclamation is a beneficial and efficient use of existing water resources and provides credence to the Town of Yountville's water conservation efforts.

Growth and Population Projections:

1. The Town of Yountville evaluates its water service capacities using reasonable demand projections detailed in its *Water Supply Plan (1998).*

   Yountville will be conducting an update to its Water Supply Plan in 2004.

2. The calculation formula codified in Title 22 of the California Code of Regulations §64412(a)(2) is an appropriate method in estimating the total population served by the Town of Yountville's water service system. The population served by Yountville's water system based on this calculation method is 2,356.

Financing Constraints and Opportunities:

1. The Town of Yountville currently has a moratorium on new water connections and the expansion of existing water connections except for single-family and multi-family (two-unit) projects on lots of existing records. Once this moratorium is rescinded, Yountville should benefit from an increase in revenues generated from connection fees and additional usage charges.

2. The Town of Yountville's contracted water supply is subject to rate changes imposed by the supplier (exporter), resulting in potential increases in costs to the Town. Similarly, Yountville's ability to supplement its contracted water supply in dry years through water supply programs facilitated by the Department of Water Resources and/or open market purchases are also liable to increase costs. Typically, these increases in operation costs are passed on directly to the customer through rate increases. The extent of these costs and impact on the rates paid by customers, however, remain difficult to measure due to the uncertainty involving water markets.

Cost Avoidance Opportunities:

1. The Town of Yountville is a member of Napa County Flood Control and Water Conservation District's technical advisory committee, known as "Watrtac." This group provides NCFCWCD with a consensus among the five cities and County as it relates to current and future water issues affecting Napa County. This advisory group provides Yountville the opportunity to share costs with other participating agencies on projects of mutual interest and facilitates the exchange of service information.

2. The Town of Yountville is a funding participant in Napa County Flood Control and Water Conservation District's "2050 Study." This study's objective is to identify current and projected water demands within each participating agency's service area as well as document agricultural demands in unincorporated areas served by groundwater. This study will also examine the feasibility of pursuing cooperative water supply projects aimed at meeting countywide demands through 2050. Yountville will benefit from the study and should continually explore collaborative opportunities aimed at identifying new and improved water supplies.

Opportunities for Rate Restructuring:

1. In 2002, the Town of Yountville's Town Council adopted a 5% increase to its water service rates. The rate increase was adopted to meet increased operational costs and to lessen the future demand for subsidies drawn from Yountville's General Fund, which are used to cover operating losses in its water enterprise fund. This practice enables Yountville to keep its water rates significantly lower than the rates offered by American Canyon, Calistoga, and Napa.

2. The Town of Yountville should consider increasing its water rates to be more reflective of the actual costs of providing water service. Currently, general fund monies subsidize water service operations. An increase in rates would also provide Yountville with additional revenue needed to finance improvements to its water system, including the development of a treated water storage facility.

Opportunities for Shared Facilities:

1. As a subcontractor to Napa County Flood Control and Water Conservation District, the Town of Yountville is responsible for assuming its proportional costs for the delivery of water drawn from the State Water Project. Subcontractors are also responsible for paying a transportation charge that covers the cost associated with the infrastructure and facilities needed to capture and convey water to Napa County. These shared facilities include the North Bay Aqueduct and the Napa Turnout Reservoir. Costs relating to future upgrades and improvements to this conveyance system will be shared among each subcontractor as well as the Solano County Water Agency and its subcontractors.

Improvements to the North Bay Aqueduct are needed to increase its available capacity to equal the amount of entitlements contracted by the Napa County Flood Control and Water Conservation District (NCFCWD). NCFCWCD is currently working with the Solano County Water Agency to implement improvements to the North Bay Aqueduct to meet both agencies contracted entitlement amount. A key factor to this planned improvement is the completion of the original design of the North Bay Aqueduct and to satisfy the increase in State Water Project entitlements generated from NCFCWCD's agreement with the Kern County Water Agency.

2. The Town of Yountville currently shares operating costs with the City of Napa to treat and deliver its allotment of water entitlements drawn from the State Water Project. Similarly, Yountville shares operating costs with the State of California's Department of Veterans Affairs for water entitlements drawn from Rector Reservoir and treated at Rector Water Treatment Plant. These relationships provide the mechanism for these agencies to share costs with one another with respect to future system improvements affecting each agency's water systems.

Government Structure Options:

1. The Town of Yountville is the only public agency providing water service within its jurisdictional boundary. There are two other public agencies empowered to provide water service whose jurisdictions overlap that of Yountville: the Napa County Flood Control and Water Conservation District and Napa County Resource Conservation District. Both of these agencies have elected not to offer water service, and have expressed no intentions of doing so in the foreseeable future.

2. There has not been a change in the Town of Yountville's organization since 1990 and its sphere of influence remains conterminous with its jurisdiction boundary.

3. The Town of Yountville has a moratorium on new and expansions of existing water connections except for single-family and multi-family (two-unit) projects on lots of existing records. Until this moratorium is rescinded, it is not anticipated that Yountville will pursue a change in its organization within the timeframe of this study.

Evaluation of Management Efficiencies:

1. Each year, the Town of Yountville provides a summary of past and projected revenues and expenditures stemming from its water service operations as part of its annual budget. The budget is adopted following publicly noticed budget study sessions in which members of the public are allowed to comment and offer suggestions with respect to expenditures relating to water service. In addition to

enhancing the accountability of elected and appointed officials, the budget process provides a clear directive towards staff with respect to prioritizing city resources.

2. In 2002, the Town of Yountville adopted a five-year capital improvement program that includes 1.3 million dollars for projects aimed at upgrading and improving its water service operations. The capital improvement program was prepared by staff and demonstrates a reasonable effort on behalf of management to address and update water quality and service objectives in a timely and efficient manner.

3. The Town of Yountville does not have a public works director. Yountville's water service operations are managed by a public works supervisor who is appointed by the town administrator; sewage and reclamation operations are managed by an appointed wastewater treatment supervisor. Although this arrangement provides for reasonable management of Yountville's water service operations, future studies should include an evaluation of the impact this arrangement has on other public works operations.

4. The Town of Yountville has sufficient capital reserves to finance the cost of approved capital improvement projects to its water system.

Local Accountability and Governance:

1. The Town of Yountville Town Council meetings are conducted twice a month and are open to the public. Public inquiries involving water service operations can be addressed to the Council at this time. Regularly scheduled town meetings provide an opportunity for Yountville's constituents to ask questions of their elected representatives, while helping to ensure that service information is being effectively communicated to the public.

2. The Town of Yountville makes reasonable efforts to maintain public dialogue with its constituents regarding its water service operations. These efforts facilitate local accountability and contribute towards public involvement in local governance.

   These efforts include quarterly newsletters, bill inserts, and conducting public workshops on water conservation opportunities. Customers can visit or call Yountville's administration office during regular business hours to discuss questions involving their water bill or speak with water operations personnel regarding service conditions. In addition, designated personnel are on call 24 hours a day to respond to water service related emergencies.

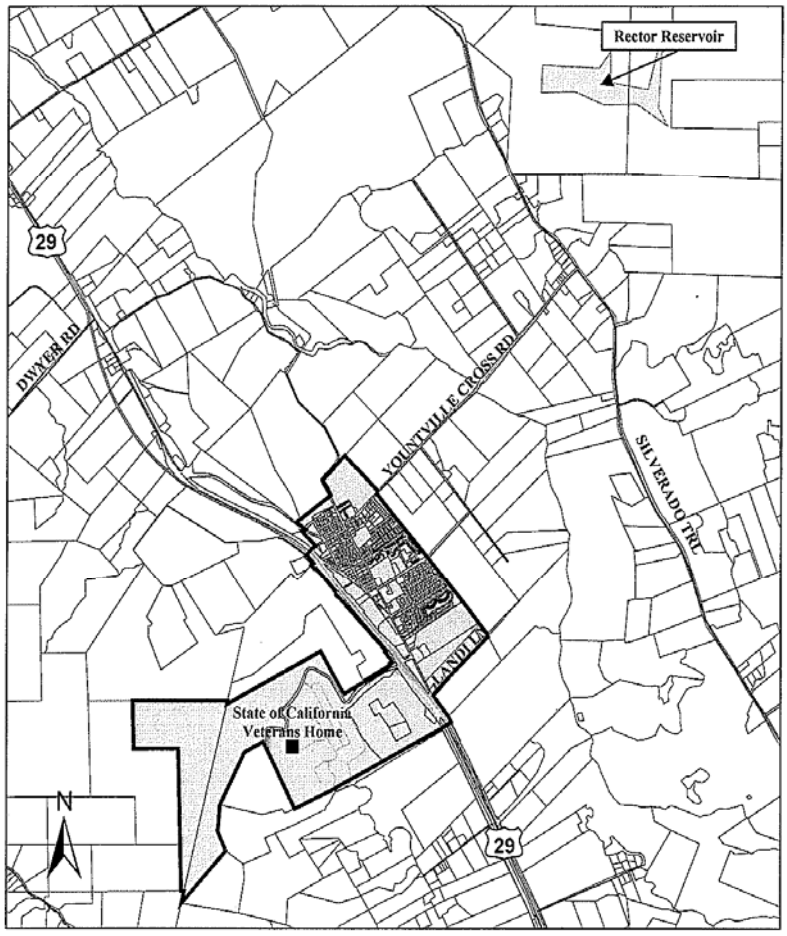
3. The Town of Yountville should enhance its public outreach efforts by establishing and maintaining a website that includes information relating to its water service operations. In addition to posting dates and agendas for council meetings, the website should contain information relating to water rates, conservation efforts, and recent water quality reports.

4. The Town of Yountville elects to subsidize its water enterprise operations with funds drawn from its General Fund. Although the subsidy allows Yountville to maintain low water rates, this practice does not reflect the actual costs of providing water service and is counterproductive towards conservation by not creating an incentive for high use customers.

5. The Town of Yountville has expressed interest in examining the feasibility of developing a storage system within a local aquifer to store excess surface flows. These stored reserves would then be recovered through the development of a municipal well during below normal and dry years. In the course of its evaluation, Yountville should provide an objective analysis of the potential impacts municipal withdraws would have on the affected groundwater basin and its existing users.

6. The Town of Yountville's administration and water service operations are maintained and managed by a responsive and professional staff. These characteristics enhance accountability and cultivate desirable working relationships with members of the public as well as other agencies.

Town of Yountville



LEGEND

Town of Yountville

Sphere of Influence

Last Revised: August 13, 2004
Source: Napa County GIS
Not to Scale

AREA MAP

Local Agency Formation Commission
LAFCO
Napa County

Prepared by: KS

SOURCES

A listing of all sources used in the preparation of this report was circulated as part of the Public Workshop Draft Report for this study. A copy of this listing may be obtained by contacting LAFCO.

Appendix A

STATE WATER PROJECT

OVERVIEW

The State Water Project (SWP) is operated by the Department of Water Resources (DWR) and delivers an annual average of 2.4 million acre-feet of water to 29 long-term contractors throughout California. Originally known as the "Feather River Project," SWP is the byproduct of a series of studies authorized by the Legislature in the 1950s to address California's available water supply. These studies were requested by the Legislature to identify new water sources to abate future shortages stemming from the continued surge in growth following the end of World War II. In 1957, one year after its creation, DWR issued California's first water management plan. Referred to as the "California Water Plan," the plan proposed the construction of a statewide conveyance system transporting captured and stored water in Northern California to water deficient areas in Central and Southern California.

In 1960, to finance the proposed project, California voters approved the Burns-Porter Act, authorizing the sale of 1.75 billion dollars in general obligation bonds. Later that year, DWR entered into its first long-term water supply agreement with the Metropolitan Water District of Southern California. Over the next seven years, DWR entered into 30 additional long-term water supply agreements[112]. These agreements provide each contractor with an annual entitlement of SWP water through 2035. In exchange, each contractor is responsible for reimbursing DWR for the costs associated with the capital and operation of SWP facilities through two fees: an annual transportation charge and a monthly "Delta" water charge. The transportation charge is based on a proportionate share of the capital and operating cost for facilities used to transport SWP water to each agency's service area. These facilities are referred to as "Project Transportation Facilities," and include pumping plants, pipelines, and aqueducts. The Delta water charge is based on each acre-foot of entitlement and is calculated to recover the capital and operating cost associated with the development and operation of storage and conveyance facilities. These facilities are referred to as "Project Conservation Facilities," and include the central components of the SWP, including Frenchman Lake, Lake Davis, Antelope Lake, and Lake Oroville.

Although each contractor is entitled to an annual amount of water drawn from the SWP, deliveries are restricted to the amount of water available. Most notably, SWP supplies are affected by statewide precipitation rates, snow pack levels, and capacity restrictions do to the implementation of federal and state water quality objectives for the Sacramento Bay Delta. To this end, DWR oversees an allocation process that begins at the start of each water year in October. By October 1, contractors are required to submit an allocation request to DWR for the amount of water desired for the upcoming water year. This amount, however, cannot exceed the maximum entitlement scheduled for that water year (as defined in each contractor's water supply agreement). After receiving each

[112] Two of the 31 long-term agreements (Hacienda Water District and Devil's Den Water District) were subsequently terminated following voluntarily water transfer agreements with other SWP contractors.

contractor's allocation request, DWR uses current and projected storage information to establish an initial allocation assignment. During this process, conditions at Lake Oroville in Butte County, and to a lesser extent, the San Luis Reservoir in Merced County, play a central role in determining SWP's current water supply conditions. Following the release of the initial allocation assignment in December, DWR performs monthly evaluations of its storage facilities and snow pack levels in the Sierra-Nevada Mountains to determine if changes are warranted.

In 1994, in response to criticism voiced by agricultural users, significant revisions to the SWP allocation process were implemented following an agreement between DWR and long-term contractors. Referred to as the "Monterey Agreement," it ended DWR's practice of applying initial reductions in SWP deliveries to only agricultural contractors during periods of water deficits in favor of equitable reductions to all contractors. As a result of the Monterey Agreement, urban and agriculture contractors are subject to an equal reduction in their entitlements in the event DWR determines that demand outpaces supply. The agreement also includes a commitment by agricultural users to permanently transfer up to 130,000 acre-feet of entitlement to urban users on a willing-buyer-willing-seller basis. In addition, a turn-back pool is available, allowing contractors to store excess entitlements for purchase by DWR or other contractors.

As noted, an important planning factor for each SWP contractor is differentiating between contracted entitlements and actual deliveries. This distinction has been reinforced by recent court decisions requiring affected agencies to clarify information in their long-term planning documents about the delivery capability of the SWP. In 2002, to assist contractors in this endeavor, DWR issued the *State Water Project Delivery Reliability Report.* Using a computer simulation model, the report uses historical precipitation rates along with projected land and water use demands to estimate the delivery reliability of the SWP through 2021.[113] The report includes a delivery probability table estimating the likelihood of actual SWP deliveries under three planning models. These models represent projected demands in 2001 and 2021. For 2021, the report estimates demand under two planning components: 1) demand fluctuates and is affected by weather conditions; 2) demand does not fluctuate and represents demand levels at contractors' maximum amount of entitlement. Both planning models for 2021 estimate that in 75 percent of the years, SWP deliveries will meet 66 percent or more of the maximum amount of all contracted entitlements (4.1 million acre-feet). This amount increases to meet 83 percent and 98 percent or more of the maximum amount of all contracted entitlements in 50 percent and 10 percent of the years respectively. The report also includes delivery projections during drought periods based on precipitation rates as experienced in California during previous droughts. Using precipitation rates from California's most recent drought (1987-1992), the report estimates SWP deliveries meeting 41 percent of the maximum amount of all contracted entitlements between 2001 and 2011, with estimates lowering to 40 percent thereafter through 2021.

[113]Projections are based on the assumption that no new facilities or improvements to existing SWP facilities are implemented and current regulatory limitations (i.e., Bay-Delta Accord) will remain in place.

Since 1963, DWR publishes an annual status report on the SWP. Referred to as "Bulletin 132," the report includes an on-going tabulation of water deliveries as well as updates on current planning and operating activities. The most recent report, Bulletin 132-00, estimated that in 1999, SWP delivered approximately 2,738,891 acre-feet of entitlement water.

ALLOCATION ASSIGNMENTS

In December 2002, DWR issued an initial allocation assignment of 20 percent to SWP contractors for the 2003 water year. By May 2003, DWR increased the allocation assignment to 90 percent based on storage conditions, operational constraints, and contractor demands. Over the past five years, DWR has issued the following initial and final delivery assignments to its SWP contractors:

Department of Water Resources: State Water Project Allocations		
Year	**Initial Assignment**	**Final Assignment**
1998	40%	100%
1999	55%	100%
2000	50%	90%
2001	40%	39%*
2002	20%	70%
2003	20%	90%

* DWR classifies the 2001 water year as a "dry year" due to unusually dry conditions. To alleviate system demands, DWR implemented a dry year water purchase program resulting in the purchase of 138,800 acre-feet of non-project water from willing agricultural sellers. Non-project water secured through this program was then provided to participating SWP contractors in addition to their regular entitlements. Prior to 2001, California had experienced a six-year period of wet to normal precipitation rates.

CONVEYANCE: NORTHERN CALFORNIA TO SOUTHERN CALIFORNIA

The Feather River and its tributaries in the foothills of the Sierra-Nevada Mountains serve as the principal water source for the SWP. At the mouth of the Feather River, which includes three divergences (North, Middle, and South), runoff from the Sierra-Nevada Mountains is captured and conveyed through the divergences into one of three lakes: the Frenchman Lake, Antelope Lake, and Lake Davis. Built by the DWR, these lakes are the first of several SWP lake-reservoirs that enable DWR to manage the distribution of SWP water throughout California. Project water released from the Frenchman, Antelope, and Davis, flows south along the Feather River into Lake Oroville. Lake Oroville serves as SWP's principal storage facility and has a total storage capacity of approximately 3.5 million acre-feet. Project water leaving Lake Oroville flows south

along the Feather River until converging with the Sacramento River, at which point, it spills into the Sacramento-Bay Delta (Delta). Project water allocated to contractors in Napa and Solano Counties is diverted through the North Bay Aqueduct. Remaining project water continues southbound towards the most expansive unit of the SWP, the California Aqueduct.

Encompassing over 400 miles, the California Aqueduct is the bloodline for SWP contractors in Central and Southern California. Visible throughout long stretches of Interstate 5, the California Aqueduct is interceded by a series of aqueducts, canals, and turnouts that provide connection points for contractors throughout the Central Valley. Significant waterways to the California Aqueduct include the South Bay Aqueduct (SBA) and the Coastal Branch Aqueduct (CBA). The SBA provides water to contractors in Alameda and Santa Clara Counties while the CBA provides water to contractors in Kern, San Luis Obispo, and Santa Barbara Counties. As the California Aqueduct approaches the foothills of the Tehachapi Mountains, the Edmonston Pumping Plant lifts water approximately 2,000 feet through the Angeles Forest and into the Antelope Valley. Once in the Antelope Valley, the California Aqueduct is divided into two branches: the West Branch Aqueduct and the East Branch Aqueduct. Project water entering the West Branch Aqueduct serves contractors in Los Angeles, Ventura, and Santa Barbara Counties. Project water entering the East Branch Aqueduct serves contractors in Riverside and San Bernardino Counties.

During the winter and spring months, when supply outpaces demand, project water is diverted from the California Aqueduct through the San Luis Canal to the San Luis Reservoir. Located west of Los Banos along the Pacheco Pass (Highway 152), the San Luis Reservoir is jointly owned and operated by the United States Bureau of Reclamation and has a storage capacity of 2,027,800 acre-feet. The San Luis Reservoir serves an important role in the DWR's ability to meet peak demands by contractors in Central and Southern California. DWR releases project water back into the California Aqueduct for delivery to long-term contractors during periods of peak demand.

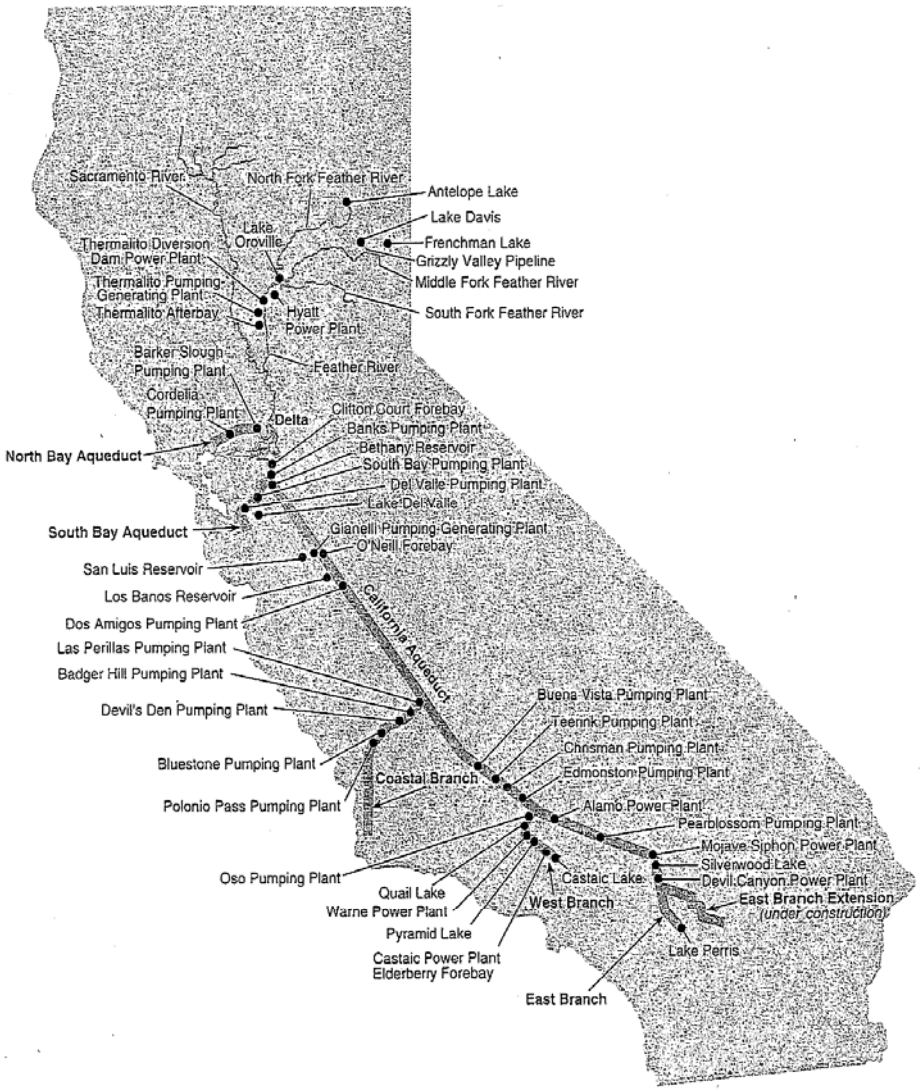
NORTH BAY AQUEDUCT

The North Bay Aqueduct (NBA) provides SWP water to the Napa County Flood Control and Water Conservation District (NCFCWCD) and the Solano County Water Agency (SCWA). Construction of the NBA was completed in two phases. The first phase was completed in 1968 and involved the construction of a temporary transmission line. This transmission line provided NCFCWCD with non-project water generated from Lake Berryessa as part of the federal government's Solano Project. Referred to as the "Napa Portion," it was intended as a temporary measure until a permanent transmission line connecting Napa County to the Delta was completed. During this time, non-project water from Lake Berryessa was conveyed from the Solano Project's South Putah Canal to the Napa Turnout Reservoir in Jameson Canyon by-way of the Cordelia Surge Tank.

In 1988, the second phase (Solano Portion) of the NBA was completed, providing a permanent transmission line connecting new and existing facilities in Solano and Napa Counties with the Barker Slough Pumping Plant near Rio Vista. The Barker Slough Pumping Plant captures and conveys Delta water through a 72-inch, 23-mile transmission line to the Cordelia Pumping Plant. Project water is detained at the Cordelia Pumping Plant's forebay until storage facilities in Vallejo, Benicia, or Napa County require recharge. Project water discharged to Napa County is conveyed through a four-mile transmission line that is protected from changes in water pressure by the aforesaid Cordelia Surge Tank. Project water is stored at the Napa Turnout Reservoir in Jameson Canyon. The Napa Turnout Reservoir, which has a storage capacity of approximately 7.1 million gallons, represents the last component of the NBA and is the initial connection point for NCFCWCD and its subcontractors.

Operations and maintenance for the NBA are provided by DWR through a local field office. The field office monitors the NBA to ensure that the conveyance system is structurally sound and that water deliveries are passing through without impediments. To perform routine maintenance, the NBA is periodically shut down during the winter and spring months when local storage supplies are sufficient to sustain demand.

STATE WATER PROJECT



Source: California Department of Water Resources, Bulletin 132-00

Appendix B

GROUNDWATER

OVERVIEW

The administration of water rights and water quality objectives in California are under the jurisdiction of the State Water Resources Control Board (SWRCB). As part of its mandate, SWRCB is responsible for administering the appropriation of water rights through an application and permit process. Pursuant to California Water Code §1200, however, only surface water and groundwater stemming from subterranean streams flowing through known and definite channels are subject to appropriation. As a result, groundwater not found to be flowing through a subterranean stream is not subject to state regulations.

An important component in defining groundwater rights in California involves the correlative rights of property owners. Commonly referred to as riparian rights, the State recognizes the rights of property owners to use water that borders, crosses, or underlays their land. However, a key restriction placed on all water rights (riparian and appropriative) in California is the condition that the right shall be limited to reasonable and beneficial uses. California Water Code §1241 specifies that if a person entitled to the use of water fails to reasonably and beneficially use all or a portion of the water for a period of five years, SWRCB may regard the water as unappropriated public water. Although the code refers to individuals with appropriative rights, the California Supreme Court in 1903 (Katz v. Wlkinshaw) concluded that the doctrine of reasonable use also applies to groundwater.

Although there are no statewide regulations pertaining to the use of groundwater, there are tools available at the local level establishing procedures for managing groundwater basins. One of the earliest forms of groundwater management in California involves adjudication. In this instance, courts are asked to settle disputes and determine water rights involving a specific groundwater basin. Once a basin is adjudicated and its water rights defined, a "watermaster" is appointed by the court to act as legal custodian of the basin to ensure compliance with the court's ruling.[114]

In 1992, the California Legislature passed AB "3030" establishing procedures for local government agencies already empowered to provide water service to implement a groundwater management plan.[115] Pursuant to California Water Code §10750-10756, the groundwater management plan enables a local government agency to implement various levels of oversight involving a groundwater basin. These powers include establishing mitigation measures for preventing overdraft conditions, monitoring groundwater and storage levels, replenishment measures, and facilitating conjunctive use operations. In addition, a local agency may limit or suspend groundwater withdraws if it has determined

[114] As of January 2001, there were 18 adjudicated groundwater basins in Siskiyou, Kern, Ventura, Los Angeles, San Bernardino, Riverside, and San Diego Counties.

[115] The California Water Code defines a local agency as any local public agency that provides water service to all or a portion of its service area, including a joint powers authority formed by local public agencies that provide water service (§10752-g).

through due diligence that replenishment programs and/or other alternative sources of water supply are proven insufficient to alleviate the demand for groundwater.

There are also a number of cities and counties in California that have adopted ordinances regulating the use and access of groundwater within their respective jurisdictions. These ordinances are viewed as extensions of a local government's police power: a local jurisdiction's authority to implement regulatory measures in order to reasonably provide for the public's best interest. Other notable forms of groundwater management include statutory authority prescribed to special legislation districts (groundwater management districts or water management agencies) as well as certain special districts formed under the California Water Code (i.e., flood control and water conservation districts).

NAPA COUNTY

Napa County is comprised of several groundwater basins that collectively serve as the primary water source for people located outside of the County's five incorporated territories and special districts. These basins include the North Napa Valley Basin, Milliken-Sarco-Tulucay Basin, Carneros Valley Basin, Cappell Valley Basin, and the Pope Valley Basin. In 1998, the Napa County Board of Supervisors adopted the Napa County Groundwater Conservation Ordinance (Ordinance No. 1162), which established permit requirements for groundwater withdraws and uses in Napa County. Developed over a two-year period, the ordinance is intended to abate the overdraft of groundwater reserves in Napa County by maximizing the long-term beneficial use of groundwater through conservation efforts. In addition, the ordinance is aimed at ensuring an adequate water supply for Napa County's primary commerce: agriculture.

The ordinance requires an applicant obtain a groundwater permit from the Napa County Department of Environmental Management before developing or improving a groundwater source. Applicants are exempt from the permit process if they are developing or improving an on or off-parcel water source serving a single contiguous parcel, unless the parcel is located within a defined "groundwater deficient area" or consist of less than one acre and public water is available.[116] Applicants are also exempt if they are developing or improving an on or off-parcel water source serving agriculture purposes and the water is serving the land or contiguous property on which the water source is located. Finally, the ordinance encourages the Napa County Flood Control and Water Conservation District to develop a groundwater management plan as provided in Section §10750-10756 of the California Water Code.

The only other local jurisdiction in Napa County with an adopted groundwater ordinance is the City of Calistoga. Adopted by its City Council in 1998, the ordinance prohibits the development of new wells for commercial or industrial use within Calistoga. As part of the permit process, the ordinance requires an applicant to submit a preliminary report to the City's Public Works Department that includes an estimate of projected water use and current and future land use plans for the affected territory.

[116]Ordinance No. 1162 identifies the Milliken-Sarco-Tulucay Groundwater Basin as the lone water deficient area in Napa County.

PREVIOUS STUDIES – NAPA COUNTY

Although groundwater has historically played a prominent role in the development of Napa County, information involving the County's underground basins is limited to a few studies. One of the earliest groundwater studies involving Napa County was published in 1960 by United States Geological Survey (USGS). Titled *Water Supply Paper 1495 – Geology and Groundwater in Napa and Sonoma Valleys, Napa and Sonoma Counties*, by Fred Kunkel and J.E. Upson, the study included a detailed analysis of the geological properties of the Napa and Sonoma Valleys and their impact on the availability and quality of groundwater in the region. The study area encompassed approximately 130 square miles of land bounded by the Howell Mountains to the east, Mount St. Helena to the north, Sonoma Mountains to the west, and the San Pablo Bay to the south (the two valleys are bisected by the Mayacmas Mountains). The study identified that the Napa Valley's groundwater basins are primarily recharged from surface precipitation and runoff generated from Mt. St. Helena to the north, Howell Mountain to the east, and Mayacmas Mountain to the west. The study also identified that the groundwater underlying the Napa Valley does not move as a stream or in a defined underground channel.[117] Of special interest, the study estimated that the Napa Valley's underground basins have a cumulative groundwater storage capacity to a depth of 200 feet of approximately 300,000 acre-feet.

In 1973, the USGS published *Groundwater Hydrology of Northern Napa Valley*, by Robert E. Faye. The study entailed a comprehensive review of the alluvium basin underlaying the northern portion of the Napa Valley. The study area encompassed approximately 60 square miles of land bounded by Oak Knoll Avenue to the south and the City of Calistoga to the north. The study noted that the floor of the Napa Valley is primarily comprised of a thin layer of alluvium (sand, gravel, silt, and clay) that overlays a thick section of Sonoma Volcanics (andesite, basalt, tuff, pumice, diatomite, diatomaceous mud, silt, sand, and gravel). The study proclaimed the alluvium layer to be the best aquifer in the region due to its permeable nature, with increased production in areas where the alluvium layer is thickest.[118] To this end, the study stated that wells located within the alluvium layer showed an average production rate of 220 gallons per minute.[119] Comparatively, the wells located within the Sonoma Volcanics layer showed an average production rate of 32 gallons per minute. In addition, a key component of the study involved the author's conclusion that historically groundwater levels throughout the Napa Valley have varied considerably from season to season and are significantly impacted by precipitation rates. Using historical rainfall records for St. Helena, the study identified a threshold value of 35 to 40 inches of annual rainfall required to meet soil requirements and replace groundwater losses from the previous year (including losses

[117] As noted, California Water Code Section §1200 specifies that applications or permits to the State Water Resources Control Board to appropriate water rights only applies to surface water and groundwater generated from subterranean streams flowing through known and definite channels.

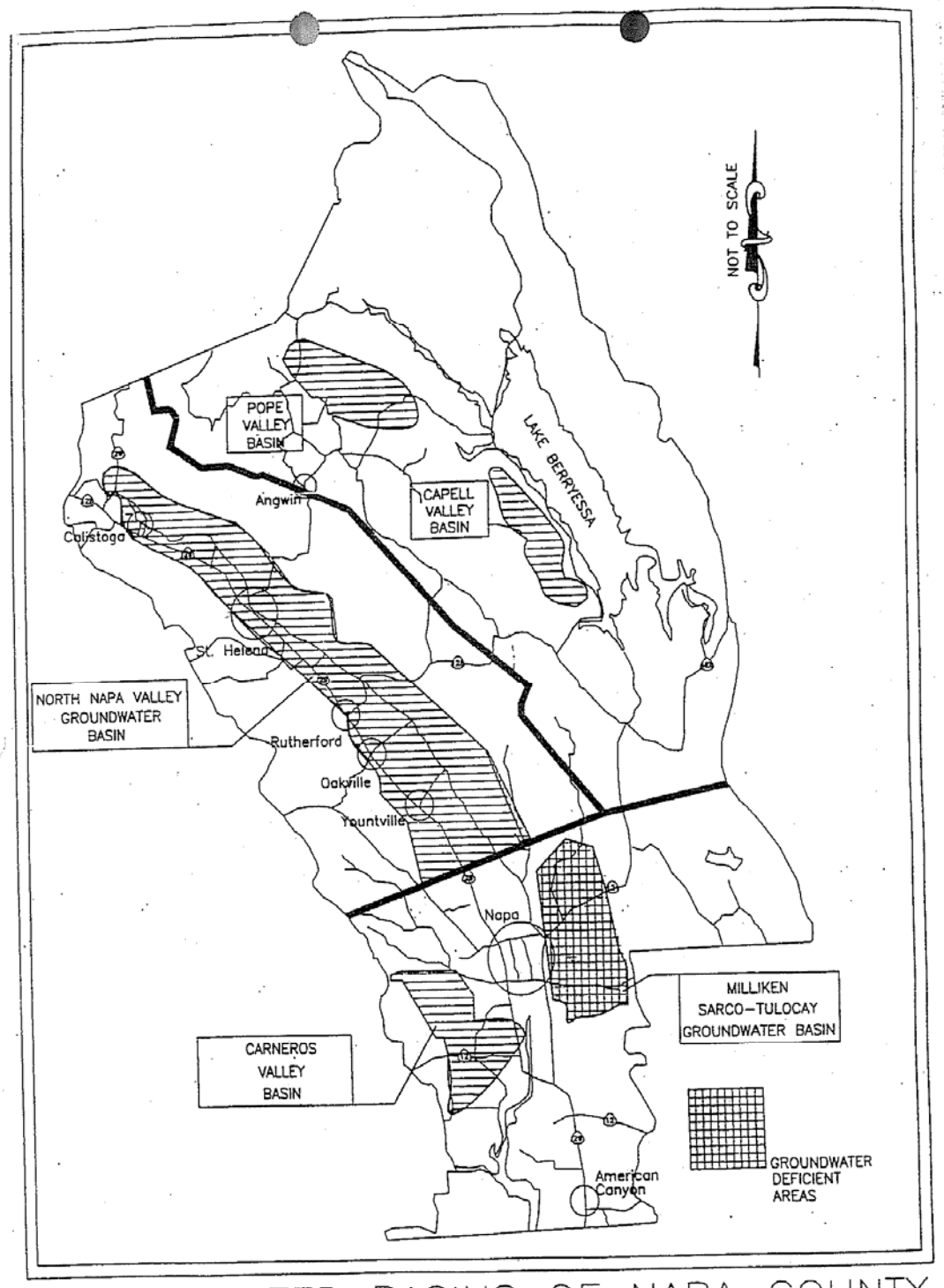
[118] The study identified that the alluvium layer's thickness increased from the exterior of the valley floor towards the Napa River.

[119] The study estimated that the alluvium basin of northern Napa Valley contained approximately 190,000 acre-feet of stored groundwater in 1972.

caused by discharge to the Napa River, evaporation, and extraction).[120] Consequently, an annual rainfall amount less than the threshold amount creates a loss in the water table. Using a computer analysis, the study suggested that during drought conditions, groundwater levels would not significantly decline until groundwater withdraws exceed 24,000 acre-feet over two consecutive years.

In 1977, USGS published *Groundwater Hydrology of the Lower Milliken-Sarco-Tulucay Creeks Area, Napa County*, by Michael J. Johnson. The study included an analysis of the hydrological and geological properties of the lower basins of the Milliken Creek, Sarco Creek, and Tulucay Creek area. The study area encompassed approximately 15 square miles bounded by the Howell Mountains to the south, west, and north and the Napa River to the east. The study was prompted by a steady decline in water levels throughout the study area due to an accelerated increase in urban development and the continued irrigation of agricultural land. The study area included the Silverado and Napa County Clubs, Coombsville, and other residential sections of east Napa and overlays Sonoma Volcanics. In all, the study identified approximately 1,500 wells within the study area with a collective withdraw rate of 3,000 acre-feet per year. The study concluded that the variations in the geological materials of the Sonoma Volcanics had created a high level of variance in groundwater yields throughout the lower Milliken-Sarco-Tulucay Creeks area. Exceeding 500 feet in depth, the Sonoma Volcanics contain tuffs, which consist of volcanic debris that are fused together by heat, creating water reservoirs. Infiltration from precipitation and streams from the east provide the majority of recharge to the area. However, a prominent factor identified in the study restricting recharge to the area involves fragmentation within the Sonoma Volcanics layer. Most notably, it was identified that the Soda Creek fault line plays a significant role in limiting the amount of recharge into the lower basins of Milliken and Tulucay Creeks. At the time of the study, USGS estimated that the total groundwater storage available in the study area is 196,000 acre-feet. However, the study limited the usable amount of available storage to 20,000 acre-feet due to economic (cost of extended drilling) and physical components (rock formation). Finally, the study concluded that the Milliken and Sarco basins were outperforming their recharge capabilities, resulting in an average decline of 1.5 feet in water levels per year. At the 1975 rate, USGS projected that the lower drainage basins of Milliken and Sarco Creeks' water levels would continue to decline an average of 1.5 feet per year and eventually deplete usable water within 30 years (2005). Conversely, information collected for Tulucay Creek's lower basin did not demonstrate a downward trend in water levels. Currently, the USGS and the Napa County Flood Control and Water Conservation District are conducting a follow-up to this study. Release date for this study is mid-2003.

[120] The study estimated that between 1964-1970, the annual domestic and agricultural groundwater use was 300 acre-feet and 4,707 acre-feet, respectively.



GROUNDWATER BASINS OF NAPA COUNTY

MAP 13-1: Groundwater – Deficient Areas

Source: County of Napa, Ordinance No. 1162

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MEMORANDUM

June 12, 2003

COPY

TO: Local Agency Formation Commission

FROM: Keene Simonds, Analyst

SUBJECT: Comprehensive Water Service Study – Supplemental Report
Private Water Service Providers

At the April 10, 2003 meeting, the Commission asked staff to expand the scope of its *Comprehensive Water Service Study* to provide an overview of private water service in Napa County. Specifically, the Commission expressed interest in identifying the extent of private water service in the County as well as documenting service conditions relevant to LAFCO's review of public service providers. Although private water service providers are outside LAFCO's jurisdiction, they serve important roles in the development of current and future land use patterns within their respective service areas – most typically in unincorporated residential communities.

Oversight of private water service providers is generally confined to state and local health and safety regulatory agencies; investor owned and private for-profit water companies are also regulated by the California Public Utilities Commission. Pursuant to California Health and Safety Code, primary regulation of all public water systems is delegated to the Department of Health Services (DHS). Health and Safety Code §116275 defines a public water system as serving 15 or more service connections and/or regularly serving at least 25 individuals at least 60 days a year. Among its regulatory duties, DHS is responsible for administering and enforcing domestic water quality standards established under California's Safe Drinking Water Act. This Act requires that all operators of public water systems receive a domestic water supply permit from DHS prior to initiating service. As part of the permit process, each applicant is required to submit a technical report containing a description of its supply and distribution system, service area, and system demands. Once permitted, operators of public water systems must provide DHS with regular coliform sampling results in addition to semi-annual inorganic chemical monitoring assessments (i.e., arsenic). Operators are also required to provide DHS with a certified copy of their annual "consumer confidence report." Under a local primacy delegation agreement with DHS, the Napa County Department of Environmental Management is assigned jurisdiction of local public water systems serving fewer than 200 service connections; public water systems with 200 or more service connections are regulated by DHS' regional office in Santa Rosa.

A review of DHS and Napa County Department of Environmental Management's indices revealed approximately 180 public water systems in Napa County. The vast majority of these public water systems are classified as "transient-noncommunity" and "nontransient-noncommunity" typically serving schools, wineries, and restaurants. Water supplies for these systems are generally drawn from local groundwater sources. The remaining public water systems in the County are primarily classified as "community water systems." Community water systems serve at least 15 service connections used by permanent residents and/or regularly serve at least 25 permanent residents. These systems typically serve residential communities, ranging from municipalities and special districts to homeowner associations and mobile home parks. Water supplies for these systems are generally drawn from groundwater and surface sources.

Noting that the main objective of this endeavor is the identification of organized private water service providers serving residential customers, staff has identified 12 public water systems operated by private and mutual water companies in Napa County. Aggregately, these companies provide the majority of private residential water service in the County. Of the 12 identified, only one company (Meyers Water Co.) is regulated by the California Public Utilities Commission. The remaining 11 private water service companies are required only to comply with water quality standards established by DHS or the County's Department of Environmental Management – water rates and service areas are determined by the provider.

An overview of the 12 private and mutual water companies providing potable water service in Napa County is as follows:

1. **Cannon Park Water Company**
   Provides potable water service to approximately 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.

2. **Howell Mountain Mutual Water Company**
   Provides potable water service to approximately 386 residential connections located 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.

3. **La Tierra Heights Mutual Water Company**
   Provides potable water service to approximately 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.

4. **Linda Falls Terrace Mutual Water Company**
   Provides potable water service to approximately 14 residential connections in the "Linda Falls Terrance Subdivision" located in the vicinity of Linda Falls Terrance Drive's intersection with Howell Mountain Road, east of St. Helena. The distribution system is served by two local wells.

5. **Linda Vista Mutual Water Company**
   Provides potable water service to approximately 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.

6. **Mapes Heights Mutual Water Company**
   Provides potable water service to approximately 8 residential connections located along Kortum Canyon Road, west of Calistoga. The system is served by a local well.

7. **Meyers Water Company**
   Provides potable water service to approximately 92 residential connections in the "Edgerly Island Subdivision" located along Milton Road, south of Napa. The service area includes the southern portion of the Napa River Reclamation District No. 2109. The distribution system is served by a local well.

8. **Milton Road Water Company**
   Provides potable water service to approximately 24 residential connections located along Milton Road, south of Napa. The service area includes the northern portion of the Napa River Reclamation District No. 2109. The distribution system is served by a local well.

9. **Rutherford Hill Mutual Water Company**
   Provides potable water service to approximately four 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.

10. **Tucker Acres Mutual Water Company**
    Provides potable water service to approximately 39 residential connections located in the vicinity of Tucker Road's intersection with State Highway 29, south of Calistoga. The distribution system is served by a local well.

11. **Vailima Estates Mutual Water Company**
    Provides potable water service to approximately 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.

12. **Woodland Ridge Mutual Water Company**
    Provides potable water service to approximately nine residential connections located along Howell Mountain Road, east of St. Helena. The distribution system is served by two local wells.

Additionally, St. Helena Hospital provides potable water service to approximately 178 residential connections in addition to serving its 188-bed hospital. Its service area extends along the Sanitarium Road area, east of St. Helena. The distribution system is served by five local wells.

Please note that during the course of this review, mailed notices were sent to the service providers listed above. These notices, coupled with telephone calls (when possible), explaining the scope of LAFCO's *Comprehensive Water Service Study* asked for their assistance in providing staff with an overview of service conditions within their respective service areas. Of those replying, a common concern expressed by several private water service providers serving the Angwin/Deer Park area involves the threat of overdraft within the local groundwater basins due to the influx of vineyards in the area. Many of these service providers expressed apprehension as to the overall result the increased agricultural production will have on existing residential water tables (see attachment). In addition, many of the smaller water companies noted the adverse impact increased water quality standards imposed by state and local health officials have created on their financial capacity.

Ultimately, the review of private water service is limited to public records and information voluntarily provided by the affected entity. Efforts to contact representatives from each of the private and mutual water companies serving residents of Napa County indicates a general lack of interest on the part of the provider to disclose service information. An underlying issue might involve the relationship many of these private water suppliers have with homeowner associations; disclosures of water service conditions perceived as problematic may adversely affect property values and deter these providers from disclosing information to the public.

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AGENDA ITEM NO. 6d

COPY

October 9, 2003

TO: Local Agency Formation Commission

FROM: Keene Simonds, Analyst KS

SUBJECT: Comprehensive Water Service Study: *Water Rate Comparison*

At its August 14, 2003 meeting, the Commission received a rate comparison involving the 10 public agencies providing potable water service in Napa County. As recommended by the Commission, the rate comparison table has been amended to include a column identifying the calculation used to determine each agency's projected monthly rate total with respect to single-family customers. The amended rate table is attached for the Commission's review.

Public Water Service Providers of Napa County: Rates as of August 2003

Single Family Residential - Flat Rate Schedule (based per month)

Agency	Volume Fee	Availability Fee	Volume and Availability Calculation	Projected Monthly Total
Circle Oaks County WD (both monthly)	$6.50 per 1,000 gallons	$29		
10,000 gallons delivered	*65*	*29*	*$6.50 x 10 (kg) + 29*	*94*
15,000 gallons delivered	*97.5*	*29*	*$6.50 x 15 (kg) + 29*	*126.5*
20,000 gallons delivered	*130*	*29*	*$6.50 x 20 (kg) + 29*	*159*
Congress Valley WD (bimonthly)	$3.23 per 1,000 gallons			
10,000 gallons delivered	*32.3*		*$3.23 x 10 (kg)*	*32.3*
15,000 gallons delivered	*48.45*		*$3.23 x 15 (kg)*	*48.45*
20,000 gallons delivered	*64.6*		*$3.23 x 20 (kg)*	*64.6*
Lake Berryessa Resort ID (monthly and annual)	$1.44 per 1,000 gallons	$468		
10,000 gallons delivered	*14.4*	*39*	*$1.44 x 10 (kg) + 39*	*53.4*
15,000 gallons delivered	*21.6*	*39*	*$1.44 x 15 (kg) + 39*	*60.6*
20,000 gallons delivered	*28.8*	*39*	*$1.44 x 20 (kg) + 39*	*67.8*
Napa Berryessa Resort ID (monthly and annual)	$1.71 per 1,000 gallons	$240		
10,000 gallons delivered	*17.1*	*20*	*$1.71 x 10 (kg) + 20*	*37.1*
15,000 gallons delivered	*25.65*	*20*	*$1.71 x 15 (kg) + 20*	*45.65*
20,000 gallons delivered	*34.2*	*20*	*$1.71 x 20 (kg) + 20*	*54.2*
American Canyon (monthly)	$2.50 per hundred cubic feet			
10,000 gallons delivered	*22.5*		*$2.50 x 13 (hcf)*	*32.5*
15,000 gallons delivered	*50*		*$2.50 x 20 (hcf)*	*50*
20,000 gallons delivered	*65*		*$2.50 x 26 (hcf)*	*65*
Napa (bimonthly)	$3.23 per 1,000 gallons			
10,000 gallons delivered	*32.3*		*$3.23 x 10 (kg)*	*32.3*
15,000 gallons delivered	*48.45*		*$3.23 x 15 (kg)*	*48.45*
20,000 gallons delivered	*64.6*		*$3.23 x 20 (kg)*	*64.6*

Single Family Residential - Tiered Rate Schedule (based per month with entry level meter)

Agency	Volume Fee	Availability Fee	Volume and Availability Calculation	Projected Monthly Total
Spanish Flat WD (both monthly)	$1.38: 0-6,000 gallons	$25.30		
	$1.65: 6,001-12,000 gallons			
	$1.93: 12,001-18,000 gallons			
	$2.20: 18,001 gallons and above			
10,000 gallons delivered	*14.88*	*25.3*	*$1.38 x 6 (kg) + $1.65 x 4 (kg) + 25.30*	*46.18*
15,000 gallons delivered	*23.97*	*25.3*	*$1.38 x 6 (kg) + $1.65 x 6 (kg) $1.93 x 3 (kg) + 25.30*	*49.27*
20,000 gallons delivered	*34.16*	*25.3*	*$1.38 x 6 (kg) + $1.65 x 6 (kg) + $1.93 x 6 (kg) + $2.20 x 2 (kg) + 25.30*	*99.46*
Calistoga (both bimonthly)	$2.52: 0-8 hundred cubic feet	$13.18 for 5/8 for 3/4-inch		
	$3.02: 9-14 hundred cubic feet			
	$3.36: 15-22 hundred cubic feet			
	$3.36: 23-30 hundred cubic feet			
	$3.36: 31-50 hundred cubic feet			
	$4.46: 51 hundred cubic feet and above			
10,000 gallons delivered	*35.28*	*13.18*	*$2.52 x 8 (hcf) + $3.02 x 5 (hcf) + 13.18*	*48.44*
15,000 gallons delivered	*58.44*	*13.18*	*$2.52 x 8 (hcf) + $3.02 x 6 (hcf) + $3.36 x 6 (hcf) + 13.18*	*71.62*
20,000 gallons delivered	*78.6*	*13.18*	*$2.52 x 8 (hcf) + $3.02 x 6 (hcf) + $3.36 x 12 (hcf) + 13.18*	*91.78*
St. Helena (both bimonthly)	$1.16: 0-20 hundred cubic feet	$14.18 for 5/8-inch		
	$1.89: 21-40 hundred cubic feet			
	$1.94: 41-60 hundred cubic feet			
	$2.05: 61-80 hundred cubic feet			
	$2.31: 81-120 hundred cubic feet			
	$2.89: 121 hundred cubic feet and above			
10,000 gallons delivered	*15.08*	*14.18*	*$1.16 x 13 (hcf) + 14.18*	*29.26*
15,000 gallons delivered	*22.2*	*14.18*	*$1.16 x 20 (hcf) + 14.18*	*37.38*
20,000 gallons delivered	*34.54*	*14.18*	*$1.16 x 20 (hcf) + $1.89 x 6 (hcf) + 14.18*	*48.72*
Yountville (both bimonthly)	$1.26: 0-5,000 gallons	$16.99 for 3/4-inch		
	$1.88: 6,000-42,000 gallons			
	$2.28: 43,000-100,000 gallons			
	$3.39: 101,000 gallons and above			
10,000 gallons delivered	*15.7*	*16.99*	*$1.26 x 5 (kg) + $1.88 x 5 (kg) + 16.99*	*32.59*
15,000 gallons delivered	*25.1*	*16.99*	*$1.26 x 5 (kg) + $1.88 x 10 (kg) + 16.99*	*42.09*
20,000 gallons delivered	*34.5*	*16.99*	*$1.26 x 5 (kg) + $1.88 x 15 (kg) + 16.99*	*51.49*

* One thousand gallons (kg)
** One hundred cubic feet (hcf): 748 gallons
*** Inquires made to several of the affected agencies responded that the average single-family customer uses approximately 10,000 gallons per month.
**** For comparison purposes, this analysis assumes agencies with rates based on hundred cubic feet round water rates down
(10,000 gallons equals 13 hcf; 15,000 gallons equals 20 hcf; 20,000 gallons equals 26 hcf)

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MARCH 11, 2004
AGENDA ITEM NO. 7d

March 3, 2004

COPY

TO: Local Agency Formation Commission

FROM: Keene Simonds, Analyst

SUBJECT: Lake Berryessa Visitor Services Plan: Draft Environmental Impact Statement

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In October 2003, the United States Department of the Interior, Bureau of Reclamation, issued a draft report concerning proposed management alternatives for future visitor services at Lake Berryessa. Currently, visitor services at Lake Berryessa are provided by concessionaries under contract with the Bureau that operate resorts offering a wide range of commercial and recreational activities for the public. These contracts are due to expire in 2009. The draft report, which includes an evaluation of the potential environmental impacts relating to four proposed management alternatives, identifies "Alternative B" as the preferred option for future redevelopment and management of visitor services at Lake Berryessa.

The underlying objective of Alternative B is to facilitate the reintroduction of short-term uses at Lake Berryessa in accordance with current federal policies. This would include prohibiting and removing all private and long-term uses, including trailers and mobile homes, while redeveloping these sites to facilitate short-term uses, such as recreational vehicle and campground sites, cabins, and picnic areas. Further, Alternative B would create distinct levels of service at each of Lake Berryessa's existing seven resort sites.

There are two local agencies under LAFCO's jurisdiction that would be directly affected by changes in current management operations at Lake Berryessa. These agencies are the Napa Berryessa Resort Improvement District (NBRID) and the Spanish Flat Water District (SFWD). NBRID provides potable water and sewer services to Steele Park Resort while SFWD supplies potable water to Spanish Flat Resort. Both agencies rely on the revenue generated from these outside usage sales to help finance their respective operations. In addition to the elimination of long-term uses at both sites, specific changes proposed by Alternative B are as follows:

- Steele Park Resort would continue to operate as a year-round facility. The resort would offer a variety of facilities and programs to serve the short-term visitor with an emphasis on becoming the water skiing center at Lake Berryessa. Overnight accommodations would include a hotel/motel, cottages, and a recreational vehicle park.

- Spanish Flat Resort would operate as a seasonal facility. The resort would offer basic facilities and programs with the intention of becoming the most economical resort at Lake Berryessa. Overnight accommodations would include cabins and campground sites.

Of special interest to LAFCO, the draft report specifies that infrastructure improvements would be needed at both resorts to accommodate proposed redevelopment, including water and sewer service. However, the report does not specify whether the Bureau prefers for these resorts to become self-sufficient by operating their own water and sewer facilities or continue to contract with NBRID and SFWD. Communication with Stephen Rodgers, Bureau Manager at Lake Berryessa, confirmed that a decision has not been reached on this matter. Regardless, even if NBRID and SFWD were to continue to provide services to both resorts, it is reasonable to conclude that both agencies would be significantly impacted by the loss of revenue stemming from the absence of long-term uses at each resort. Also, the Bureau's fiscal analysis concluded that Alternative B's success would be dependent on implementing a phased approach to redevelopment at each of Lake Berryessa's seven resort sites. This means that it could be years, depending on demand, before the resorts are fully redeveloped.

Staff has identified two issues worth evaluating with respect to future management operations at Lake Berryessa not fully addressed in the draft report. First, the Bureau should clarify what role (if any) NBRID and SFWD will have as it relates to providing water and sewer service to resort sites. Second, LAFCO is preparing to conduct a governance study involving the three special districts under its jurisdiction serving the Lake Berryessa area. The main objective of this study is to evaluate alternative government structure options in terms of enhancing operational and service levels by capturing economies of scale. If the study were to conclude that a consolidated agency would be appropriate in meeting the above-mentioned criteria, would the Bureau be receptive to examining whether this agency could provide water and sewer services to all seven resort site locations at Lake Berryessa through a master service agreement? Could this agency offer other services of interest to the Bureau?

With respect to the three other management alternatives evaluated in the draft report, only "Alternative D" is a viable alternative. "Alternative A" and "Alternative C" would both allow for varying degrees of long-term uses at Lake Berryessa, which the Bureau steadfastly opposes in light of current federal policies. Alternative D is similar to Alternative B, however, the Bureau would take over operations at two of the seven resort sites and provide direct management of the day-use areas with reduced commercial services.

Attached for the Commission's review is a draft comment letter in response to the Bureau's draft report on future management and redevelopment policies at Lake Berryessa, which addresses the issues raised above.

RECOMMENDATION
It is recommended for the Commission to take the following action:

1) Authorize the Chair to sign the attached comment letter concerning proposed management alternatives for future visitor services at Lake Berryessa on behalf of the Commission, and direct staff to send the letter to the United States Department of the Interior, Bureau of Reclamation.

Respectfully submitted,

Keene Simonds
Analyst

Local Agency Formation Commission
LAFCO of Napa County

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March 11, 2004

Janet Sierzputowski
United States Department of the Interior
Bureau of Reclamation
2800 Cottage Way
Sacramento, CA 95825

SUBJECT: Comments on Lake Berryessa Visitor Services Plan: Draft Environmental Impact Statement

Ms. Sierzputowski:

The Local Agency Formation Commission (LAFCO) of Napa County has reviewed the findings and recommendations contained in the Lake Berryessa Visitor Services Plan: Draft Environmental Impact Statement. The draft report evaluates four management alternatives for visitor services at Lake Berryessa following the expiration of current concessionary agreements in 2009. The draft report identifies "Alternative B" as the preferred option regarding future redevelopment and management policies for concessionaries operating resort sites at Lake Berryessa. This alternative would prohibit and remove all private and long-term uses while redeveloping these sites to facilitate short-term uses. Alternative B would also create distinct levels of service at each of Lake Berryessa's existing seven resort sites.

Under the Cortese-Knox-Hertzberg Reorganization Act of 2000, LAFCOs are charged with encouraging the orderly formation and development of local agencies. There are two agencies under LAFCO's jurisdiction that would be directly affected by changes in current management operations at Lake Berryessa. These agencies are the Napa Berryessa Resort Improvement District (NBRID) and the Spanish Flat Water District (SFWD). NBRID provides potable water and sewer services to Steele Park Resort while SFWD supplies potable water to Spanish Flat Resort. Both agencies rely on the revenue generated from these outside usage sales to help finance their respective operations.

LAFCO has identified two issues worth evaluating not fully addressed in the draft report. First, the draft report states that infrastructure improvements would be needed – based on final development plans – at all seven resort sites to accommodate proposed redevelopment under Alternative B, including water and sewer facilities. The draft report, however, does not indicate whether the Bureau prefers for the concessionary resorts to become self-sufficient in terms of operating their own water and sewer service or whether they can continue to choose to contract out for these services. Clarification of this issue is needed to evaluate future financial opportunities or constraints for NBRID and SFWD.

Second, LAFCO is preparing to conduct a governance study involving three special districts under its jurisdiction serving the Lake Berryessa area. These agencies include NBRID and SFWD as well as the Lake Berryessa Resort Improvement District, which provides water and sewer service to the "Lake Berryessa Estates" subdivision near the mouth of Putah Creek. The main objective of this study is to evaluate alternative government structure options to enhance operational and service levels by capturing economies of scale. If the study were to conclude that a consolidated agency would be appropriate in meeting the above-mentioned criteria, would the Bureau be receptive to evaluating whether this agency could provide water and sewer services to all seven resort sites at Lake Berryessa through a master service agreement? Could this agency offer other services of interest to the Bureau? Evaluation of these issues will help to ensure that the efforts of both the Bureau and LAFCO are successful and to the greatest benefit of the residents and resort visitors at Lake Berryessa.

LAFCO recognizes the time and effort spent on this process and appreciates the opportunity to comment on the draft report. Should you have any questions, please feel free to contact Daniel Schwarz, Executive Officer, at (707) 259-8645.

Sincerely,

Harry Martin
Chair