SANITATION AND WASTEWATER TREATMENT MUNICIPAL SERVICE REVIEW

Phase I: Agency Profiles

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LAFCO of Napa County

Public Review Draft

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INTRODUCTION
MUNICIPAL SERVICE REVIEW

This chapter provides an introduction to the Municipal Service Review requirements, agencies reviewed in this report, scope and organization of the report, and potential uses of this report.

I. BACKGROUND

Legislative Authorization

In 1997, the State Legislature convened a special commission to study and make recommendations to address California's rapidly accelerating growth. The Commission on Local Governance for the 21st Century focused their energies on ways to empower Local Agency Formation Commissions (LAFCOs) to address this challenge. LAFCOs were originally formed to oversee the orderly creation of new cities and districts, the annexation of new territory to cities or districts, and the efficient provision of municipal services. The Commission's final report, *Growth Within Bounds*, recommended various changes to local land use laws and LAFCO statutes in order to improve delivery of local government services. The Commission's recommendations were eventually folded into the Cortese-Knox-Hertzberg Local Government Reorganization Act (CKH Act) of 2000.

What is a Municipal Service Review?

The CKH Act of 2000 authorized LAFCO to conduct comprehensive, regional studies of municipal services (Municipal Service Reviews, or MSRs) every five years in conjunction with reviews of city and district spheres of influence. Spheres of influence (SOIs) are boundaries, determined by LAFCO, which define the ultimate service area for cities and special districts. The term "municipal services" refers to the full range of services that a public agency provides or is authorized to provide. Service reviews are studies that evaluate the existing and future service conditions from a local and regional perspective and make determinations to improve the efficiency and effectiveness of municipal services.

The statutory intent of a municipal service review process is for LAFCO to evaluate how agencies currently provide municipal services within the MSR study area and to evaluate the impacts on those services from future growth and other changes that may occur in the MSR area over the next 5, 10, 15 and 20 years. The MSR report is also required to identify potential opportunities to address any shortfalls, gaps and/or impacts on services and governmental structures that may exist currently or are anticipated in the future.

As part of the municipal service review process, LAFCO is also required to prepare a written statement of determination with respect to each of the following issues:

1) Infrastructure needs or deficiencies;
2) Growth and population projections for the affected area;
3) Financing constraints and opportunities;
4) Cost avoidance opportunities;
5) Opportunities for rate restructuring;
6) Opportunities for shared facilities;
7) Governance options, including consolidation or reorganization of service providers;
8) Evaluation of management efficiencies; and
9) Local accountability and governance.

How this report will be used

The CKH Act also requires LAFCO to develop and determine the sphere of influence of each local governmental agency within the county, and to review and update the SOI every five years. In determining the SOI, LAFCO must make determinations on four additional topics:

1) Present and planned land uses, including agricultural and open-space lands;
2) Present and probable need for public facilities and services in the area;
3) Present capacity and adequacy of public facilities that the agency provides; and
4) Existence of any social or economic communities of interest in the area if LAFCO determines that they are relevant to the agency.

The service review provides LAFCO with a tool to comprehensively study existing and future public service conditions and to evaluate organizational options for accommodating growth, preventing urban sprawl, and ensuring that critical services are efficiently and cost-effectively provided. LAFCO may also use this MSR report in reviewing future proposals for extension of service beyond an agency's boundaries or for amendment of urban service area.

II. Study Area and Agencies Covered

The Study Area is Napa County. Illustrated on **Figure 1-1**, this Municipal Service Review analyzes the 10 local agencies that provide wastewater collection and/or treatment services in Napa County. These agencies are:

- Napa Sanitation District
- Napa Berryessa Resort Improvement District
- Lake Berryessa Resort Improvement District
- Napa River Reclamation District
- Spanish Flat Water District
- Circle Oaks County Water District
- Town of Yountville
- City of Calistoga
- City of American Canyon
- City of St. Helena

III. Data Sources and Methodology

In performing this MSR, a variety of data sources were used. To reduce the amount of surveys and information required by service providers, this MSR relied on a number of already published documents as well as an agency survey. Sources of information include, but are not limited to, the following:

- Audited Financial Statements, 2003-2004
- Comprehensive Annual Financial Reports, 2003-2004
- Wastewater Discharge Requirements from the State Water Resources Control Board
- Napa LAFCO Water Service Municipal Service Review
- Fee Schedules, Rates, and Agency Rate Studies
- Capital Improvement Plans
- State Water Resources Control Board Wastewater Service Fee Survey
- LAFCO of Napa County Municipal Service Review Survey for Sanitation Providers
- ABAG 2003 Population Projections
- Interviews with Agency and City Staff

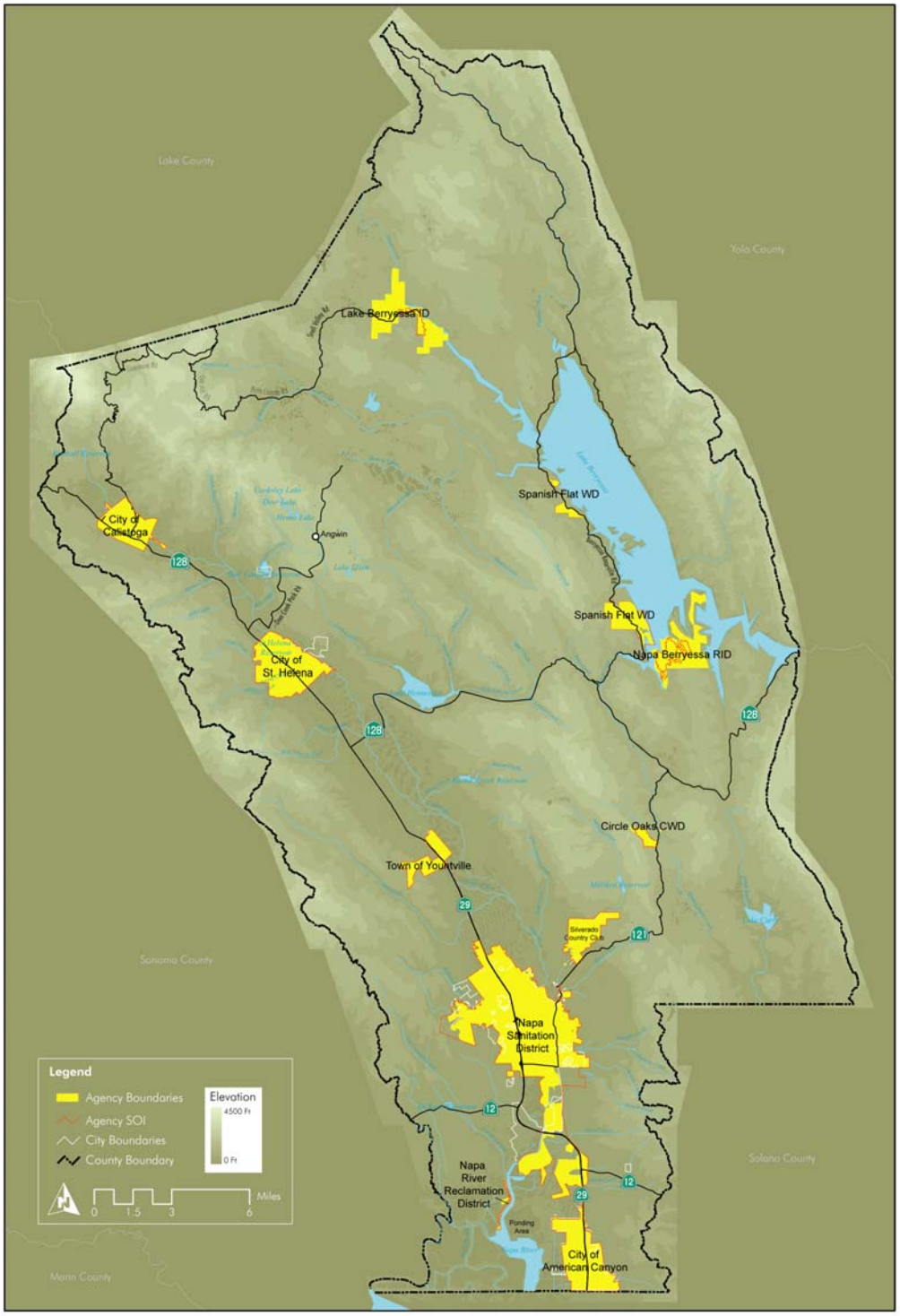

Figure 1.1
Napa County Sanitation and Wastewater Treatment Agencies

IV. PLANNING AND REGULATORY CONTEXT

Numerous federal, state and local laws and agencies regulate wastewater. Some of the state and regional plans build upon federal legislation, while in other instances federal acts have established broad goals which are implemented at the state and local levels. Finally, some regulations are unique to California. The following discussion identifies a few of the major federal, state and local regulatory bodies and requirements for wastewater programs.

Federal Water Pollution Control Act of 1972

The Federal Clean Water Act (CWA), with its amendments, is the principal law governing the nation's streams, lakes, and estuaries. It contains regulatory provisions that impose progressively more stringent requirements on industries and cities to reduce and eliminate pollution of waterways. The CWA establishes as national goals the elimination of pollutant discharges to the navigable waters and the assurance that all navigable waters would be fishable and swimable. It requires dischargers to obtain permits regulating the amount, quality, location, and timing of pollutant discharges. Other applicable sections of the CWA include:

1. Section 303(d) – Impaired Waters List and Total Maximum Daily Loads
2. Section 319 – Non-point Source Management Program
3. Section 401 – State Water Quality Certification Program
4. Section 402 (p) – The National Pollutant Discharge Elimination System

CWA Section 303 requires each state to identify waters that do not meet water quality standards after application of technologically based controls. Applicable water quality standards include designated beneficial uses and adopted water quality objectives. Waterways are identified as designated Water Quality Limited Segments (WQLSs) and are prioritized for purposes of developing Total Maximum Daily Loads (TMDLs) and establishing Waste Load Allocations (WLAs) as well as Load Allocations (LAs). The TMDL is the sum of waste load allocations (WLAs) for point sources of pollution, load allocations (LAs) for non-point sources of pollution and natural background sources. The TMDL is the amount of a pollutant that can be discharged into a water body and still maintain water quality standards.

Section 319 regulates non-point source pollutants, which enter water from diffuse sources. Non-point source pollutants are often chemicals from lawns, automobile residues or urban runoff that enter the wastewater stream and water supply in large quantities and sudden surges, largely due to storms. Although California adopted a Non-Point Source Management Plan (NPSMP) in 1988, cities and counties have only recently begun adopting local implementing rules and regulations. Control of this type of pollution has proven to

be difficult and is expected to require costly upgrades in existing facilities and permit costs, particularly for wastewater facilities with high rates of infiltration.

The State Water Resources Control Board (SWRCB) certifies the quality of surface waters pursuant to Section 401 of the Clean Water Act. Section 401 requires that activities/facilities discharging pollutants into waters must obtain a state water quality certification permit proving that the activity complies with all applicable water quality standards, limitations, and restrictions. Section 402 requires municipalities and publicly owned treatment works to obtain an NPDES permit which regulates discharge of "pollutants from point sources to waters of the United States" to ensure that the discharges do not adversely affect surface water quality or beneficial uses. NPDES permits are authorized by the CWA, Section 402, Section 13370 of the California Water Code, and the California Code of Regulations, Title 23, Chapters 3 and 4. The SWRCB is responsible for issuing NPDES permits.

Porter-Cologne Water Quality Control Act of 1970

The California Water Code (CWC) is the principal state regulation governing the use of water resources within the State of California. This law controls water rights, the construction and management of dams and reservoirs, flood control, conservation, development and utilization of state water resources, water quality protection and management, and management of water-oriented agencies. The water quality provisions set forth in the CWC have been written to supplement provisions of the Health and Safety Code, Public Resources Code, Fish and Game Code, Food and Agriculture Code, Government Code, Harbors and Navigation Code, California Environmental Quality Act (CEQA) and California Endangered Species Act.

Division 7 of the CWC, the Porter-Cologne Water Quality Control Act of 1970, regulates water quality and pollution issues within California by protecting water quality and beneficial uses of all state waters. The Porter-Cologne Act is administered regionally by the State Water Resources Control Board and California Regional Water Quality Control Boards (RWQCB). The Porter-Cologne Act is similar to federal water quality regulations and programs. The SWRCB and regional offices have broad powers and implement the CWA through the adoption of plans and policies, the regulation of discharges, the regulation of waste disposal sites and the cleanup of hazardous materials and other pollutants. It also requires reporting of unintended discharges of any hazardous substance, sewage, or oil/petroleum product.

2

NAPA SANITATION DISTRICT

I. INTRODUCTION

Napa Sanitation District (NSD) provides wastewater collection, treatment and disposal services to the residents and businesses in the City of Napa and surrounding unincorporated areas.[1] NSD has been serving the public since it was organized under the California Health and Safety Code in November 1945. NSD is the largest wastewater collection, treatment, and reclamation agency in Napa County.

Aerial of the Napa River

Table 2-1
Napa Sanitation District
Agency Profile

Date Formed	1945
Enabling Legislation	Sanitation District Act
Agency Type	Special District
Agency Size	20.13 sq. mi.
Services Provided	Sewer and Water Reclamation
Population in 2000 Permanent Residents	78,000

Source: Napa LAFCO Survey, 2005.

NSD currently covers an area of approximately 20 square miles or 12,448 acres. The adopted sphere of influence is 23 square miles or about 14,699 acres. NSD is located in southern Napa County serving the City of Napa and surrounding unincorporated area. According to the District, NSD currently serves approximately 78,000 residents. **Figure 2-1** shows the District boundaries and landmarks.

[1] NSD also provides reclaimed water services. A review of NSD's reclamation program was included as part of the Commission's Comprehensive Water Service Study.

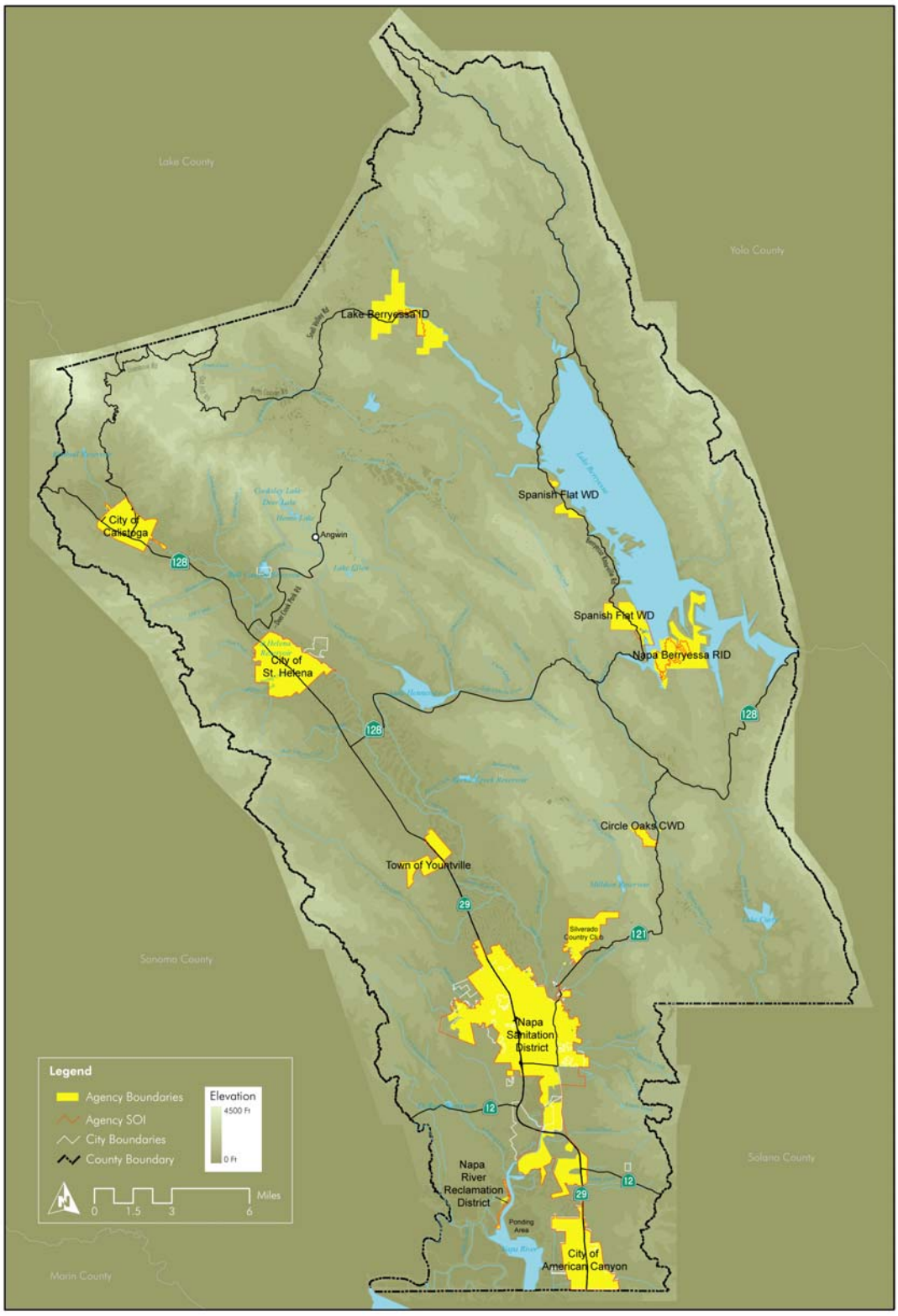

Figure 2.1
Napa Sanitation District

II. POPULATION GROWTH

The Napa Sanitation District traverses the territory of two land use authorities, the City of Napa and the County of Napa. The District's jurisdiction can be described, generally, as including all territory within the City's Rural-Urban Limit line, the Silverado Urban Area, and the Airport Industrial Area (north of Fagan Creek). In total, the NSD jurisdictional boundary encompasses 13,167 acres, with 10,308 incorporated acres (78%) and 2,859 unincorporated acres (22%). The NSD Master Plan is based on the General Plans of the two land use authorities; NSD staff monitors land use development proposals submitted to both agencies to ensure that the District's system can meet the demands of growth.

In 1986, the District Board commissioned the preparation of a 25-year Master Plan. When the draft Master Plan was released in 1988, a significant determination of the accompanying report was the need for substantial upgrades to the collection, treatment, and disposal capacities of the system. Following three years of community outreach and discussion with the City and County of Napa, a final plan was adopted that included a component called the "Soscol Plant Modification Project." The District began implementing this plan in 1991 in order to improve system performance and meet growth projects in the General Plans of the City of Napa and the County of Napa. The District intends to initiate a review and update of its Master Plan in the fall of 2005, which will allow it to account for 1998 revisions to the City General Plan as well as the current update of the County General Plan.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of the NSD based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff.

The District provides wastewater collection and treatment services to 33,712 connections, of which 29,973 are for residential uses and 3,379 for commercial and industrial uses (**Table 2-2**). The District has 257 miles of sewer lines, of which 255 miles are gravity fed lines. With respect to infrastructure age, 40% of all of the sewer lines are between 25 to 50 years old, 40% are between 50 and 75 years old, and the remaining 20% are less than 25 years old. NSD's wastewater treatment plant,

Table 2-2
Napa Sanitation District
Wastewater System

Connections	33,712
Residential	29,973
NonResidential	3,379
Sewer Lines (mi.)	257 miles
Gravity Lines	255 miles
Force Mains	2 miles
Lift Stations	6
Treatment Level:	Secondary & Tertiary

Source: Napa LAFCO Survey, 2005.

Soscal WWTP

Soscol Water Recycling Facility (SWRF), provides secondary treatment of domestic and industrial wastewater during the winter and tertiary treatment during the summer.

The SWRF is a secondary and tertiary biological physical-chemical treatment facility that treats a mixture of domestic and industrial wastewater. NSD's wastewater treatment facility has a number of treatment options that include preliminary treatment (screening), primary treatment (clarifiers), biological secondary treatment (340 acres of oxidation ponds and/or activated sludge facilities), secondary clarification or sedimentation, sand filtration, chlorination, sludge digestion and solids de-watering facilities. Wastewater is treated and discharged in various manners, depending on the time of year. Although highly dependent on climate, in 2004-2005 approximately 15.5 MGD of treated wastewater was discharged to the Napa River from November 1 through April 30. From May 1 through October 31, discharge to the Napa River is prohibited by the SWRQB and wastewater is either stored in stabilization ponds or treated and reused for landscape irrigation in industrial parks, golf courses, pasture lands, feed and fodder crops, and drip irrigation of vineyards. The SWRF produces recycled water meeting Title 22 standards for unrestricted uses.

Water Reclamation and Cogeneration

NSD's Soscol wastewater treatment plant has been recognized for its reclaimed water and cogeneration capabilities. Since the tertiary system began in 1997, the District has produced over 700 million gallons per year of Title 22 unrestricted use water. Reclaimed water is used to irrigate the Chardonnay Golf Course and vineyards, Napa Municipal Golf Course, Eagle Vines Golf Course, Napa Valley College, industrial landscaping, pastures, and eventually landscaping located at the Napa State Hospital and the Napa Valley College. Jointly, the NSD and Carollo Engineers received the California Association of Sanitation Agencies (CASA) Associates Achievement Award in 2003 for the successful use of technology in this area.

The SWFR also recycles and reuses liquids, solids, and gas. Solids are plowed into fields as biosolids, enriching the soil with nutrients. During anaerobic digestion, digester gas including methane is produced. This digester gas is used to co-generate electrical power

using a gas engine generator. Waste heat, a by-product of power generation, is recovered from the engine and exhaust. The electricity and heat produced by the cogeneration system are utilized in the plant to reduce purchased electricity and natural gas. Electricity produced by the generator is fed into the plant electrical distribution system for use where needed. Heat from the gas engine is recovered and used for heating the Digester and nearby buildings. The average recoverable energy produced by the cogeneration unit is 3200 kWh/day. Assuming an average household uses 500 kilowatts each month, the energy from the cogeneration unit is enough to supply the energy requirements of 192 homes for one month.

Wastewater Service Needs

NSD serves all residences, commercial and industrial facilities within its boundary. NSD also provides service outside its boundary to Napa State Hospital, Winton School, and a small number of residences. As of 2004 data, wastewater flows were primarily generated from residential (79%) uses, followed by commercial (18%), and industrial (3.0%). The largest users are Napa State Hospital, Napa Pipe, Napa Valley Unified School District, QVH, Embassy Suites Hotel and the County of Napa. Currently, average annual flow totals about 9.3 mgd. The SWRF operates with a dry weather design capacity of 15.4 mgd.

NSD's 1988 Wastewater Master Plan (updated 1990) forecasts wastewater needs through 2012. Based on an estimated population of 82,000 in 2012, the District anticipates wastewater flow of 8.4 mgd an annual average flow of 10 mgd, and a five year peak storm

Table 2-3
Napa Sanitation District
Wastewater Flow and System Capacity

Connections	**Connections as of 2004**	
• Domestic	29,973	
• Commercial/Industrial	3,379	
• Total	33,712	
Average Flow (mgd)	**Flow as of 2004**	**Plant Design Capacity**
• Annual Municipal Flow	7.10 mgd	8.45 mgd
• Annual Industrial Flow	N/A	N/A
• Annual Infiltration	1.90 mgd	1.55 mgd
• Average Annual Flow	9.3 mgd	10.25 mgd
Peak Daily Wet Weather	29.5 mgd	40.0 mgd

Napa Source: Napa LAFCO Survey, 2005.

event of 49.9 mgd. The District plans to serve anticipated development in the Big Ranch Road Specific Plan Area, the Gasser Property in South Napa, Hussey Property, the Montalcino Resort, and development projects approved by the City and County of Napa (in NSD's sphere of influence). Average annual flows are anticipated at 10.25 mgd by buildout. Shown in **Table 2-3**, the District has capacity to accommodate current and projected flows

Infrastructure Condition

The District's infrastructure is in good working order and conforms to the District's Master Plan. Since 1996, the Board has overseen the completion of two major capital improvement projects at its Soscol Wastewater Treatment Facility. A significant result of these upgrades is that the District now provides tertiary wastewater treatment, enabling the District to provide Title-22 unrestricted use recycled water to major customers including Napa Valley College, Kennedy Park and the City's municipal golf course. The reclamation and recycling capacities of the District presently provide unique disposal and revenue-generating opportunities. Since 2001, NSD has installed approximately 18,000 feet of pipe for recycled water projects.

In fall 2005, the District will initiate a Master Plan update, which will include a thorough evaluation of District infrastructure needs in both the immediate future and the long-term.

IV. FINANCIAL ISSUES

This section reviews the wastewater infrastructure needs and deficiencies of the Napa Sanitation District based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff. (Note: Some of the financial information has been taken from the Draft FY 2004/05 Audit, which at the time of this writing had not yet been adopted and is subject to revision.)

Income and Expenses

NSD had operating revenues of $13.6 million from service charges and operating expenses of $13.2 million for total operating income of $355,620 during FY 2003-2004 **(Table 2-4)**. The District had non-operating revenues of $960,540 from interest income and non-operating expenses of $1.6 million. Net income totaled ($231,573). The District receives 100% of its revenue from charges for services.

Table 2-4
Napa Sanitation District
Income and Expense Statement

Revenues	**Amount**
Charges for Services	$13,625,124
Expenses	
Maintenance & Operations	$5,953,352
Depreciation	$4,193,295
General & Administration	$767,264
Other	$2,355,593
Operating Inc./(Exp.)	$355,620
Interest for Debt Service	($1,602,163)
Non-Operating Rev./(Exp)	($587,193)
Net Income	($231,573)

Source: NSD Audited Financial Statements 2004.

Maintenance and operations expenses comprises 45% of total expenses, followed by depreciation (31%), contractual services and purchased utilities (18%), and general administrative expenses (6%).

Balance Sheet

NSD's cash and investments totaled $10.7 million. Receivables consisted of $471,666 and inventory was $122,750. Long-term assets include restricted cash of $18.8 million reserved for debt service and construction projects. Capital assets totaled $136 million and total assets $166 million. Current liabilities totaled $3 million (of which one-third was service on long-term debt and $1.7 million was accounts payable). Long-term liabilities of $41.6 million were primarily long-term debt. Total equity of $166 million was invested as follows: $93 million in capital assets, $18.8 million in restricted equity for debt service and construction projects, and $8.9 million was in unreserved projects

Table 2-5
Napa Sanitation District
Balance Sheet

Financial Statistics	**FY 2003-04**
Assets	**Amount**
Cash and Investments	$10,670,607
Restricted Cash	$18,809,609
Capital Assets (net)	$136,063,397
All Others	$594,416
Total Assets	$166,607,116
Current Liabilities	$3,110,946
Long Term Liabilities	$41,693,176
Total Liabilities	$45,446,940
Invested in Capital Assets	$93,418,643
Restricted Equity	$18,809,609
Unrestricted Equity	$8,931,924
Total Equity	$166,607,116

Source: NSD Audited Financial Statements 2004.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

Restricted assets held by the District consist of $18,809,609. Restricted assets have been restricted by either bonds, by law or contract obiligaitons to be used for specified purposes. Of these restricted assets $15,542,532 is held for capital improvements[2]. Capital improvements consist of $11,257,608 for plant expansion, $4,244,869 for capital

[2] Capital Improvement reserves are designated for five years.

replacement projects and $40,055 for toilet retrofits. The remaining $3,267,077 of restricted assets is held with a fiscal agent for contractual debt service requirements.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, treatment plant, facilities and equipment). And protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization. Inadequate funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies. The District has a capital improvement program totaling $104 million covering 2004-2009. Shown in **Table 2-6**, approximately $15.5 million in reserves is slated for improvements beginning in FY2003-2004 through FY 2007-2008. Of the total capital improvements slated for FY 2003-2004, 100% of the projects are funded. For 2004, the replacement fund is $4.2 million and the capital reserve fund for expansion is $11.2 million. Replacement funds appear adequate to match depreciation of $4.1 million.

Table 2-6
Napa Sanitation District
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$4,193,295
Capital improvement budget	$15,542,532
Replacement Fund for improving wastewater system	$4,244,869
Capital Reserve Fund for infrastructure expansion, construction, & replacement.	$11,257,608

Source: Napa LAFCO Survey, 2005.

Table 2-7
Napa Sanitation District
Wastewater Service Fees

Fee Type	Amount
Single-Family	$274.00
Multi-family Family	$164.40
Commercial Service Charge	Variable rate
Connection Fee	
- Residential	$5,660
- Commercial	$5,660 (min.)

Source: SWRCB Survey, 2003.

Service Fees and Charges

NSD collects sewer and connection fees from its customers to pay for services. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services and translating such costs into a rate structure. In evaluating rates of different agencies, low rates do not necessarily indicate efficiency. Topography, geology, infrastructure age, deferred maintenance, capacity of treatment facilities, and the weather impact the cost of providing services. Shown in **Table 2-7,** the District collects an annual fixed fee of $274 for single family residences, and $164 for multi-family residences and mobile home residences annually. Commercial rates are based on the quantity generated and strength of flow and range significantly.

Sewer connection feeds are a flat fee of $5,660, but can be higher for commercial uses based on fixture units, strength of wastewater, and quantity of wastewater discharged. Connection fees are deposited in an account reserved for construction, acquisition or financing of capital assets needed to accommodate new growth.

Agency Debt

The District holds $42,926,692 of long-term debt as of June 30, 2004, of which $1,233,516 is due within one year. **Table 2-8** summarizes the District's current debt.

Table 2-8
Napa Sanitation District Long-Term Debt

Debt Type	Maturity	Interest Rate	Issue Date	Original Amount	Outstanding as of 6/04
1998 Cert. of Participation	2003-28	4.5%	1/25/99	$34,520,000	$31,505,000
Water Reuse Installment	2004-28	Variable <12%	9/1/93	$11,165,000	$10,340,000
Note Payable – Somky	2004-07	7.4%	7/16/86	$925,865	$249,789
State Revolving Fund	2003-22	2.5%	12/13/03	$901,376	$901,376

Source: Napa Sanitation District Audited Financial Statements June 30, 2004.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the Napa Sanitation District based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with City staff

Governance

Napa Sanitation District was established in 1945 under the County Sanitation District Act of 1923. The original Board composition was formed, as required by law, as a three member board comprised of the Mayor of the City of Napa (or alternate), a Napa City Council member, and the Chair of the Board of Supervisors (or alternate). In 1975, in response to increased state mandates, NSD formed a joint powers authority with the then-American Canyon County Water District to jointly finance the SWTP. In prior years, in response to the Napa County Grand Jury, NSD increased its board size from three to five with the

intent of increasing public accountability. The Board of Supervisors of Napa County and the City Council of the City of Napa each appoint one of the two additional members. Today, NSD's governing body consists of five members appointed for terms of 4 years each. The Board is responsible for all aspects of the District, ranging from policy making to implementation.

Operations

The District's original Mission Statement was "to collect, treat, and dispose of wastewater." The Clean Water Act of 1972 (CWA) dramatically changed the wastewater industry, enacting a variety of far-reaching requirements. The CWA mandated the National Pollutant Discharge Elimination System (NPDES), which is implemented by the SWRCB. Due to evolution of the regulatory framework of the wastewater industry, the District's original mission has been expanded to read

> *"to collect, treat, beneficially reuse, and dispose of wastewater in an effective and economical manner that respects the environment, maintains the public's health and meets or exceeds all local, state, and federal regulations."*

To implement this mission, NSD has 48 employees including 8 manager/supervisory positions in the four departments of administration, collections, treatment, and technical services. The District employs two full-time executive managers, 13 professional and support staff, and 33 operational/maintenance staff. Of these, 10 staff members have wastewater treatment certifications, and 12 have wastewater collection certifications. Plant Operators and Collection System Maintenance staff are available 24 hours a day, 7 days a week, to respond to emergencies. All services are performed with NSD staff and contractors are only used as needed for specialized skills or when existing staff cannot meat peak workloads.

Programmatic and Operational Tools

Wastewater operations should have a number of management and operational tools in place to effectively manage their wastewater collection and treatment system. Some of the more important management tools include audited financial statements, workload management programs, master facility plan, SCADA or other electronic monitoring systems, preventive maintenance program, capital improvement program, and other similar tools. Although detailed analysis of this topic is beyond the scope of this review, it is possible to determine whether an agency has a formal program, informal or limited program, or lacks a program.

Some of the formal programmatic and operational tools in place include:

- **Preventive Maintenance**. The District has a planned schedule for televising and cleaning sewer lines and hotspots. All sewer lines are cleaned every two years, although this is being re-evaluated because some lines do not require cleaning at that frequency. The District also administers a Fats, Oil and Grease Program to reduce the amount of grease entering the sewer system from restaurants by installing grease traps. The District also maintains a routine program of scheduled maintenance at the wastewater treatment plant.

- **Audited Financial Statements.** NSD's audited financial statements are conducted in accordance with generally accepted auditing standards contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that the Certified Public Accounting Firm plan and perform their audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements and also includes assessing the accounting principles used and the significant estimates made by management, as well as evaluating the overall financial statement presentation.

- **Master Facility Plans.** The District last prepared a Master Facility Plan in 1988 and the population projections were updated in 1990. A new Master Plan will be started during FY 05/06. The Master Facility Plan projects population and service demands through 2012 and is also used to prioritize capital improvement, expansion, and renewal projects needed to meet future service demands. The District also implements a formal five year capital improvement plan, funded through its connection fees and service fees, and which is linked to the population and service projections and needs identified in the Master Facility Plan. As a result, infrastructure needs can be anticipated, planned for, and funded.

Shared Arrangements

The District participates in MOUs with the City of Napa for recycled water, and a Street Tree Program with the City of Napa. Similarly, NSD shares operating costs with the City and County for pooled supplies, such as chemicals, fuel, office supplies, and computers. NSD shares equipment and vehicle maintenance with other agencies in emergency situations. Additionally, the District uses the Special District Risk Management Authority (SDRMA) and California Sanitation Risk Management Authority (CSRMA) for insurance pooling purposes. NSD also shares facilities with the County of Napa on land

surrounding the airport for water reclamation and biosolids disposal. District staff indicated the potential for shared arrangements with other smaller wastewater districts in the County. NSD staff indicated that they could offer potential efficiencies by operating some of the smaller wastewater plants throughout the County that are experiencing operational difficulties; staff believes the District would require reimbursement of costs in order to provide such service.

Compliance with Applicable Laws

The District wastewater treatment plant operations are regulated by the California Regional Water Quality Control Board, San Francisco Bay Region Order No. R2-2002-0111 and NPDES Permit No. CA0037575 recently adopted in April 2005. The District will not need to renew its permit until 2010. The Order regulates the location, quality, timing, and amount of effluent treated and discharged by the wastewater treatment plant. Currently, the District is in good standing with the SWRCB and does not have a current or tentative order pending against the District.

VI. PUBLIC ACCOUNTABILITY

The District's board meetings are held on the first and third Wednesday of each month at 4:30 p.m. at the NSD wastewater treatment Plant on Soscol Ferry Road. Meetings are open to the public. Notices regarding meetings are posted at the NSD administrative office, the Napa County Library, and the NSD website. Regularly scheduled meetings allow the public to attend meetings and ask questions regarding wastewater services and operations.

The District publishes a newsletter and these are also available at their website at www.NapaSanitiationDistrict.com. The NSD website also offers information on treatment systems, laboratory methods, pollution prevention, education and outreach, recent projects, collection systems, services and programs, information about the history of the district, budgeting information, and water conservation. The District has an aggressive and comprehensive public education and outreach program. The District participates with the County of Napa Environmental Education Group in school outreach programs and has developed a user-friendly guide that lists organizations that provide environmental education and/or field trips for Napa County schools which is available on their website. The District provides tours of the treatment facility as well as presenting videos of reclamation, watershed preservation, and pollution prevention. NSD has developed a user-friendly guide.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. Audited Annual Financial Report, Napa Sanitation District, FY 2003-2004.

4. Napa Sanitation District Options and Opportunities for Governance, Tracy Geraghty, December 2004.

5. Napa Sanitation District Collection System, Napa Sanitation District website, http://www.NapaSanitationDistrict.com/ [4/18/05]

6. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004, State Water Resources Control Board, May 2004.

7. Wastewater Discharge Requirements for Napa Sanitation District, Order No. R2-2002-0111, California Regional Water Quality Control Board, Dated September 2002

3

NAPA BERRYESSA RESORT IMPROVEMENT DISTRICT

I. INTRODUCTION

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 shoreline of Lake Berryessa. The NBRID was formed under the Resort Improvement NBRID Law, Public Resources Code 13000, a law created to facilitate the formation of public agencies for providing a wide variety of municipal services in areas best suited for recreational and seasonal uses.

Overlooking Lake Berryessa

Table 3-1
Napa Berryessa RID
Agency Profile

Date Formed	1965
Enabling Legislation	Public Resources Code 13000
Agency Type	Dependent NBRID
Agency Size	4.0 square miles
Services Provided	Water and Sewer
Population in 2004	1,500

Source: Napa LAFCO Survey, 2005; 2000 Census.

NBRID covers an area of approximately 4.0 square miles or 1,899 acres, which includes an adopted sphere of influence of 0.88 square miles. The NBRID is located in eastern Napa County, along the southern edge of Lake Berryessa and is accessible by Highway 128. LAFCO of Napa County estimates that the NBRID has a population of about 1,500 residents. **Table 3-1** and **Figure 3-1** provide a summary and map of the NBRID.

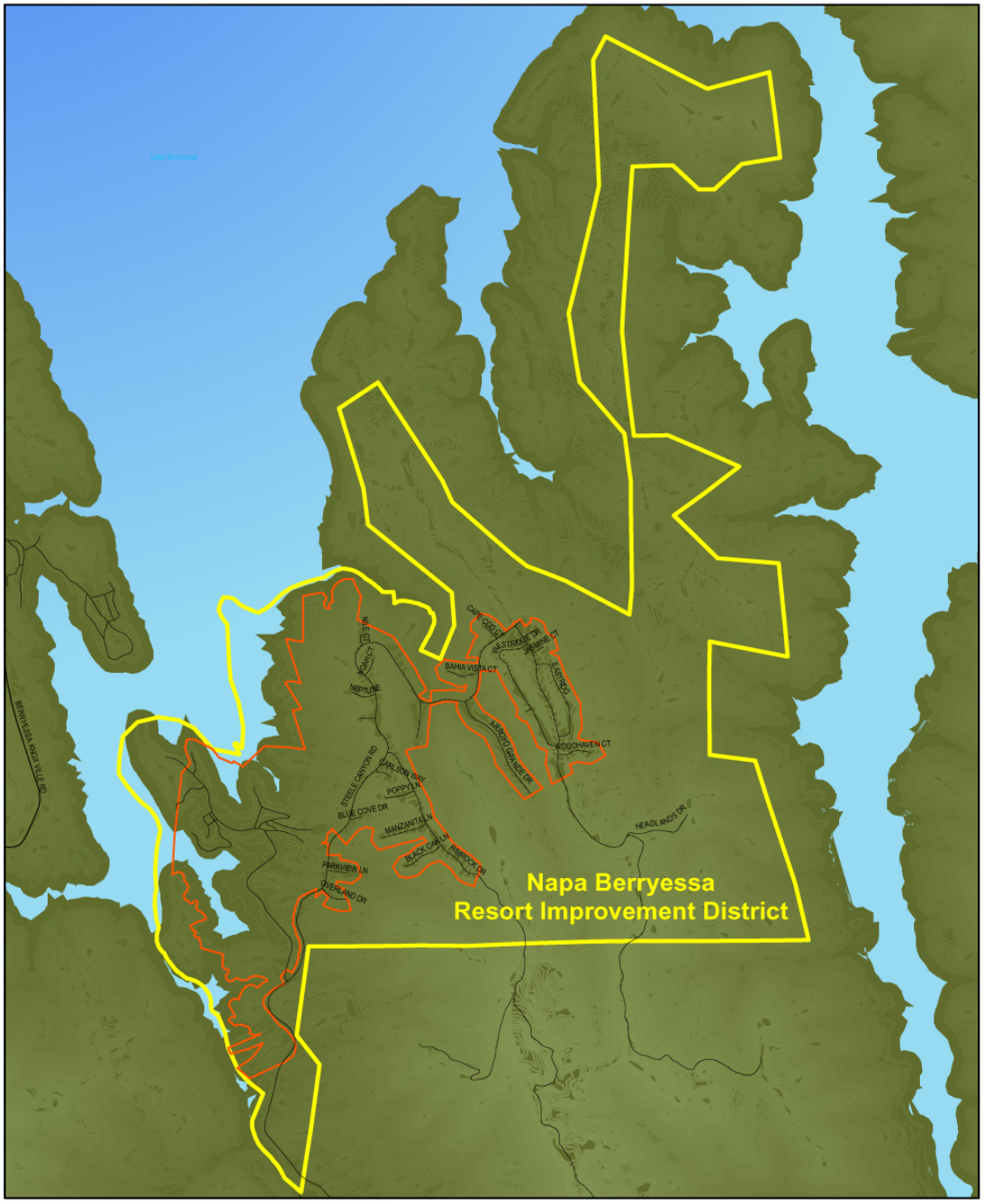

Figure 3.1
Napa Berryessa
Resort Improvement District

II. POPULATION GROWTH

This section reviews the NBRID's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR.

Land within NBRID is regulated under the County of Napa General Plan and zoned "Agricultural Watershed," "Residential Country," and "Planned Development." Agricultural Watershed and Residential Country zoning standards require minimum parcel sizes of 160 and 10 acres, respectively. Land outside NBRID is designated as "Agriculture, Watershed, Open Space." This land use designation discourages LAFCO from approving annexation proposals 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.

The majority of development in NBRID has occurred in the Planned Development Zone. Unlike other zones requiring very low density development, due to large minimum lot sizes, parcels zoned for Planned Development are not required to have a minimum parcel size. This provision allows for additional density, including residential and commercial uses, to occur in the affected portions of Berryessa Highlands for existing or new lots upon the approval of a modified or new use permit. NBRID's anticipated buildout is approximately 2,000 residential units, which is based on original development plans for the area.

Managing future growth is of critical concern to voters in Napa County. Future growth within NBRID as well as the surrounding unincorporated areas is limited by growth control measures passed by the voters in Napa County. In the 1980s, the voters approved Measure A, which limits growth in the unincorporated area to 1% annually. Growth is limited to 1% of outstanding building permits in any given year. In the 1990s, voters approved Measure J, requiring that any conversion of agricultural land must be approved by two-thirds of voters. These two measures play an important role in determining future growth in the County.

The Comprehensive Water Service Review prepared by LAFCO of Napa County estimated that NBRID had a service population of 1,534 in 2004 based on a calculation methodology authorized by Title 22 of the California Water Code. Although the NBRID has a large buildout potential, growth will be limited over the life of this study due to General Plan land uses, established growth controls in Napa County, and limited housing demand. The Federal Bureau of Reclamation is also considering redevelopment scenarios for Steele Park Resort which will convert the mobile home park from its present year-

round use to seasonal uses, potentially affecting future population residing within NBRID's boundaries.[1]

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of Napa Berryessa Resort Improvement (NBRID) based on wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with NBRID staff.

Table 3-2
Napa Berryessa RID
Wastewater System

Connections	331
Residential	330
Non Residential	1
Sewer Lines (mi.)	6.4 miles
Gravity Lines	5.2 miles
Force Mains	1.2 miles
Lift Stations	4 stations
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

Wastewater System Overview

The NBRID comprises approximately 560 parcels, of which the majority of parcels are for residential uses. The NBRID provides sewer services to 331 connections, of which 330 are residential connections and one is the Steele Park Resort. The NBRID has a total of 6.4 miles of sewer lines: 5.2 miles are gravity fed lines and 1.2 miles are force mains. With respect to infrastructure age, all of the sewer lines are between 25 to 50 years old. **Table 3-2** summarizes the NBRID's wastewater system.

NBRID Treatment Plant

NBRID's wastewater treatment system consists of an extended aeration wastewater treatment plant with final disposal by spray irrigation. Wastewater is initially treated by an extended aeration wastewater treatment plant, followed by three holding basins, from which secondarily treated wastewater is routed to the spray irrigation system. The system also utilizes four fields with a runoff collection basin. The basin collects irrigation field runoff which is pumped back to the top of the field. Surface water drainage is to Lake Berryessa.

[1] Steele Park Resort is one of seven concessionary resorts under contract with the Bureau of Reclamation to provide commercial and recreational services to the public at Lake Berryessa. The resort rents 142 mobile home spaces, where tenants can live in their mobile home for up to 175 days annually (no more than 90 consecutive days). Daytime population peaks at 2,500 from May through September. The Bureau is developing a comprehensive plan for the redevelopment and management of visitor services at Lake Berryessa to support traditional, short-term, and diverse outdoor recreation opportunities for the public.

NBRID generates 10 to 20 tons of sludge annually. Sludge is first wasted from the primary aeration tank and temporarily stockpiled in the second, unused aeration tank for dewatering and condensing. A drying bed is used to dry portions of sludge before the tank is pumped out and the contents taken to the sludge pond for further drying and decomposition. The sludge is taken to a disposal site on a knoll. During winter when water accumulates in the ponds, the water is pumped to the treatment plant for treatment. On average, the sludge remains in the pond for a year before it is moved. At the disposal site, the sludge is treated like compost and is turned and weeded yearly. Due to RWQCB directives, the sludge will begin to be landfilled this year.

Infrastructure Condition

The NBRID needs to make significant infrastructure improvements to ensure compliance with the requirements of the State of California Health Department and SWRCB. The FY 2003-2004 budget proposes various improvements to upgrade the reliability and effectiveness of the utility's facilities, improve operator safety, and address long term deferred maintenance. Specific projects include an update of plant controls through the use of SCADA (Supervisory Control and Data Acquisition), inflow/infiltration correction improvements, and the increase of storage and disposal capacity and reliability. The NBRID anticipates the preparation of a Master Water/Sewer Facilities Plan that will outline key needs and a Capital Improvement, Renewal and Replacement Program.

Wastewater Service Needs

NBRID serves all developed lots within its jurisdictional boundaries. NBRID does not currently serve areas outside its jurisdictional boundary. Average annual municipal flow, including infiltration, is 0.145 mgd. The treatment plant has a design capacity of 0.215 mgd. NBRID indicates that wastewater service needs could double from 271 to 566 connections by buildout. However, residential growth within the timeframe of the MSR will be limited due to low housing demand and County measures limiting growth to one percent annually. NBRID has adequate capacity to meet expected wastewater treatment demands (**Table 3-3)**.

Table 3-3
Napa Berryessa RID
Wastewater Flow and System Capacity

Type of Connection	Number	
• Domestic	330	
• Commercial/Industrial	1	
• Total	331	
Type of Wastewater Flow	**Flow (mgd)**	**Design Capacity**
• Municipal Flow	0.105	0.175
• Industrial Flow	0.000	0.000
• Infiltration	0.040	0.040
• Annual Flow	0.145	0.215
Peak Daily Wet Weather	0.165	0.165

Source: Napa LAFCO Survey, 2005.

IV. FINANCIAL ISSUES

This section reviews the financial status of Napa Berryessa Resort Improvement NBRID's Wastewater Enterprise Fund based on audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

In FY 2003-2004, NBRID had revenues of $540,576 and expenses of $490,310 for a total operating income of $50,266. These totals include both water and wastewater operations. The present year surplus contrasts with a shortfall of $29,000 in FY 2002-2003. The NBRID receives 92% of its revenue from service charges. Maintenance and operations expenses comprise 79% of total expenses (See **Table 3-4**). However, a budget shortfall is projected for FY 2004-2005 due to an estimated $230,000 projected in building and structural repairs and

Table 3-4
Napa Berryessa RID
Income and Expense Statement

Revenues	Amount
Property Taxes	$35,402
Charges for Services	$496,704
Miscellaneous Revenue	$8,470
Expenses	
Services and Supplies	$388,532
Depreciation	$40,375
Bldg and Improvements	$60,503
Equipment/Other	$900
Operating Income	**$50,266**

Source: County Budget Unit Revenue and Expenditure Detail, FY 2003-2004 Actuals.

improvements. As discussed later, reserves are being used to address the shortfall.

Balance Sheet

In FY 2003-2004, NBRID had $969,655 in total assets and $55,548 in total liabilities. The NBRID had $527,145 in current assets including cash, accounts receivable and short term investments. Long term assets of land, buildings, and improvements are historically valued at $1.5 million. Due to the age of the assets, two-thirds of the asset value has been depreciated over the past 40 years. The NBRID has sufficient current assets to meet its liabilities The NBRID has no long term debt. However, the age of the NBRID's infrastructure does present a long-term liability for the community.

Table 3-5
Napa Berryessa RID
NBRID Balance Sheet

Assets	**Amount**
Current Assets	$527,145
Long Term Assets	$442,510
Total Assets	$969,655
Total Current Liabilities	$55,548
Net Assets	
Invested in Capital Assets	$442,510
Unrestricted Equity	$471,597
Total Net Assets	$914,107

Source: County Budget Unit Revenue and Expenditure Detail, FY 2003-2004 Actuals.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in NBRID funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

NBRID places annual surpluses into a reserve account, but does not explicitly segregate the funds into operating, rate stabilization, or capital projects. Reserves can be used for capital projects or revenue shortfalls. The NBRID had $184,850 in reserves as of July 2004. However, the NBRID's reserves will be completely exhausted to pay for building and structural repairs to the water system. [For FY 2005-2006, the Board of Supervisors is considering a policy to place at least 3% of the District's services and supplies appropriations into a contingency, to be used to address unanticipated expenditure increases or revenue decreases. The Board is also considering adopting a goal of 5% of appropriations in reserve in case of fiscal distress in future years.]

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies.

Table 3-6
Napa Berryessa RID
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Annual Depreciation on Historical Value of Assets	$40,375
Capital Improvement Fund	$61,000
Infrastructure Replacement and Improvement	$0
Capital Reserve Fund for Infrastructure Expansion	

Source: Napa LAFCO Survey, 2005.

Shown in **Table 3-6**, annual asset depreciation totaled $40,000 in FY 2003-2004, yet only $61,000 was budgeted for capital improvements. The NBRID will be using its entire reserve of $184,850 to pay for building and structural improvements to the water sysytem. The NBRID does not have adequate funds available for the renewal, improvement, or expansion of sewer facilities. The NBRID is considering increasing fees to fund capital improvements and a Master Facilities Plan that will outline a Capital Improvement, Renewal and Replacement Program.

Service Fees and Charges

NBRID charges standby charges, service charges, and connection fees to its customers. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. Topography, geology, age of infrastructure, deferred maintenance, capacity of treatment facilities, and the weather impact the cost of providing services. Fees may also cover debt to be repaid and the cost of infrastructure renewal and replacement. **Table 3-7** details the NBRID sewer fees and connection fees.

FY2003-2004 fees are a combination flat fee and a variable usage fee. The wastewater connection fee is not segregated into a capital reserve fund. According to the NBRID, fees have not been materially adjusted in over a decade. The Board is considering increasing: 1) the sewer base fee by 15%, 2) the connection fee by 150%, and 3) the minimum fee 33% to keep up with inflation, increased labor costs, capital improvements, and compliance with regulatory requirements.[2] However, County staff has indicated that the proposed fee increase may not cover the cost of infrastructure replacement or renewal needs that might be identified in the upcoming Facility Master Plan.

Table 3-7
Napa Berryessa RID
Wastewater Service Fees

Fee Type	Current Amount
Availability or Standby Charge	$10 per parcel per month (total of $120 /year)
Residential Sewer Service Charge	$3.00 flat rate for 1st 1,000 gallons plus $1.14 per Add'l 1,000 gallons
Commercial Sewer Service Charge	Same amount as residential fees
Connection Fee	
Gravity Line	$1,000 per 4" line
Force Main	$3,000 per 4" line

Source: SWRCB Survey, 2003.

Financial Constraints and Issues

In recent years, NBRID has relied on cash reserves to meet operating expenses and its wastewater fees are among the lowest in the County. These policies restrict the ability of the NBRID to generate cash reserves for needed capital improvements, particularly given the age of the wastewater system. Moreover, one-third of NBIRD's revenue is generated from the Steele Park Resort. The federal government is evaluating redevelopment opportunities at Lake Berryessa, which may result in significant operating changes for the Steele Park Resort as well as future revenue losses to the NBRID during the timeframe of this study. These facts underscore the importance of establishing appropriate reserves and updated fee mechanisms to provide the NBRID with adequate revenue to maintain the sewer system.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the NBRID's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with NBRID staff.

[2] Napa Berryessa Resort Improvement NBRID, Board Agenda Letter, March 1, 2005.

Governance

NBRID is a dependent special district. Its board is comprised of the Board of Supervisors. Supervisors conduct the business of the NBRID in accordance with provisions of County Service Area Law. NBRID elections are based on a resident-voter system. The Board of Supervisors is authorized, but has not chosen, to delegate 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 unanimous vote of the directors, the board may consist of five members who are all elected resident voters of the NBRID.

Operations

The Resort Improvement District law originally authorized the NBRID to provide a broad range of municipal services, including water and sanitation, police and fire protection, public recreation, community planning, solid waste disposal, road construction, and numerous other municipal services. The law was amended in 1971 to preclude a district from providing services not already provided as of July 1, 1970. At that time, the NBRID was providing water and sewer services only. The NBRID is now precluded from providing other services. All other municipal services are provided by the County of Napa. No other service agency provides water or wastewater service in NBRID's boundaries.

Under the overall leadership and direction of the Napa County Board of Supervisors, the Napa County Public Works Department is responsible for operating NBRID's water and sewer systems. The County currently employs one full-time licensed operator to manage NBRID's sewer and wastewater treatment system. The operator is on call 24 hours a day, 7 days a week, to respond to emergencies. NBRID and Lake Berryessa RID share a full-time licensed water and sewer treatment supervisor. The County Public Works Department provides engineering, accounting, professional services, and other administrative support activities. The County does not use contractors for the NBRID.

Compliance with Applicable Laws

The California Regional Water Quality Control Board, Central Valley Region, issued Order
No. 95-173 (December 6, 1985) that regulates the amount, process, and quality of wastewater treated and discharged by the NBRID. NBRID is authorized to produce up to a monthly average discharge of 50,000 gallons per day. However, the NBRID appears to be exceeding the monthly average discharge cap due, in part, to needed infiltration improvements. In 2004, the SWRCB issued a final revised Monitoring and Reporting Program (MRP) that requires NBRID to follow specified monitoring procedures, including

the construction of groundwater monitoring wells. However, at present, the SWRCB does not have any tentative or current enforcement orders pending against the NBRID.

Programmatic and Operational Tools

Wastewater operations should have a number of management and operational tools in place to effectively manage their wastewater collection and treatment system. Some of the more important management tools include audited financial statements, workload management programs, master facility plan, SCADA or other electronic monitoring systems, a sewer televising and sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis of this topic is well beyond the scope of this review, it is possible to determine whether an agency has a formal and well-organized program, informal or limited program, or lacks a program.

As shown in **Table 3-8,** the NBRID has audited financial statements. Beyond that, management tools need to be strengthened or developed. For example, the sewer cleaning program (a preventive measure) covers 0.25 miles of line annually, thus requiring 25 years to clean the entire system. The use of a workload management system does not appear to be in place. The NBRID also needs a formal Master Facility Plan to identify infrastructure needs and deficiencies and a capital improvement program and sufficient reserves to implement the required improvements on a timely basis.

Table 3-8
Napa Berryessa RID
Wastewater Management Tools

Type of Program	Formal Program	Limited or Informal	Needed
Audited Financial Statement	☑	☐	☐
Enterprise Reserve Policy	☐	☐	☑
Workload Management System	☐	☑	☐
Sewer Line Cleaning Program	☐	☑	☐
Master Facility Plan	☐	☐	☑
Capital Improvement Plan	☐	☑	☐

Shared Arrangements

Sharing facilities, equipment, and personnel with other governmental agencies can be an effective way to achieve cost savings. NBRID is indirectly managed by the Napa County Flood Control and Water Conservation NBRID, which in turn, has an informal arrangement with County Public Works for administrative and operational support. NBRID thus 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 NBRID with access to a wide range of administrative and

operational support, including billing and collections, engineering, and maintenance personnel.

NBRID is located near Spanish Flat Water. Both agencies provide water and sewer services. Their proximity to one another, similar services, and shared interests regarding the Bureau's resort plans offer the potential for shared arrangements. The primary difference is that Spanish Flat is an independent special district while NBRID is a dependent district. Currently, both districts have separate collection systems and wastewater treatment plants. Neither agency shares its equipment, personnel, or facilities. Informal discussions with County and NBRID staff indicate that sharing arrangements are complicated since many of NBRID's functions are provided via contract with Napa County.

NBRID maintains an informal relationship with LBRID to share staff, equipment, and materials on a need basis, which 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. However, the NBRID does not participate in any joint powers authority or memorandums of understanding with other agencies, nor does it participate in insurance pools and purchasing agreements with the County of Napa to reduce overall service costs. The NBRID did not identify potential opportunities to share facilities or implement other programs to improve their collection and treatment services.

VI. PUBLIC ACCOUNTABILITY

NBRID meetings are conducted on a need basis at the County of Napa's Administration Building and are open to the public. Regularly scheduled meetings provide an opportunity for the NBRID's constituents to ask questions of their governing board, while helping to ensure that service information is being effectively communicated to the public. In compliance with State law, the RID Board appoints one of its members as president and appoints a secretary during the first meeting of the year.

NBRID provides an annual summary of past and projected revenues and expenditures relating to its water and wastewater service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public may comment and offer suggestions with respect to expenditures. In addition to enhancing the accountability of the governing board, the budget process provides a clear directive to staff with respect to prioritizing NBRID resources.

The County of Napa maintains a website with information regarding NBRID. Agendas and minutes for the past year can be found at http://www.co.napa.ca.us/agendanet/. Budgetary information can also be accessed via the internet at http://www.co.napa.ca.us/Gov/ by selecting the icon for budget and finances on the

County website. These two sites provide the latest information on NBRID, including its revenues, expenditures, and capital plans. The NBRID also mails fliers to customers with respect to sewer and water charges.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. U.S. Census, 2000. Demographic Profiles

4. Wastewater Discharge Requirements for Napa Berryessa Resort Improvement NBRID, Order No. 95-173, California Regional Water Quality Control Board, Central Valley Region, Dated June 28, 1995

5. Napa County Budget, FY 2003-2004 and FY 2004-2005.

6. "Proposed water and sewer rates and connection fee increases," Napa Berryessa Resort Improvement NBRID, Board Agenda Letter, March 1, 2005.

7. Correspondence with AnnaMaria Martinez, Assistant Engineer, County of Napa

8. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

9. Future Use and Operations of Lake Berryessa, Draft Environmental Impact Statement, SCH Number: 2003124004.

10. County of Napa General Plan

11. Resort Improvement NBRID Law, Section 13000 of the Public Resources Code

4

LAKE BERRYESSA RESORT IMPROVEMENT DISTRICT

I. INTRODUCTION

The Lake-Berryessa Resort Improvement District (LBRID) was established in 1965 to provide potable water and sewer services to a planned and recreational community (Berryessa Estates) along the northwestern shoreline of Lake Berryessa. The District was formed under the Resort Improvement District Law, Public Resources Code 13000, a law created to facilitate the formation of public agencies for providing a wide variety of municipal services in areas best suited for recreational and seasonal uses.

Putah Creek Intake

Table 4-1
Lake Berryessa RID
Agency Profile

Date Formed	1965
Enabling Legislation	Public Resources Code 13000
Agency Type	Dependent District
Agency Size	3.2 square miles
Services Provided	Water and Sewer
Population in 2004	549

Source: Napa LAFCO Survey, 2005.

LBRID covers an area of approximately 3.0 square miles or about 2,030 acres. The adopted sphere of influence is 0.35 square miles (225 acres), which is less than 15 percent of the district's size. The LBRID is located in eastern Napa County, along the border of Putah Creek, a tributary to Lake Berryessa. The LBRID is accessible by Knoxville Road off Highway 120. Based on County of Napa estimates, LBRID currently serves 549 residents. **Table 4-1** and **Figure 4-1** describe and illustrate LBRID's physical boundaries.

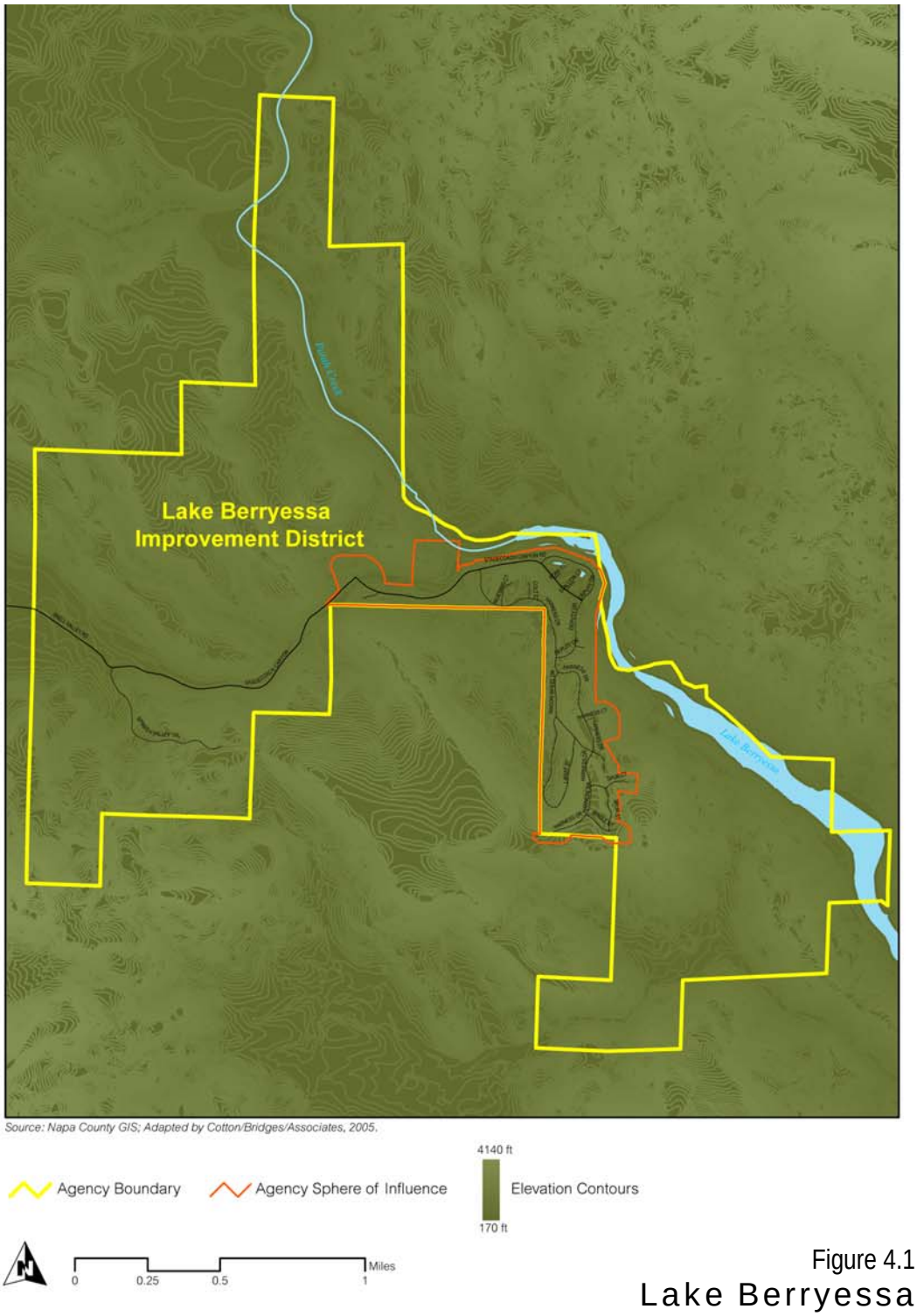

Figure 4.1
Lake Berryessa
Resort Improvement District

II. POPULATION GROWTH

This section reviews the LBRID's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR.

Land within LBRID is regulated under the County of Napa General Plan and zoned "Agricultural Watershed," "Residential Country," and "Planned Development." Agricultural Watershed and Residential Country zoning standards require minimum parcel sizes of 160 and 10 acres, respectively. Land outside LBRID is designated as "Agriculture, Watershed, Open Space". This land use designation discourages LAFCO from approving annexation proposals 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.

The majority of development in LBRID has occurred in the Planned Development Zone. Unlike other zones requiring very low density development, due to large minimum lot sizes, parcels zoned for Planned Development are not required to have a minimum parcel size. This provision allows for additional density, including residential and commercial uses, to occur in the affected portions of Berryessa Estates for existing or new lots upon the approval of a modified or new use permit. LBRID's anticipated buildout is approximately 2,000 residential units, which is based on original development plans for the area.[1]

Managing future growth is of critical concern to voters in Napa County. Future growth within LBRID as well as the surrounding unincorporated areas is limited by growth control measures passed by the voters in Napa County. In the 1980s, the voters approved Measure A, which limits growth in the unincorporated area to 1% annually. Growth is limited to 1% of outstanding building permits in any given year. In the 1990s, voters approved Measure J, requiring that any conversion of agricultural land must be approved by two-thirds of voters. These two measures play an important role in determining future growth in the County.

The Comprehensive Water Service Review prepared by LAFCO of Napa County estimated that LBRID had a population estimated at 549 residents in 2004 based on a calculation methodology authorized by Title 22 of the California Water Code. The District was initially envisioned to accommodate second "vacation" homes, but instead is occupied primarily by permanent residents. Although the LBRID has a large buildout potential, growth will be limited over the life of this Municipal Service Review due to General Plan land uses, established growth controls in Napa County, and limited housing demand.

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1 In 1975, the County of Napa and Contra Costa County sued, alleging the developer, Labry Corporation, had misled investors by promising the construction of certain amenities in 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, including a boat launch, a pier, campground site, and marina.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of Lake Berryessa Resort Improvement District based on a review of wastewater reports and treatment plant design, capital improvement program, and interviews with LBRID staff.

Wastewater System Overview

The LBRID contains approximately 351 parcels, of which only 163 have been developed. The District provides sewer services to these residential connections. Shown in **Table 4-2**, LBRID has 7.5 miles of sewer lines: 6.5 miles are gravity fed lines and 1.0 miles are force mains. The District also has three lift stations. With respect to infrastructure age, nearly all the sewer lines are 25 to 50 years old with only 1 percent being less than 25 years old. The District's WWTP provides secondary level treatment.

Table 4-2
Lake Berryessa RID
Wastewater System

Connections	163
Residential	163
NonResidential	0
Sewer Lines (mi.)	7.5 miles
Gravity Lines	6.5 miles
Force Mains	1.0 miles
Lift Stations	3
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

District Treatment Facilities

LBRID's wastewater flows through approximately 6.5 miles of the sewer collection system, including 3 lift stations, from which it is pumped to a 91,000 gallon above-ground holding tank. From the tank, the wastewater is pumped through a 1 mile long force main into two percolation/evaporation ponds, followed by gravity flow into five percolation/evaporation ponds (two of which are not currently regulated by the State's wastewater discharge requirements). The wastewater is not disinfected prior to discharge to the ponds. The ponds are best classified as "aerobic-anaerobic facultative stabilization ponds." The ponds are earthen and not equipped with supplemental mechanical or diffused-air aeration systems. The wastewater system for LBRID was not originally designed to accommodate the number and year round uses. As discussed later, design flaws in the District's system and lack of

repairs is resulting in significant infiltration/inflow as well as wastewater spills. This topic is discussed later.

Infrastructure Condition

LBRID has not recently done a formal assessment of its infrastructure condition and needs. According to the FY 2003-2004 budget, the District budgeted a limited amount of funds to upgrade the reliability and effectiveness of the utility's facilities, improve operator safety, and address a sizable inventory of deferred maintenance projects. FY 2003-2004 wastewater projects included inflow and infiltration correction improvements, a new spray irrigation system in the pond area, and various pond improvements. FY 2004-2005 projects include the continuation of needed inflow/infiltration correction improvements. However, in a memorandum issued by the California Regional Water Quality Control Board, staff claimed that the LBRID required more than $1 million in funds to repair manholes, make pipeline spot repairs, and replace 20% of all the sewer lines in the District.

Wastewater Service Needs

The LBRID provides services to all developed lots within its jurisdictional boundary. LBRID does not currently serve areas outside its jurisdictional boundary. Summarized in **Table 4-3**, the LBRID indicates that service needs could double from 163 to 343 connections by buildout, all residential ones. However, residential growth within the timeframe of the MSR is anticipated to be limited due to limited demand for housing,

Table 4-3
Lake Berryessa RID
Wastewater Flow and System Capacity

Connections	Current	
• Domestic	163	
• Commercial/Industrial	0	
• Total	163	
Average Flow (mgd)	**Current Flow in mgd**	**Design Capacity**
• Annual Municipal Flow	0.024	0.024
• Annual Industrial Flow	0.000	0.000
• Annual Infiltration	0.010	0.010
• Average Annual Flow	0.034	0.034
Peak Daily Wet Weather	0.084	0.084

Source: Napa LAFCO Survey, 2005.

county growth control measures, and land use restrictions. Even if housing demand was present, the wastewater treatment plant has inadequate capacity to serve new demands.

IV. FINANCIAL ISSUES

This section reviews the financial status of Lake Berryessa Resort Improvement District's Wastewater Enterprise Fund based on audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

In FY 2003-2004, LBRID had revenues of $385,296 and expenses of $476,323, resulting in a negative operating income of $91,027. These totals include water and wastewater operations. The present shortfall is being funded by the District's Fund Balance. Thus, net income is $11,739. LBRID receives 87% of its revenue from service charges. Maintenance and operations expenses comprise 63% of total expenses, depreciation and debt service comprise 31%. Non-operating revenues from a special tax comprise a large share of revenue dedicated to specific projects will sunset in 2010. **Table 4-4** provides a summary of income and expenses.

Table 4-4
Lake Berryessa RID
Income and Expense Statement

Revenues	**Amount**
Property Taxes	$24,308
Charges for Services	$336,763
Miscellaneous Revenue	$24,225
Expenses	
Services and Supplies	$298,510
Depreciation	$75,048
Debt and Assets	$102,765
Operating Inc./(Exp.)	**($91,027)**
Non-Operating Revenue	$102,766
Net Income	**$11,739**

Sources: County Budget Unit Revenue and Expenditure Detail, FY 2003-2004 Actuals.

Balance Sheet

In FY 2003-2004, LBRID had $1,635,198 in total assets and $24,395 in total liabilities. The NBRID had $356,659 in current assets including cash, accounts receivable and short term investments. Long term assets of land, buildings, and improvements are historically valued at $2.0 million. Due to the age of the assets, much of the asset value has been depreciated over the last forty years. The District's debt currently consists of a $300,000 loan taken out for various improvements. Annual payments of $70,000 paid from the recently adopted tax will end in 2007. Unrestricted equity totaled $471,597. However,

Table 4-5
Lake Berryessa RID
Balance Sheet

Assets	**Amount**
Current Assets	$527,145
Long Term Assets	$442,510
Total Assets	$969,655
Total Current Liabilities	$55,548
Net Assets	
Invested in Capital Assets	$442,510
Unrestricted Equity	$471,597
Total Net Assets	$914,107

Sources: Napa LAFCO Survey, 2005; Napa County Combining Statement of Fund Net Assets for Nonmajor Enterprise Funds, June 30, 2004

as discussed later, the age of the District's infrastructure does present a long-term liability for the community.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

LBRID places annual surpluses into a reserve fund, but does not segregate the funds into operating, rate stabilization, or capital projects reserves. Reserves can be used for capital projects or revenue shortfalls. District reserves totaled $253,000) as of July 1, 2004. In recent years, the District has used its cash reserves to pay for operating expenses. Therefore, there are limited funds to make necessary capital improvements. [For FY 2005-2006, the Board of Supervisors is considering a policy to place at least 3% of the District's services and supplies appropriations into a contingency for future unanticipated expenditure increases or revenue decreases. The Board is also considering adopting a General Reserve goal of 5% of appropriations in reserve in case of fiscal distress in future years.]

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (sewer lines, wastewater treatment plant, facilities, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization. Inadequate attention or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies.

Shown in **Table 4-6**, annual asset depreciation totaled $75,048 in FY2003-2004, yet only $65,000 was budgeted for capital improvements. The District does not have

Table 4-6
Lake Berryessa RID
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$75,048
Capital Improvement Budget	$65,000
Capital Reserve Fund for Infrastructure Replacement and Improvement	$0
Capital Reserve for Infrastructure Expansion	

Source: Napa LAFCO Survey, 2005.

funds available for facility renewal, improvement, or expansion. LBRID is thus inadequately positioned to fully maintain its infrastructure, replace aging components, or serve new development. The District is considering increasing its sewer fees to fund a Wastewater Facility Master Plan, capital improvements, and recapitalization needs.

Service Fees and Charges

Fees, charges, and taxes are the elements most visible to the public. Setting fees is a complex task and requires predicting the fixed and variable costs of providing services, and translating costs into a rate structure. In evaluating rates of different agencies, low rates do not necessarily indicate efficiency. Agencies in built-out areas may need only to maintain the integrity of current infrastructure and service levels, while agencies in fast growing areas may need to plan for expansion as well. Topography, geology, age of the infrastructure and deferred maintenance, and treatment capacity all impact the cost of providing services.

Table 4-7
Wastewater Service Fees

Fee Type	Current Amount
Availability or Standby Charge	T-1: $479/parcel for developed real property T-2: $275 per parcels with structures; $137.50 per parcel without structures
Residential Sewer Service Charge	$5.00 for 1st 1,000 gallons +$0.96 per Add'l 1,000 gallons
Commercial Sewer Service Charge	Same amount as residential fees
Connection Fee Gravity Line Force Main	 $1,000 per 4" line $3,000 per 4" line

Source: SWRCB Survey, 2003.

Table 4-6 details the District sewer fees and charges. FY2003-2004 fees are a combination of a flat availability fee and variable usage fee. The connection fees are not segregated into a capital reserve fund. Fees have not been materially adjusted in over a decade. The Board is considering increasing: 1) the sewer base fee by 35%, 2) the connection fee by 150%, and 3) the base fee 35% to keep up with inflation, increased labor costs, capital improvements, and regulatory requirements. However, the County has noted that the proposed fee increase may not cover the cost of infrastructure replacement or renewal needs that might be identified during the development of LBRID's Facility Master Plan.

Financial Constraints and Issues

The District, like most small utility districts, must fund significant State and federal mandated improvements while generating limited revenues from a small customer base. A 1995 winter storm damaged the District's water and wastewater facilities, consumed cash reserves, and aggravated cash flow problem. In 1996, the Board set forth policies to make District operations self-sufficient, provide capital improvements required by the State, and develop a financial reserve. In FY 1996-1997, the District increased rates and District

voters approved a special parcel tax in FY 1998-1999. In mid 2000, a special tax election passed which generates $60,000 annually to fund specific capital improvement projects and a designated reserve fund. The special tax will continue until 2010. However, after that the District will need to find other sources of revenue to fund Capital Improvement Project for the sewer facilities.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the District's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with District staff.

Governance

Lake Berryessa Resort Improvement District is a dependent district, authorized under the Resort Improvement District Law, Section 3000 of the California Public Resources Code. The governing body consists of the Napa County Board of Supervisors, who are elected to staggered four-year terms by county district voting. 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. The Board of Supervisors is authorized, but has not chosen to; delegate 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 unanimous vote of the directors, the board may consist of five members, all elected resident voters of the District.

Operations

The Resort Improvement law originally authorized the LBRID to provide a broad range of municipal services, including water and sanitation, police and fire protection, public recreation, community planning, solid waste disposal, road construction, and numerous other municipal services. The law was amended in 1971 to preclude a district from providing services not already provided as of July 1, 1970. At that time, the LBRID was providing water and sewer services only. The LBRID is now precluded from providing other services. All other municipal services are provided by the County of Napa. No other service agency provides water or wastewater service in LBRID's boundaries.

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 emergencies. All services are performed with County staff and no contractors are used. In addition to the full-time operator, NBRID and Lake Berryessa RID 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 available to the District on a need basis. Currently, two extra help personnel assist with operations at NBRID and LBRID.

Shared Arrangements

Sharing facilities, equipment, and personnel with other governmental agencies can be an effective way to achieve cost savings. LBRID is indirectly managed by the Napa County Flood Control and Water Conservation District, which in turn, has an informal arrangement with County Public Works for administrative and operational support. LBRID thus 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 personnel.

LBRID is located in a remote area of the County and opportunities for shared arrangements are limited. LBRID maintains an informal relationship with NBRID to share staff, equipment, and materials on a need basis, which 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. However, the District does not participate in any joint powers authority or memorandums of understanding with other agencies, nor does it participate in insurance pools and purchasing agreements with the County of Napa to reduce overall service costs. The District did not identify potential opportunities to share facilities nor implement other programs to improve their collection and treatment services.

Programmatic and Operational Tools

Wastewater operations should have various programs, management, and operational tools in place to manage their wastewater collection and treatment system. Important management tools include audited financial statements, workload management programs, electronic monitoring systems, a sewer televising program and regular sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis is beyond the scope of this MSR, it is possible to determine a formal and well-organized program, informal or limited program, or lacks a program.

Table 4-8
Lake Berryessa RID
Wastewater Management Tools

Type of Program	Formal Program	Limited or Informal	Needed
Audited Financial Statement	☑	❑	❑
Enterprise Reserve Policy	❑	❑	☑
Workload Management System	❑	☑	❑
Sewer Line Cleaning Program	❑	☑	❑
Master Facility Plan	❑	❑	☑
Capital Improvement Plan	❑	☑	❑

Few programs are in place. The sewer cleaning program covers only 0.25 miles of line annually, which means that a particular line would be cleaned only once every 25 years (rather than once a year). The District needs a formal Master Facility Plan to identify infrastructure needs and deficiencies and a capital improvement program and sufficient reserves to implement the required improvements on a timely basis. LBRID's capital improvement program is underfunded and costs for infrastructure needs are not explicitly linked to the present rate structure. Infrastructure appears to be repaired only in an emergency situation.

Compliance with Applicable Laws

The SWRCB, Central Valley Region, issued Order No 95-171 (December 6, 1985) regulating the amount, process, and quality of wastewater treated and discharged by the District. According to Order No 95-171, the District is limited to a monthly average discharge of 35,000 gallons per day. On April 29, 2005, the Regional Board issued an Administrative Civil Liability Order in the amount of $400,000 due to ten spills of domestic wastewater that have occurred since 1998. The most significant of these spills discharged at least 4.1 million gallons to Stone Corral Creek. The spill was due to inflow/infiltration problems in the collection system and lack of capacity in the ponds that were previously identified in engineering studies conducted by the District in 1996. The District had not fully complied with a 1996 Cease and Desist Order requiring facility improvements to address infrastructure deficiencies as well as the inflow and infiltration problems that are causing the spills.

VI. PUBLIC ACCOUNTABILITY

LBRID meetings are conducted on an as-needed basis at the County of Napa's Administration Building and are open to the public. 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. In compliance with State law, the RID Board appoints one of its members as president and appoints a secretary during the first meeting of the year.

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

The County of Napa maintains a website with information regarding LBRID. Agendas and minutes for the past year can be found at http://www.co.napa.ca.us/agendanet/. Budgetary information can also be accessed via the internet at http://www.co.napa.ca.us/Gov/ by selecting the icon for budget and finances on the County website. These two sites provide the latest information on the District, including its revenues, expenditures, and capital plans. The District mails fliers to residents of the district in anticipation of rate or service changes.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. U.S. Census, 2000. Demographic Profiles

4. Wastewater Discharge Requirements for Lake Berryessa Resort Improvement District, Order No. 95-171, California Regional Water Quality Control Board, Central Valley Region, Dated June 23, 1995

5. Napa County Budget, FY 2003-2004.

6. "Proposed water and sewer rates and connection fee increases," Napa Berryessa Resort Improvement District, Board Agenda Letter, 3/1/2005.

7. Administrative Civil Liability (ACL Complaint No. R5-2004-0539), California Regional Water Quality Control Board, Central Valley Region, April 2005.

8. Correspondence with AnnaMaria Martinez, Assistant Engineer

9. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003-April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

10. Resort Improvement District Law, Section 13000 of the Public Resources Code

11. Napa County General Plan

5 NAPA RIVER RECLAMATION DISTRICT

I. INTRODUCTION

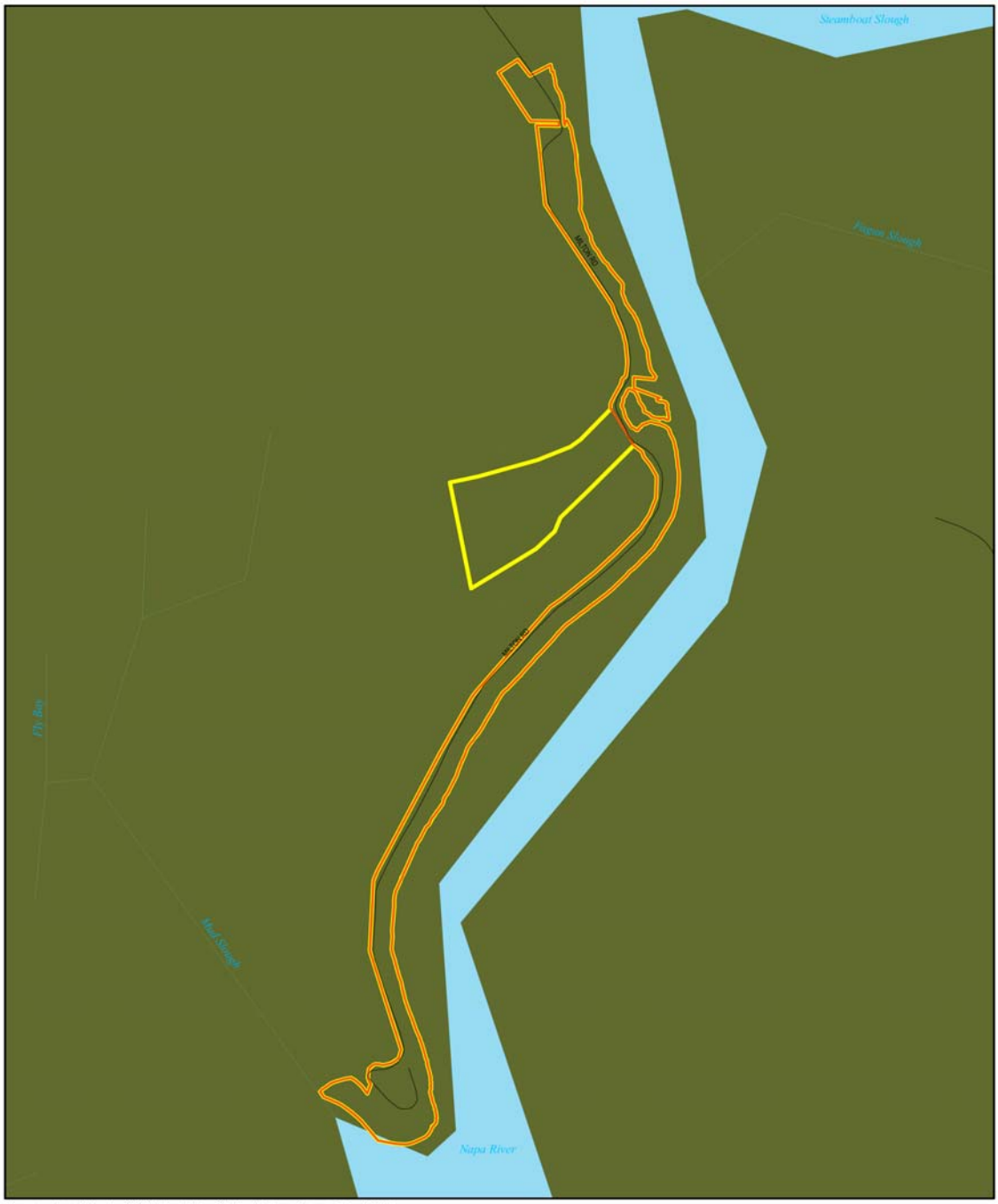
The Napa River Reclamation District (NRRD) was originally established in 1974 to maintain and improve an existing levee serving an unincorporated community in southern Napa County called Edgerly Island. The District was originally formed under the Reclamation District Act, Division 15 of the California Water Code §50000, a law created to facilitate the formation of public agencies for flood control services. Following an amendment to state law, NRRD services were expanded in 1984 to include sewer service. This amendment coincided with the District annexing the Ingersoll Subdivision.

Table 5-1
Napa River Reclamation Agency Profile

Date Formed	1974
Enabling Legislation	California Water Code 50000
Agency Type	Independent District
Agency Size	0.12 square miles
Services Provided	Flood Control and Sewer Service
Population in 2000	~400

Source: Napa LAFCO Survey, 2005.

NRRD encompasses an area of 0.12 square miles or 74 acres, which includes an adopted sphere of influence of 53 acres. The District is located eight miles southwest of the City of Napa, along the western edge of the Napa River near Edgerly Island. According to the District, NRRD serves a maximum population of approximately 400 residents. **Table 5-1** provides basic statistics of the District and **Figure 5-1** illustrates the general location.



Source: Napa County GIS; Adapted by Cotton/Bridges/Associates, 2005.

Agency Boundary
Agency Sphere of Influence
4140 ft
Elevation Contours
170 ft
Miles

Figure 5.1
Napa Reclamation District

II. POPULATION GROWTH

This section reviews the District's land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR.

Development densities for the County of Napa are identified under its zoning standards. The principal zoning standard for parcels within the Edgerly Island and Ingersoll Subdivisions is "Residential Single: Airport Compatibility."[1] This zoning standard requires a minimum parcel size of 8,000 square feet, which is equivalent to 0.18 acres. A zoning standard of "Agricultural Watershed: Airport Compatibility" is assigned to the majority of land adjacent to both subdivisions, which requires a minimum parcel size of 160 acres.

Land outside NRRD is similarly constrained and is not anticipated to accommodate future residential or commercial growth. The land is designated as "Agriculture, Watershed, Open Space" which, under County zoning regulations, requires a minimum parcel size of 160 acres. This land use designation discourages LAFCO from approving annexation proposals 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.

Managing future growth is of critical concern to voters in Napa County. Future growth within NRRD as well as the surrounding unincorporated areas is limited by growth control measures passed by the voters in Napa County. In the 1980s, the voters approved Measure A, which limits growth in the unincorporated area to 1% annually. Growth is limited to 1% of outstanding building permits in any given year. In the 1990s, voters approved Measure J, requiring that any conversion of agricultural land must be approved by two-thirds of voters. These two measures play an important role in determining future growth in the County.

The Comprehensive Water Service Review prepared by LAFCO of Napa County estimated that NRRD had a population estimated at 455 residents in 2004 based on a calculation methodology authorized by Title 22 of the California Water Code. The District only has a few remaining vacant lots which could be developed. Growth will be limited over the life of this Municipal Service Review due to General Plan land uses, established growth controls in Napa County, limited remaining residential lots, and limited housing demand.

[1] The Airport Compatibility overlay standard signifies that the area is located in close proximity to the Napa County Airport and that development standards must be compatible with airport operations. In addition, there are two parcels located within the District that are zoned "Marine Commercial: Airport Compatibility". There are no minimum parcels for this zoning standard.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of Napa River Reclamation District based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff.

Wastewater System Overview

The District provides wastewater collection and treatment services to 138 developed parcels. All the connections are for residential uses. Only 16 parcels remain within the District as undeveloped. The NRRD is mostly surrounded by State Fish and Game property, called the Napa-Sonoma Marsh. No residential developments in this area are planned. The District has 3.0 miles of sewer lines: 1.5 miles are gravity fed and 1.5 miles are force mains. All of the sewer lines are less than 25 years old. **Table 5-2** summarizes some of the more pertinent infrastructure of the District's wastewater system.

Table 5-2
Napa River Reclamation
Wastewater System

Connections	138
Residential	138
Non Residential	0
Sewer Lines (mi.)	3.0 miles
Gravity Lines	1.5 miles
Force Mains	1.5 miles
Lift Stations	15 stations
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

NRRD's wastewater treatment process consists of 15 septic tanks, 15 step stations and pumps, one sewer treatment facility, 10 underground mounds for filtration and 3 storage ponds. The plant was built in 1984. Wastewater is gravity fed from residences to one of 15 community septic tanks where solids settle. Once effluent levels in the community septic tank exceed a designated level, effluent is pumped to the central sewer treatment facility and into a system of ten underground mounds for percolation and chlorination. After disinfection, treated effluent is stored and recirculated in three storage ponds covering an area of 9.5 acres. "Pond 3" has a manmade island area for enhancing wildlife. NRRD's wastewater discharge permit authorizes discharge of up to 82,000 gpd of secondary treated effluent into Mud Slough. However, discharge has not commenced nor is likely to occur, due to adequate storage and evaporation capacity within the ponds.

Wastewater Treatment Facilities

Infrastructure Condition

The District has made strides in recent years to improve the condition of its sewer collection system and wastewater treatment plant. Following an earthquake in 2000, the District received a $100,000 grant from the Office of Emergency Services to inspect and improve the sewer collection system. Improvements effectively addressed any existing inflow and infiltration issues present in the collection system. However, the wastewater treatment plant needs various improvements to extend its useful life. The District is in the process of replacing faulty valves that feed the treatment beds to ensure reliable loading of the beds. The District is also working on the distribution lines in the mound to ensure proper distribution and working on the mound cover to increase evaporation. Present repairs and improvements will allow the mound to effectively treat 20 to 24 mgd for the next ten years. However, the mound system will eventually need to be replaced at a cost of approximately $200,000 unless lower cost options (such as a trickling filters) are employed.

Wastewater Service Needs

NRRD provides services to all developed lots within its boundary. NRRD does not currently serve areas outside its jurisdictional boundary. Average annual municipal flow totals 0.017 mgd and peak day wet weather flow is 0.020 mgd. The wastewater treatment plant has a design capacity of 0.040; however, the best performance to date has been 0.024. Given that NRRD does not indicate that wastewater service needs will increase over time, the plant is adequately sized for the period of time covered by this MSR (**Table 5-3)**.

Table 5-3
Napa River Reclamation District
Wastewater Flow and System Capacity

Type of Connection	Number	
• Domestic	138	
• Other	0	
• Total	138	
Type of Wastewater Flow	**Wastewater Flow in mgd**	**Design Capacity in mgd**
• Annual Municipal Flow	0.017	0.040
• Annual Industrial Flow	0.000	0.000
• Total Average Annual Flow	0.017	0.040
• Peak Day Wet Weather Flow	0.020	0.040*

Source: Napa LAFCO Survey, 2005.
*Operating Capacity is 0.024 mgd

IV. FINANCIAL ISSUES

This section reviews the financial status of Napa River Reclamation District wastewater enterprise fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

During FY 2002-2003, NRRD had revenues of $78,088 and expenses of $295,407 for a total operating income of $(217,319). The district also had $127,179 in Non-Operating income for a total Net Income of ($90,140). These totals include water and wastewater operations. The District receives all of its operating revenue from service charges, and more than half of its Non-Operating revenue from OES reimbursements. Maintenance and operations expenses comprise 39% of total expenses, charges for services comprise 38% of total revenue, and OES reimbursements comprise 42% of revenue. In FY 2004-2005, the District will not receive revenue from OES reimbursements.

Table 5-4
Napa River Reclmation
Income and Expense Statement

Revenues	**Amount**
Property Taxes	$12,517
Charges for Services	$78,088
Miscellaneous Revenue	$114,662
Expenses	
Salaries and Benefits	$56,514
Services and Supplies	$64,660
Maint. and Operations	$116,765
Depreciation	$57,468
Net Income	**$(90,140)**

Source: NRRD FY 2002-2003 Financial Audit

Balance Sheet

Since FY2003-2004 audited financial statements are not available, balance sheet information from FY2002-2003 is used. NRRD's audited financial statements show $1,316,139 in total assets and $3,924 in total liabilities in FY 2002-2003. The District had $182,301 in current assets including cash, accounts receivable, and short term investments. Long term assets totaled approximately $2 million, of which approximately half has been depreciated. The District has sufficient current assets to meet current liabilities and has no long term debt. The District is currently

Table 5-5
Napa River Reclamation
Balance Sheet

Assets	**Amount**
Current Assets	$182,301
Long Term Assets	$1,133,838
Total Assets	$1,316,139
Total Current Liabilities	$3,924
Net Assets	
Invested in Capital Assets	$1,043,505
Unrestricted Equity	$268,710
Total Net Assets	$1,316,139

Source: NRRD FY 2002-2003 Financial Audit

preparing a FY 2003-2004 audited financial statement.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

NRRD does not have a formal reserve policy – revenues received each year in excess of expenditures are placed in a reserve account for unanticipated expenditures. For FY 2002-2003, the District had unreserved retained earnings of $268,710 and $32,000 in reserves. The District Manager indicates that the reserve currently has a total of approximately $50,000, which can be used to augment operating expenses or pay for capital improvements. Taken together, NRRD has insufficient reserves in place to cover operating expenses, rate stabilization in case of unanticipated changes, and needed capital projects.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention to or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies. NRRD's renewal and replacement cost for the sewer system is about $1.9 million.

Table 5-6
Napa River Reclamation
Capital Replacement Plans

Financial Statistics	FY 2002-2003
Renewal/Replacement Cost	$1.9 million
Depreciation on Assets	$57,468
Capital Improvement Budget	$0
Capital Reserve Fund for infrastructure expansion, construction, & replacement.	$32,008

Source: NRRD FY 2002-2003 Financial Audit

Summarized in **Table 5-6**, annual asset depreciation totaled $57,468 in FY 2002-2003. As of FY 2003-2004, the District's financial statement prepared by the County showed capital reserves of $32,000. This amount does not cover the annual amount of depreciation on

the assets nor ongoing capital improvements needs. The District does not have funds available for facility renewal, improvement, or expansion. NRRD is thus inadequately positioned to fully maintain its infrastructure, replace aging components, or serve new development. The District is considering increasing fees to fund capital improvements and recapitalization.

Service Fees and Charges

NRRD's sole revenue source is customer service fees. The District does not charge standby charges or connection fees to its customers. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. Topography, geology, age of infrastructure, deferred maintenance, capacity of treatment facilities, and the weather impact the cost of providing services. Fees may also cover debt to be repaid and the cost of infrastructure renewal and replacement.

Table 5-7
Napa River Reclamation
Wastewater Service Fees

Fee Type	Current Amount
Availability or Standby Charge	$684/year
Residential Sewer Service Charge	None
Commercial Sewer Service Charge	None
Connection Fee	None

Source: SWRCB Survey, 2003.

Table 5-7 details the District sewer fees and charges. The District is authorized to collect service charges, assessments, and connection fees. The District assesses a parcel tax of $684 per year on the property tax rolls. Due to the District's negative net income, the present sewer fees do not cover total operation and maintenance costs, nor improvements and recapitalization needs. Should significant infrastructure improvements be needed to the sewer system, the District would be unable to fund such improvements.

Financial Issues

The District Manager indicates that the mound system will be able to treat 20 to 24 mgd for an additional 10 years of service after ongoing improvements are made. If the beds that comprise the mound are renovated, they will be repaired one at a time as they come due. The estimated cost is approximately $20,000 per bed or $200,000 total. However, the District is exploring other, lower cost options, such as the purchase of trickling filters. The District plans to place surplus revenue each year in reserves to fund future improvements and can also raise rates if needed to fund the improvements.

The District has used reserves in past years to fund operating revenue shortfalls, litigation expenses, and collection lines. However, funding is very limited and rate increases may be

necessary to make improvements to the treatment system. NRRD is exploring options for disposing wastewater. American Canyon has a new treatment plant and is extending its collection lines down Green Island Road towards the District. A potential option to renovating the mound is to connect NRRD's system to American Canyon's wastewater collection system and convey the District's effluent to the City's wastewater treatment plant.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the District's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with District staff.

History of Organization

NRRD was originally formed in 1974 to maintain and improve an existing levee serving a subdivision on Edgerly Island. The District was initially formed as the Edgerly Island Reclamation District and was sought by property owners to provide enhanced flood protection as a result of damage from winter storms. NRRD began providing levee control for Edgerly Island through an advisory role – actual levee maintenance remained the responsibility of individual property owners. The District began providing sewer service in 1984 following passage of a special amendment to the California Water Code which allowed the District to address a public health notice issued by the Napa County Health Department. The health notice, which resulted in a building moratorium between 1976 and 1984, was issued after the Health Department determined that a number of private septic systems were failing and posed a contamination threat to local groundwater supplies on Edgerly Island. NRRD's responsibilities were therefore expanded to include sewer collection and treatment.

Governance

NRRD is an independent special district organized under the Reclamation District Act, Division 15 of the California Water Code. NRRD is authorized to provide flood control and sewer services. NRRD governing body consists of an elected five-member board of trustees serving staggered four-year terms. A trustee must be a landowner, legal representative, or a designated representative of land in the District. The board exercises complete control over construction, maintenance, and operation of the reclamation works and District affairs. Elections are based on the landowner-voter system, which allows each landowner one vote for each dollar that his/her property was assessed on the last assessment roll. The board is required to elect a president and appoint a secretary to keep account of expenditures.

Operations

NRRD provides sewer and flood control services only. Services are managed and operated by a manager who is appointed by the board of trustees. The current manager is a half-time employee and is a licensed sewer plant operator. The manager is a resident of the district and is on call 24 hours a day, seven days a week to respond to emergencies. The service manager employs three standby operators. Water service is provided by private wells. The 38 homes located on the island side (south of the railroad tracks) receive water via ground wells. The homes on the northern side are provided water by Meyers Water Company via groundwater wells. All other municipal services are provided by the County of Napa.

Historically, NRRD provided levee control for Edgerly Island through an advisory role – actual levee maintenance remained the responsibility of individual property owners. NRRD would make regular inspections for consistency with recommended structural standards and then issue a notice to the affected property owner to make the necessary improvement. Until recently, if a notice went unaddressed, the District would file a nuisance complaint to force the property owner to make the requested improvement. However, the Napa County Superior Court recently determined that the District did not have the authority to issue a nuisance complaint in this manner. Unable to enforce uniform standards, NRRD suspended its advisory services, leaving all oversight of levee control and repairs to property owners.

Programmatic and Operational Tools

Wastewater operations should have a number of programs, management, and operational tools in place to adequately manage their wastewater collection and treatment system. Among others, important management tools include audited financial statements, workload management programs, SCADA or other electronic monitoring systems, a sewer televising program and regular sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis of this topic is well beyond the scope of this review, it is possible to determine whether an agency has a formal and well-organized program, informal or limited program, or lacks a program.

Review of District operations reveals that some programs are in place. The District has audited financial statements, but is behind in preparing its FY 2003-2004 audit. The District has a regular sewer line cleaning program, covering all lines every five years. The District does not have a Master Facility Plan, a formal capital improvement program and adequate funding to pay for current and future improvements. Thus, repairs to the wastewater system are generally made only in response to breakdowns. The fee structure does not appear to be linked to a capital improvement plan.

Table 5-8
Napa River Reclamation District
Wastewater Management Tools

Type of Program	Formal Program	Limited or Informal	Needed
Audited Financial Statement	☑	❑	❑
Enterprise Reserve Policy	❑	❑	☑
Workload Management System	❑	☑	❑
Sewer Line Cleaning Program	☑	❑	❑
Master Facility Plan	❑	❑	☑
Capital Improvement Plan	❑	☑	❑

Shared Arrangements

Historically, NRRD had a working relationship with the Napa County Flood Control and Water Conservation District (NCFCWCD) to utilize their pump station as a supplemental form of flood control. Following the District's formation, the pump station was turned over to the District. Currently, NRRD does not share staff, equipment, and materials with other governmental agencies and is not strategically located adjacent to another service provider. The District also does not participate in any joint powers authority or memorandums of understanding with other wastewater agencies nor does it participate in insurance pools and purchasing agreements with the County of Napa to reduce overall service costs.

Historically, limited opportunities for shared arrangements have been available. The District's small size, arrangement with the County of Napa for administrative support, and location relative to Napa Sanitation District limits opportunities for shared arrangements. However, the treatment system will eventually need repairs and/or replacement and funds are limited. American Canyon completed a new wastewater treatment plant and is extending collection lines down Green Island Road. Given its proximity, it may be possible in the near future to link the District's sewer collection lines to flow to American Canyon's plant, and thus eliminate the need for making improvements to the District's treatment system.

Compliance with Applicable Laws

The State Water Resources Control Board (SWRCB), San Francisco Region, issued Order No 93-119 (October 21, 1993) regulating the amount, process, and quality of wastewater treated and discharged by the District. According to Order No 93-119, the District is limited to a monthly average discharge of 40,000 gallons per day and may discharge up to 82,000 gpd of secondary treated effluent into Mud Slough. The District has not had to discharge treated effluent due to its large holding ponds and therefore has not had compliance issues. The Board does not have any current or tentative enforcement orders against the District.

VI. PUBLIC ACCOUNTABILITY

NRRD board meetings are conducted on the first Tuesday of every month at the Edgerly Island Volunteer Fire Station. Board meetings are open to the public. In addition to electing a president, the board is required to appoint a secretary to keep account of all District expenditures. The secretary may be a member of the board or the public. Currently, the District does not have a website. Budgetary information and other important news regarding district affairs can be accessed by the public by contacting the District Manager.

VII. CITATION LIST

1. Comprehensive Study of Napa River Reclamation District No. 2109, Draft Service Review Report, Local Agency Formation Commission of Napa County, April 2005

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. U.S. Census, 2000. Demographic Profiles

4. Wastewater Discharge Requirements for Napa River Reclamation District, Order No. 93-119, California Regional Water Quality Control Board, San Francisco Bay Region, Dated October 21, 1993

5. Independent Auditor's Report, Napa River Reclamation District No 2109, FY 2002-2003, Moss, Levy, and Hartzheim, April 15, 2004

6. Correspondence with Larry Hoffman, District Manager for NRRD

7. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003-April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

8. California Water Code, Section 50000

9. Napa County General Plan

6 SPANISH FLAT WATER DISTRICT

I. INTRODUCTION

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. The District was formed under the California Water District Law, Division 13 of the California Water Code 34000, a law created to facilitate the formation of public agencies to provide water and sewer services.

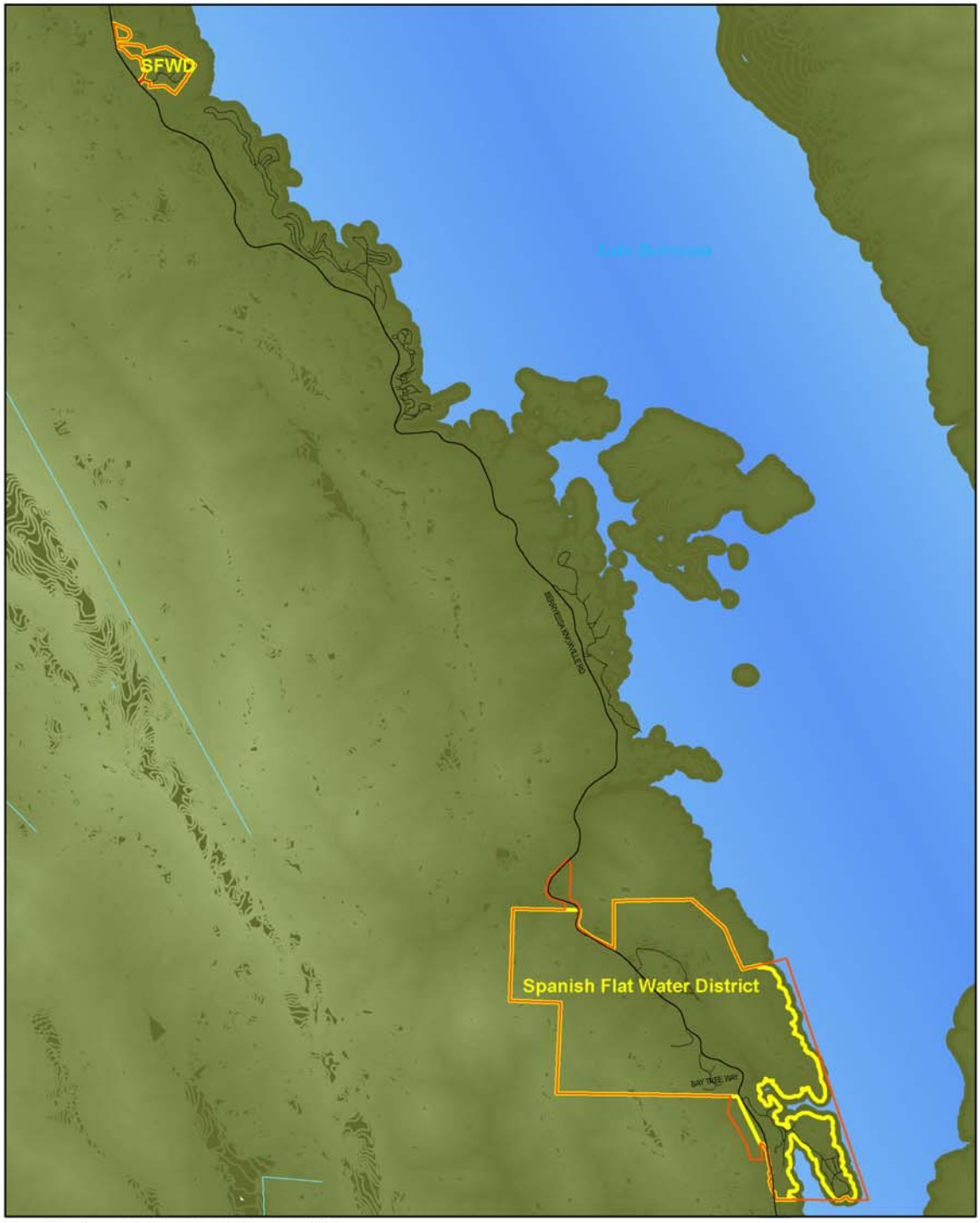
Spanish Flat Resort

Table 6-1
Spanish Flat Water District
Agency Profile

Date Formed	1963
Enabling Legislation	California Water Code 34000
Agency Type	Independent District
Agency Size	1.84 square miles
Services Provided	Water and Sewer
Population in 2000s	1,042
Resort daytime peak	N/A

Source: Napa LAFCO Survey, 2005.

The SFWD covers 1.84 square miles or 1,178 acres. The adopted sphere of influence is 2.07 square miles or 1,325 acres. The District is located in eastern Napa County, along the western border of Lake Berryessa, and is accessible by Knoxville Road off Highway 128. The District is adjacent to the Napa-Berryessa Resort Improvement District. SFWD serves an estimated 423 residents based on the population methodology used in the Water Service Review done by LAFCO of Napa County. **Table 6-1** summarizes District statistics and **Figure 6-1** illustrates its physical boundaries.



Source: Napa County GIS; Adapted by P&D Consultants, 2005.

Agency Boundary
Agency Sphere of Influence
4140 ft
Elevation Contours
170 ft

N
0 0.4 0.8 1.6 Miles

Figure 6.1
Spanish Flat Water District

II. POPULATION GROWTH

This section reviews the District's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR.

SFWD was originally formed to provide water and sewer service for an anticipated 673-acre comprehensive residential and recreational community. Notable plans for the community included the development of a 53-lot residential subdivision to be known as the "Spanish Flat Woodlands." Also included were residences, a commercial center, mobile home court, and cemetery. In 1964, SFWD issued general obligation bonds to finance the purchase of a water system owned by the Berryessa Pines Water Company. Between 1965 and 1977, the District annexed three areas which more than doubled the size of its original service area.

Currently, SFWD serves 46 residential connections and 15 commercial connections in the Spanish Flat service area. One commercial connection serves the 52-space Spanish Flat Mobile Villa.[1] In the Berryessa Pines subdivision, the District serves 75 residential connections only. The Water Municipal Service Review estimated a total service population of 423 in the Spanish Flat area and Berryessa Pines subdivision. The additional 616 residents estimated in the Water Service Review are for the Spanish Flat Resort, which is not provided sewer services by the District. 2000 Census figures show a total population of 670 residents.

The County General Plan designates the District's sphere of influence as "Agricultural," "Watershed," "Rural Residential," and "Open Space." Zoning for this area is comprised of "Agricultural Watershed," "Commercial Limited," "Commercial Neighborhood," "Marine Commercial," and "Residential Single: B-1." Minimum parcel sizes range from 8,000 square feet for Residential Single to 160 acres for "Agricultural Watershed." Land outside the District is designated "Agriculture, Watershed, and Open Space," which discourages LAFCO from approving annexations based on its policy to direct the extension of municipal services away from agricultural land unless it in response to a health or public safety concern.

In 2004, Napa County issued a draft update to its General Plan 2002-2007 Housing Element. The draft identifies potential development sites for 110 new housing units in the Spanish Flats area, including housing for low and moderate income households. To facilitate the production of affordable housing, the draft Housing Element proposes the Board of Supervisors adopt an Affordable Housing Overlay for the affected parcels. This overlay zone provides planning mechanisms to facilitate and encourage housing

[1] Spanish Flat Resort is one of seven concessionary resorts under contract with the Bureau of Reclamation to provide commercial and recreational services to the public at Lake Berryessa. The resort rents 180 recreational home spaces to seasonal residents. The resort is open year round and the daytime population averages 2,000. The Bureau is developing a comprehensive plan for the redevelopment and management of visitor services at Lake Berryessa to support traditional, short-term, and diverse outdoor recreation opportunities for the public.

production. Should such housing on it be built, SFWD could accommodate another 300 residents, which increases its total population from 1,000 to 1,350, but major infrastructure investments would required.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of Spanish Flat Water District based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff.

Table 6-2
Spanish Flat Water District
Wastewater System

Connections	
Residential	78
NonResidential	3
Sewer Lines (mi.)	25
Gravity Lines	2
Force Mains	1
Lift Stations	2
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005

Wastewater System Overview

SFWD has been in full operation since 1963. The District provides water and sewer services to two distinct areas. The District provides services to 75 residences in Berryessa Pines. In the Spanish Flats area, the District serves a few residences, the 52-unit Spanish Flat Mobile Villa, and smaller commercial uses. The District has about 2miles of gravity mains and 1 mile of force mains. With respect to infrastructure, 95% of the sewer lines are just over 40 years of age. The District operates two wastewater treatment plants providing secondary level treatment. **Table 6-2** summarizes SFWD's wastewater system.

Wastewater Treatment Plant

One treatment plant serves the Mobile Villa, Woodlands, and Spanish Flat Center. The plant utilizes an aeration tank, clarifier, and chlorine contact chamber to disinfect effluent. Wastewater is discharged to a 13-acre foot unlined holding pond prior to land application. The District uses a 2.5 acre field owned by SFWD and the 3.7-acre Monticello Cemetery for spray irrigation. The secondary treatment process meets effluent standards required by Title 22 for reclamation purposes.

The second plant serves a limited number of residences in the Berryessa Pines subdivision. Sewage flows to a pump station at the east end of the subdivision and to an extended aeration plant. Effluent from the extended aeration plant is discharged to one of two evaporation-percolation ponds for treatment.

Wastewater Treatment Capacity

The wastewater treatment plant serving the Spanish Flat area receives effluent from 46 residential and 15 commercial connections. This facility receives a dry weather flow ranging from 5,000 to 12,000 gpd and a wet weather flows ranging from 20,000 to 50,000 gpd. The treatment plant is designed to accept 25,000 gpd, and a maximum flow rate of 53,000 gpd. The second wastewater treatment plant receives effluent from 75 homes in Berryessa Pines. District staff indicates that dry weather flow ranges from 4,000 to 5,000 gpd and wet weather flow ranges as high as 11,000 gpd. The design capacity of the plant is unknown.

The District only serves homes located within its jurisdictional boundary and does not have future plans to expand services. Both wastewater treatment plants can adequately accept dry weather wastewater flows as summarized below in **Table 6-4**. District staff indicates that the plants can accommodate peak wet weather flows as well. In 2004, Napa County adopted its 2002-2007 Housing Element, which identified sites for 110 new homes in the Spanish Flat area. A subsequent Environmental Assessment indicates that the proposed 110 units would generate an additional 29,150 gpd of wastewater. Given present

limitations in wastewater treatment capacity, the 110 units would constitute a significant impact requiring mitigation.[2]

IV. FINANCIAL ISSUES

This section reviews the financial status of the Spanish Flat Water District's Wastewater Enterprise Fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

Information on revenues and expenses are for the entire District. The Spanish Flat Water District Financial Report for FY 2003-2004 indicates that revenues were $242,292 and consisted of service charges, connection fees, and other miscellaneous revenue. Total operating expenses were $292,511 and included operating expenses, depreciation, and administrative and general expenses. The District received 72% of its revenue from service charges. Maintenance and operations expenses comprised 64% of total expenses. The District showed a positive net income, only if annual depreciation on assets was not included in the income and expense statement.

Table 6-3
Spanish Flat Water District
Income and Expense Statement

Revenues	**Amount**
Service Charges	$63,981
Connection Fees	$22,000
Misc. Fees	$156,311
Expenses	
Operating Expenses	$188,915
Depreciation	$70,560
Admin and General	$36,036
Operating Inc./(Exp.)	($53,219)
Non-Operating Rev.	($2,269)
Net Income	($55,488)

Source: Spanish Flat Financial Audit, 2004.

[2] Napa County Housing Element 2002-2007 Update and Zoning Amendments: Draft Environmental Assessment, DCE September 2004.

Table 6-4
Spanish Flat Water District
Wastewater Flow and System Capacity

	Berryessa Pines		Spanish Flats	
Connections	**Current**		**Current**	
Domestic	75		46	
Commercial	0		15	
Total	75		61	
Average Flow	**Current Flow in mgd**	**Design Capacity**	**Current Flow in mgd**	**Design Capacity**
Domestic	N/A	N/A	N/A	N/A
Infiltration	N/A	N/A	N/A	N/A
Average Annual Flow	.006	N/A	.015	.025
Peak Daily Wet Weather	N/A	N/A	N/A	N/A

Source: Spanish Flat Water District, 2005.

Balance Sheet

Information on assets and liabilities were not available for the Wastewater Enterprise Fund, but were combined with the Water Enterprise Fund. In FY 2003-2004, the District had $2,251,667 in total assets and $195,178 in total liabilities (being reimbursed by the State of California grants or loans). The District had $54,252 in current assets including cash, accounts receivable and short term investments. Long term assets total $2.8 million, of which $2.1 million is net of depreciation. The District has sufficient current assets to meet current liabilities. The District will incur limited short term debt for its water treatment facility upgrade. The debt will be repaid from funds from the planned formation of an Improvement District.

Table 6-5
Spanish Flat Water District
Balance Sheet

Assets	**Amount**
Current Assets	$54,252
Long Term Assets	$2,197,145
Total Assets	$2,251,667
Total Current Liabilities	$195,178
Net Assets	$2,251,667
Invested in Capital Assets	$1,926,972
Restricted Equity	$78,758
Unrestricted Equity	$50,759
Total Net Assets	**$2,056,489**

Source: Spanish Flat Financial Audit, 2004.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

In FY2003-2004, the SFWD has $78,758 in restricted cash for the Capital Improvement Fund. The District also retains $50,759 in unrestricted cash for the Capital Reserve Fund. The District does not have a rate stabilization or operating reserve fund as is recommended for sanitation and water agencies.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (sewer lines, wastewater treatment plant, facilities, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization. Inadequate attention or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies.

Two major capital projects will begin in 2005 (subject to voter approvals) with an estimated 12-month construction period. Both of these capital projects will be water treatement plants to replace aging and noncompliant water treatment plants. These facilities will cost $1.5 million. Funding will be provided for these projects primarily from California State Funds of $1.4 million and the remainder will be paid from the District. Districtwide the Capital Improvement Budget is $78,758 and the Capital Reserve is $50,759. In 2004, the Board adopted two resolutions establishing Improvement Districts #1 and #2 to fund upgrades to the water treatment facilities at Berryessa Pines and Spanish Flats.

Table 6-6
Spanish Flat Water District
Capital Replacement Plan

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$70,560
Capital Improvement Budget	$78,758
Capital Reserve Fund for Infrastructure improvement	$50,759
Capital Reserve Fund for Infrastructure Expansion	

Source: Spanish Flat Financial Audit, 2003-2004.

Service Fees and Charges

SFWD levies standby fee, service charges, and connection fees to its sewer customers. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. Topography, geology, age of infrastructure, deferred maintenance, capacity of treatment facilities, and the weather all are important factors which affect the cost of providing services. Fees may also cover debt to be repaid and the cost of infrastructure renewal and replacement. **Table 6-7** details the District sewer and connection fees.

Fiscal Year 2003-2004 fees are calculated as a flat rate, with no variation for the amount of wastewater flow. Commercial sewer fees consider the strength of the effluent and amount of treatment required. Shown in **Table 6-7**, the District charges a fee of $37 per residence each month. Connection fees range from $7,000 to $10,500 and are currently not placed in a dedicated fund for capital expansion or replacement. The wastewater connection fee is not currently segregated into a capital reserve fund to fund future expansions to the sewer collection and treatment system.

Table 6-7
Wastewater Service Fees

Fee Type	Current Amount
Availability or Standby Charge	None
Residential Sewer Service Charge	$36.85 per month
Commercial Sewer Service Charge	$25.75 to $78.50 per month
Connection Fee	
Residential Line	$7,000
Commercial Line	$10,500

Source: SWRCB Survey, 2003.

Financial Constraints

The District is working with the State Water Resources Control Board, Central Valley Region, regarding the need for three required groundwater monitoring wells. These wells are anticipated to cost at least $30,000 to purchase and install, with additional costs for annual monitoring. Currently, the District does not have sufficient funds presently to finance these wells. Moreover, the District is incurring increasing expenditures for its aging infrastructure. Finally, SFWD is expending significant funds to improve its water treatment capacity. The District could face significant revenue challenges in the upcoming ten years. Approximately one-quarter of the District's annual revenue is generated from service charges to the Resort, which is under contract with the federal government to provide visitor-related services at Lake Berryessa. However, the federal government is presently evaluating redevelopment opportunities at Lake Berryessa. The Bureau's redevelopment plans may result in significant operating changes for Spanish Flat Resort at the conclusion of its concessionary contract in 2008. Pending final determination, the

District could be subject to a significant loss in revenues within the timeframe covered by this Municipal Service Review.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the District's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with District staff.

Governance

SFWD was organized under the California Water District Law, Division 13, of the California Water Code 34000. Pursuant to that law, the District is empowered to provide water, sewer, waste, storm drainage and hydroelectric services. The District has elected to only provide water and sewer services at this time. The District is the only public agency providing water and sewer service within its jurisdictional boundary. The District's governing body is comprised of an elected five-member board who serve staggered four-year terms. A board member must be a landowner, legal representative, or 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.

Operations

The District employs a total of four employees, of which three are part-time employees. The District has one full-time operator to manage day-to-day operations. The operator-in-training is under direction of a licensed operator. The operator is on call 24 hours a day, 7 days a week, to respond to emergencies. Services are performed with SFWD staff as well as contractors as well. In addition, SFWD hires a maintenance employee and water operator. All three District plant operators have appropriate water and wastewater certifications. The Board members are responsible for oversight and day-to-day administration of the Water District staff. They also provide interaction between local, state, and federal agencies. All other municipal services are provided by the County of Napa. Secretarial duties are performed by the accountant and the Board members.

Shared Arrangements

Sharing facilities, equipment, and personnel with other governmental agencies can be an effective way to achieve cost savings. Currently, SFWD does not does not participate in a joint powers authority or MOU, insurance pools, nor purchasing agreements with other

agencies. However, SFWD is located near NBRID. Currently, both districts have separate collection systems and wastewater treatment plants. Their close proximity, similar services, and shared interests regarding the Bureau's resort plans offer the potential for shared arrangements. Currently, neither agency shares its equipment, personnel, or facilities. However, there is an informal agreement to respond to emergencies if required.

Obstacles to implementing shared arrangements are considerable. Both districts have different authorizing legislation; SFWD is an independent district while NBRID is a dependent district. Informal discussions with SFWD and NBRID staff indicate that sharing arrangements are complicated since many of NBRID's functions are provided via contract with Napa County. Topography also presents significant challenges to sharing facilities, such as treatment plants. According to the District Manager, miles of new mains would need to be constructed; at considerable cost to connect the two districts and a new treatment plant would be needed. The potential costs savings in operations would be difficult to recover.

Programmatic and Operational Tools

Wastewater operations should have a number of programs, management, and operational tools in place to adequately manage their wastewater collection and treatment system. Important management tools include audited financial statements, workload management programs, SCADA or other electronic monitoring systems, a sewer televising program, regular sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis is well beyond the scope of this review, it is possible to determine whether an agency has a formal and well-organized program, informal or limited program, or lacks a program.

The District submitted audited financial statements that combined water and wastewater services. Information was not provided on a capital improvement program or reserve policy. The District currently has a preventive maintenance program consisting of regular sewer cleaning and facility maintenance. However, the District does not have a master plan for its sewer operations. The District mentioned that some formalized programs (e.g., workload management system) may not be as necessary due to the District's small size.

Table 6-8
Spanish Flat Water District
Wastewater Management Tools

Type of Program	Formal Program	Limited or Informal	Needed
Audited Financial Statement	☑	☐	☐
Enterprise Reserve Policy	☐	☐	☑
Workload Management System	☐	☑	☐
Sewer Line Cleaning Program	☑	☐	☐
Master Facility Plan	☐	☐	☑
Capital Improvement Plan	☐	☐	☑

Compliance with Applicable Laws

The District's wastewater treatment plants are regulated by the California Regional Water Quality Control Board, Central Valley Region Order No. 5-00-200 and Order No. 93-236 issued in September 15, 2000 and December 3, 1993, respectively. The SWRCB has assigned a cap for the monthly average dry weather discharge flow of 0.14 mgd for the Berryessa Pines WWTP and a maximum daily discharge of 0.53 mgd and average monthly dry weather discharge flow of 0.025 mgd for the Spanish Flat WWTP. The District was operating within the specified caps, although daily flow information is not available. Conversations with staff from the State Water Resources Control Board, Central Valley Region, indicate that there are no current or pending enforcement orders against the District. The State has ordered the District implement a groundwater monitoring program which the District is complying with. However, SFWD is in process of appealing the State's order for ground water penetration.

VI. PUBLIC ACCOUNTABILITY

SFWD board meetings are conducted on the 2nd Thursday every month at its administration office and are open to the public. 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. In compliance with State law, the SFWD appoints one of its members as president and appoints a secretary during the 1st meeting of the year. The SFWD does not have a website.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. Wastewater Discharge Requirements for Spanish Flat Water District, Order Nos. 5-00-200 (September 15, 2000) and Order No. 93-236 (December 3, 1993), California Regional Water Quality Control Board, Central Valley Region, Dated June 23, 1995

4. FY 2003-2004 Audit, Spanish Flat Water District.

5. Correspondence with Steve Silva, Spanish Flat Water District, District Manager

6. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003-April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

7. Future Use and Operations of Lake Berryessa, Draft Environmental Impact Statement, SCH Number: 2003124004.

8. Napa County Housing Element 2002-2007 Update and Zoning Amendments: Draft Environmental Assessment, DCE, September 2004.

7

CIRCLE OAKS COUNTY WATER DISTRICT

I. INTRODUCTION

Circle Oaks County Water District (COCWD) was formed in 1962 to provide potable water and sewer services to a 2,200-unit planned residential community, called Circle Oaks, in northeast Napa County. COCWD was organized under the County Water District Law, Division 12, Section 30000 of the California Water Code, a law passed to facilitate the formation of special districts providing water, sewer, flood control, recreation, sanitation, fire, and electric services.

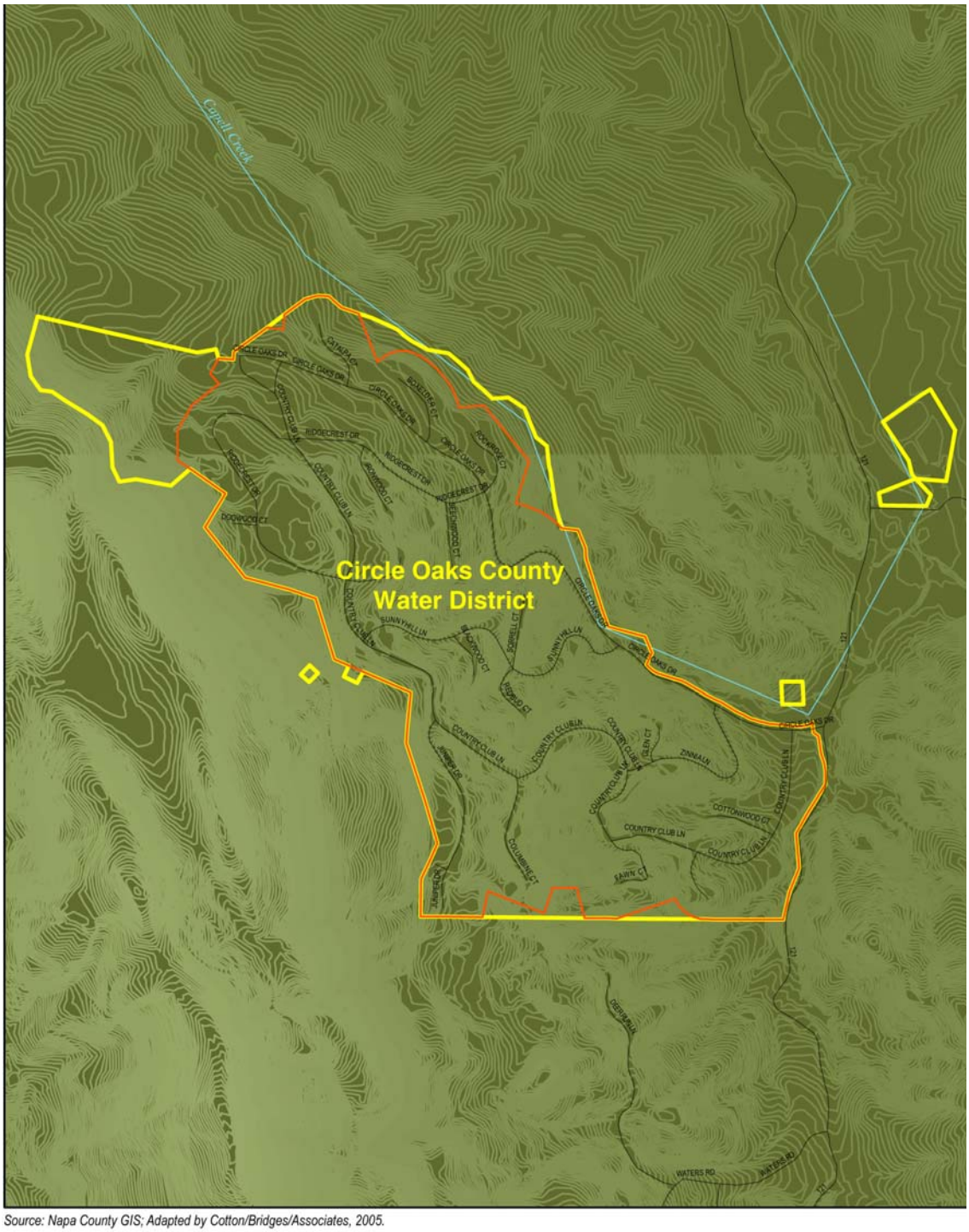
Circle Oaks Subdivision

Table 7-1
Circle Oaks County Water District
Agency Profile

Date Formed	1962
Enabling Legislation	California Water Code 30000
Agency Type	Independent District
Agency Size	252 acres
Services Provided	Water and Sewer
Population in 2000	625

Source: Napa LAFCO Water Service Review, 2005.

The Circle Oaks County Water District covers an area of 252 acres with an adopted sphere of influence slightly less in size than the District's current boundaries. Located in northeastern Napa County, the District is accessible by Knoxville Road off Highway 121. The District currently serves 625 residents according to Napa LAFCo's Water Municipal Service Review. **Table 7-1** summarizes District statistics and **Figure 7-1** illustrates its physical boundaries.



Source: Napa County GIS; Adapted by Cotton/Bridges/Associates, 2005.

Agency Boundary

Agency Sphere of Influence

4140 ft

Elevation Contours

170 ft

Figure 7.1
Circle Oaks
County Water District

II. POPULATION GROWTH

The Circle Oaks County Water District (COCWD) was established in 1962 to provide potable water and sewer services to a 2,200-unit planned resort/residential community in Cappell Valley known as "Circle Oaks" in northeast Napa County. 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. Over the next 20 years, however, development was tempered due to a change in market demand and unstable soil conditions, which resulted in the elimination of several lots and roadways within the subdivision. In 1984, the District's jurisdiction boundary was significantly reduced following the detachment of 21 vacant parcels totaling 3,017 acres.

Land within the District is regulated under the County General Plan and zoned "Agricultural Watershed," "Residential Country," and "Planned Development." "Agricultural Watershed" and "Residential County" zoning standards require minimum parcel sizes of 160 and 10 acres respectively. Land outside the District is designated as "Agriculture, Watershed, Open Space." This land use designation discourages LAFCO from approving annexation proposals 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.

Future growth within Circle Oaks County Water District is limited to those residential lots on which construction has not yet taken place. In addition, concerns about the adequacy of infrastructure have hindered development. In 2000, the District adopted Ordinance 00-1 declaring a water shortage emergency and imposed a moratorium on new water service connections until infrastructure improvements are made.[1] However, a 1985 LAFCO study determined that significant improvements in sewer infrastructure would be necessary to accommodate the projected buildout population of the District.

The Comprehensive Water Service Review prepared by LAFCO of Napa County estimated that COCWD currently serves 75 connections and serves 244 residents based on a calculation methodology authorized by Title 22 of the California Water Code. The District has a "buildout" of approximately 330 connections translating into a population of just under 1,000 residents. However for the reasons mentioned above, as well as continued low demand for additional housing in that area, population growth within the COCWD service area is expected to very limited during the timeframe of this MSR.

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1 Letter from Bruce H. Burton, District Engineer from the Mendocino Office of the California Department of Health Services to Ms. Stacey Harrington, Senior Environmental Health Specialist for Napa County dated May 3, 2004 and a feasibility study entitled "Preliminary Engineering Report for Circle Oaks County Water District," prepared by Triad/Holmes Associates dated September 2001.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of the COCWD based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff.

With respect to wastewater treatment, the system remains fundamentally the secondary treatment system that was put in place when the Circle Oaks subdivision was first built in 1960's and 1970's. The collection system consists of 10 miles of pipe. A 1985 LAFCO study reported that the COCWD treatment system could be augmented to serve as many as 250 units; today the system serves 189 units. The collection system uses gravity flow to move wastewater to three percolation/evaporation ponds located on the eastern side of State Route 121.

Table 7-2
Circle Oaks CWD
Wastewater System

Connections	189
Residential	189
NonResidential	0
Sewer Lines (mi.)	10 miles
Gravity Lines	10 miles
Force Mains	0 miles
Lift Stations	0
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

The State Water Resources Control Board regulates COCWD's wastewater system in accordance with Waste Discharge Requirements Order No. 94-097, dated April 29, 1994. The design flow of the system is capped at 72,000 gallons per day. The facility is permitted to have a monthly average dry weather discharge flow not to exceed 72,000 gallons per day. The treatment facility must be designed, constructed, operated, and maintained to prevent inundation or washout due to floods with a 100-year frequency.

Capacity in the collection system far exceeds buildout projections, but the current treatment system limits service capacity. The Board has established the development of an achievable capital improvement plan as a priority for its staff. A full assessment of the system is required to craft this plan. Past assessments have determined that the wastewater collection and treatment systems will require significant modifications to serve the buildout projection of 330 units. In addition, LAFCO's 1985 study noted that many of the unbuilt residential lots presented topographical challenges that would require the use of pumps to provide service. Pumps for individual lots were deemed an inefficient and uneconomical solution.

IV. FINANCIAL ISSUES

This section reviews the wastewater infrastructure needs and deficiencies of the Circle Oaks County Water District based on a review of limited wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with District staff.

Wastewater Financials

Total waswater net assets of the District, which include all water and sewer assets, totals approximately $732,500. The vast majority of the District's wastewater assets are invested in capital assets. According to the State Controller's Special Districts Annual Report for FY2002-2003, COCWD recorded annual operating revenues of $66,121 for its wastewater operations. An additional $17,559 was received in property taxes and $1,524 in other revenue. Total expenses of $100,122 icluded sewage collection (66%), administration (25%) and depreciation ($9%. Taken together, the District recorded a net operating loss of $14,918 during FY2002-2003.

Table 7-3
Circle Oaks CWD
Balance Sheet

Assets	Amount
Current Assets	$758,904
Total Current Liabilities	$26,422
Total Assets	$732,482
Net Assets	
Invested in Capital Assets	$703,649
Unrestricted Equity	$28,833
Revenue and Expenses	
Total Revenues	$85,204
Total Expenses	$100,122
Net Operating Income	($14,918)

Sources: Napa LAFCO Survey, 2005 (FY2002-03 data)

During the 1990s, COCWD Boards kept water and wastewater rates stable by approving budgets that used reserves to subsidize the cost of operation. The result of this course of action is that the current Board lacks a reserve fund to apply toward capital improvements.

Service Fees and Charges

Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services and translating such costs into a rate structure. In evaluating rates of different agencies, low rates do not necessarily indicate efficiency. Topography, geology, infrastructure age, deferred maintenance, capacity of treatment facilities, and the weather impact the cost of providing services. The District's sewer rates for FY2005-06 are $29.15 per month. This rate generates $66,112 per yeat. This amount does not provide sufficient monies to bolster reserve or capital improvement funds. As a result, the District does not have the financial means to address any significant fault in its wastewater system. The Board is reviewing its financial practices and working to develop a plan to raise revenues to fund a capital improvement plan.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the District's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of District survey, review of permitting requirements, and interviews with District staff.

Governance

COCWD was organized under the California Water District Law, Division 13, of the California Water Code 30000 et. seq. Pursuant to that law, the District is empowered to provide seven municipal services – water, sewer, land reclamation, fire protection, recreation, waste disposal, and hydroelectric power. The District has elected to only provide water and sewer services at this time. The District is the only public agency providing water and sewer service within its jurisdictional boundary. The Napa County Flood Control and Water Conservation District and the Napa County Resource Conservation District are also authorized to provide water service, although both agencies have not expressed an interest.

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 designated representative of land within the District. Elections are based on registered voters, 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 and general manager to assist in the duties 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.

Operations

COCWD contracts with an independent company, Phillips and Associates, for day-to-day operation of both the potable water and the wastewater treatment systems. Under this arrangement, the contractor acts as general manager on behalf of the District. The firm is licensed by the State Water Resources Control Board to provide operation services to any size or any advanced complexity facility in California, although they specialize in smaller water systems. The company provides on-site supervision of the District's water and sewer systems seven days a week and is on call 24 hours a day to respond to emergencies. The District employs one full-time administrator whose responsibilities include acting as district secretary and overseeing the day-to-day business on behalf of the board.

Shared Arrangements

The District does not have any shared arrangements at this time. Geography and topography limit the ability of the District to form partnerships with other agencies.

Programmatic and Operational Tools

The COCWD Board of Directors has identified the lack of clear operational and procedural policies and goals as a fundamental issue for the District. Past practice has been to operate on a purely reactive basis, maintaining the system at a minimal level of operation. The Board has established committees that are working with the community to develop appropriate guidelines for COCWD staff. Substantial work is needed in this area.

VI. PUBLIC ACCOUNTABILITY

COCWD board meetings are conducted on the 3rd Thursday every month at Capell Valley Fire Station. In recent years, the Board has been unable to conduct regular meetings due to the lack of a quorum and periodic resignations of board members. 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. The District has a website at http://www.cocwd.com/ which contains Board agendas and minutes as well as other information useful to residents.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Wastewater Discharge Requirements for Circle Oaks County Water District, Order Nos. 94-07, California Regional Water Quality Control Board, Central Valley Region, April 1994

3. Napa County General Plan

4. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

5. Letter from Bruce H. Burton, District Engineer from the Mendocino Office of the California Department of Health Services to Ms. Stacey Harrington, Senior Environmental Health Specialist for Napa County dated May 3, 2004.

6. "Preliminary Engineering Report for Circle Oaks County Water District," Triad/Holmes Associates, September 2001.

7. California Water Code, Section 30000

8

TOWN OF YOUNTVILLE

I. INTRODUCTION

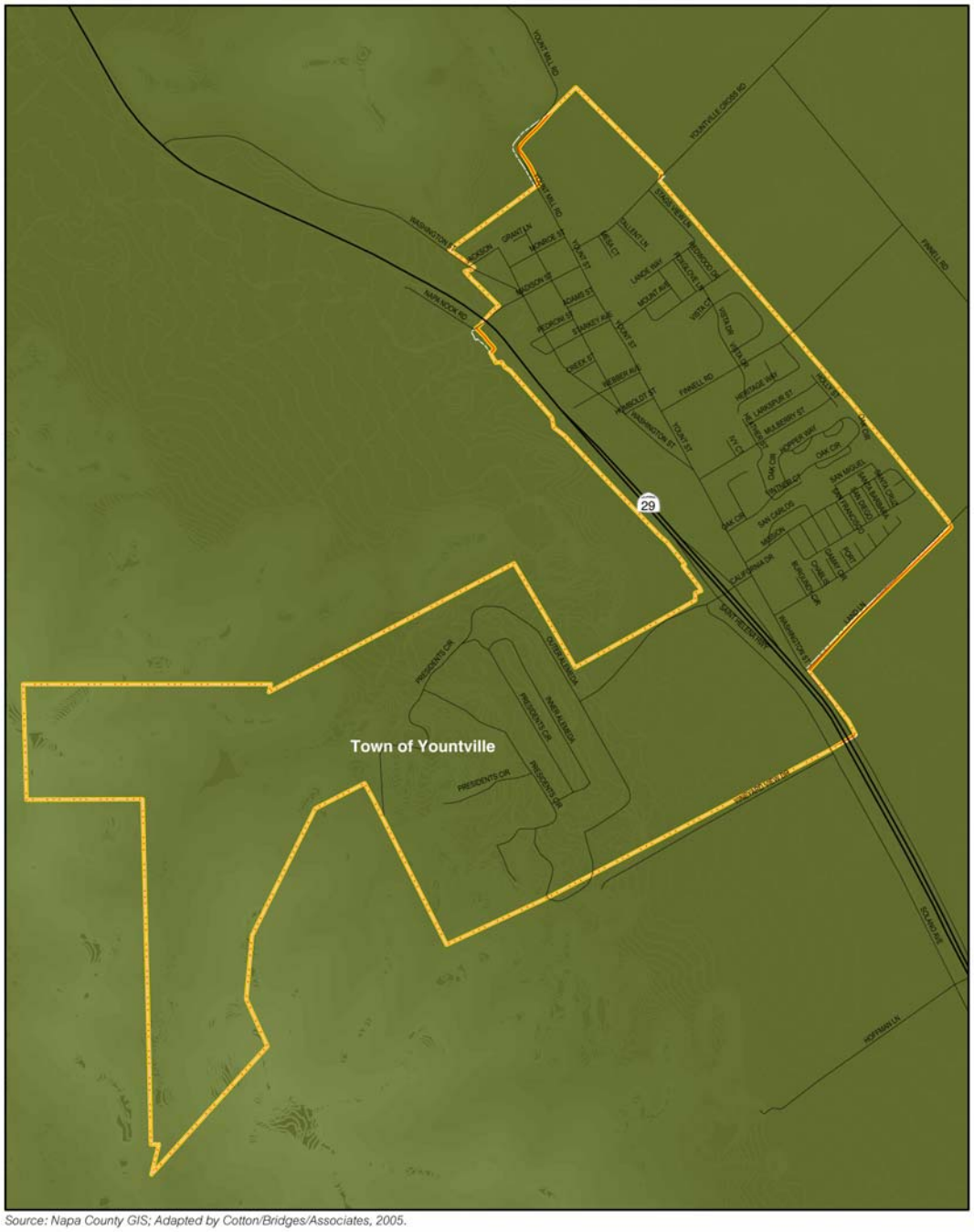
The Town of Yountville was established in 1875 after George C. Yount a frontiersman from North Carolina, arrived in the Napa Valley and established a small farming and ranching community. By the 1940's, the community expressed increasing demands for a water system. In 1965, the community incorporated as the Town of Yountville, which included a merger of the Yountville County Water District and Yountville Sanitation District

Table 8-1
Town of Yountville
Agency Profile

Date Incorporated	1965
Enabling Legislation	N/A
Agency Type	General Law City
Town Size	1.5 square miles
Services Provided	Water and Sewer
Population in 2004 Permanent Residents	3,297

Source: Napa LAFCO Survey, 2005.

The Town of Yountville today covers an area of 1.5 square miles. The adopted sphere of influence is 1.5 square miles and is coterminous with the Town's jurisdictional boundary. The Town of Yountville is located in western Napa County, south of Rector Creek Reservoir and is accessible by Highway 29. Yountville serves approximately 3,297 residents according to the Department of Finance. **Table 8-1** describes and **Figure 8-1** shows the Town boundaries and landmarks.



Source: Napa County GIS; Adapted by Cotton/Bridges/Associates, 2005.

II. POPULATION GROWTH

This section reviews the Town's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR.

Although the community's history dates to the middle 1800s, the Town of Yountville was formally incorporated as a general law city in 1965. The following year, in 1966, the Town adopted its first general plan. The 1966 General Plan originally included land use policies to transition the Town from an agricultural community to a small town consisting of neighborhoods and assorted commercial developments. The 1966 General Plan anticipated a buildout population of approximately 30,000 by 1985. In 1975, alarmed by a sudden increase in development due to a rejuvenated wine industry, the Town adopted a new general plan, limiting residential development and population to only 3,420 by 2000.

Present and planned land uses for Yountville are codified in its General Plan and Zoning Ordinance. The Zoning Ordinance includes the following zones: "Agricultural," "Primary Commercial," "Master Planned Development," "Single Family Residential", "Old Town Historic," Mobile Home Park," "Old Town Commercial", Mixed Residential", "Parks and Playfields", "Planned Development" and "Public Facilities". Land outside the Town is designated by the Napa County General Plan as "Agriculture, Watershed, and Open Space." This land use designation discourages LAFCO from approving annexation proposals 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.

It is important to note that since the middle 1960s, the Town's growth has been constrained by uncertainty over its water supply. In 1998, the Town Council declared a water shortage emergency and prohibited new water connections or the expansion of existing water connections (Ord. No. 280). In 2000, the Town adopted a moratorium restricting new water connections to single family and duplex residences on existing lots of record and requiring conditional approvals for other expansion or new projects (Ord. No. 300). As of September 2005 the moratorium was lifted, allowing many planned projects to begin breaking ground such as the Yountville Square subdivision consisting of approximately 33 units. The Town reached a long-term agreement to purchase water from the State through the California Veterans Home water source of Rector Reservoir.

The Town of Yountville currently serves a permanent population of 3,257 residents according the California Department of Finance. The Town has limited development capacity. The Town anticipates additional buildout of residential development to occur in the Mixed Residential, Planned Development & Residential Scaled Commercial Zones, and commercial buildout will be accommodated in the Primary Commercial Zone. Yountville has a buildout of approximately 1325residential units 200 of which should occur over the

next several years. ABAG projects a total population for the Town of approximately 3,600 residents by 2030, which is consistent with the Town's General Plan.

III. INFRASTRUCTURE NEEDS

This section reviews the wastewater infrastructure needs and deficiencies of the Town of Yountville based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with Town staff.

Table 8-2
Town of Yountville
Wastewater System

Connections	664
Residential	590
NonResidential	74
Sewer Lines (mi.)	8.5 miles
Gravity Lines	8.0 miles
Force Mains	0.5 miles
Lift Stations	1
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

Wastewater System Overview

The Town encompasses about 1,000 parcels, of which nearly all are developed. The Town provides service to 664 connections, of which 590 are residential, 73 are commercial connections and one connection is for the California Veterans Home (which serves about 1,200 residents). Shown in **Table 8-2,** the Town has approximately 8.5 miles of sewer lines which are primarily gravity fed lines. Approximately 80% of all of the sewer lines are between 25 to 50 years old, and the remaining 20% of the sewer lines are less than 25 years old. The Town's 5-year Capital Improvements Program (CIP) discussed later, address sewer repair needs.

Wastewater Treatment Plant

The Town's wastewater treatment plant is operated by the Town and jointly owned by the Town and the California Veterans Home, which has a population of 1,200 people. Yountville contributes 70% of flows and the Veterans Home contributes 30%. The plant provides advanced secondary treatment of domestic wastewater. The treatment process consists of an aerated grit chamber, comminutors, primary settling basin, primary trickling filter, intermediate settling basin, secondary trickling filter, aerated trickling filter solids contact reactor, final clarifier, a tertiary effluent filter, disinfection with sodium hypochlorite, and dechlorination. The WWTP has a treated effluent holding pond for storage and subsequent discharge or land application. Treated effluent is discharged to Napa River or reclaimed via a spray irrigation system. During the dry weather season, treated effluent is stored in wastewater ponds or disposed to land. Sludge is processed through primary and secondary Digestion. Approximately 80 to 100 tons of sludge is generated annually and landfilled.

Infrastructure Condition

The Town's wastewater treatment and collection system is generally in good condition and has adequate capacity. As for preventive maintenance, the Town has a sewer cleaning program, which cleans the entire system each year and cleans hotspots on a quarterly basis. Every five to ten years, the entire sewer system is inspected using televised cameras. Each year, the Town budgets $70,000 to address inflow and infiltration issues. The Town's 5 Year CIP addresses sewer line repair needs and, in the last 3 years, has replaced many older sewer mains that contributed infiltration to the wastewater collection system. In addition, a recent project at the wastewater lift station eliminated a source of infiltration estimated at 200-250 GPM when the ground is completely saturated in winter. Over the next five years, the Town's CIP proposes $2.5 million in expenditures, including an upgrade to Title 22-unrestricted recycled water effluent, expansion of the recycled water distribution system to add irrigation customers and the potential of a zero discharge status, replacement of treatment plant equipment, sewer mains, lateral replacement, and infiltration improvements.

Wastewater Service Needs

The Town provides services to all residential and commercial facilities within its boundaries and serves one industrial connection, the State Veterans Home. The Town does not have plans to serve residences located outside the agency's boundaries. Average annual municipal flow, including infiltration, is 0.420 mgd. The treatment plant has a design capacity of 0.55 mgd. Wastewater service needs could increase from 664 to 801 connections by buildout; however, residential growth will be limited over the next five years due to land availabilities and General Plan policies. Therefore, the Town has sufficient ability to serve new residential and commercial connections for the period covered under this MSR.

Table 8-3
Town of Yountville
Wastewater Flow and System Capacity

Type of Connection	**Connections**	
• Domestic	590	
• Commercial and Industrial	74	
• Total	664	
Type of Wastewater Flow	**Wastewater Flow (mgd)**	**Design Capacity in mgd**
• Municipal Flow	0.305	0.55*
• Industrial Flow (State Hospital)	0.115	N/A
• Average Annual Flow	0.420	0.55*
Peak Daily Wet Weather	2.000	2.850

Source: Napa LAFCO Survey, 2005

* Consultant determined that a maximum daily capacity could be expanded to 0.63 mgd with appropriate changes to the filter system.

IV. FINANCIAL ISSUES

This section reviews the financial status of the Town of Yountville's Wastewater Enterprise Fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Revenues and Expenses

Yountville's Wastewater Enterprise had revenues of $611,881 and expenses of $744,900 for a total operating income of ($133,019) during FY2003-2004 (**Table 8-4**). The present shortfall is being funded by non-operating revenues of $27,903, and capital contributions from the general fund of $42,812; thus, net change in assets is ($62,304). The Town receives 100% of its revenue from service charges and fees. Maintenance and operations expenses comprise 59% of total expenses, purchased power comprises 12%, while depreciation comprises 21%, and equipment is 8%.

Table 8-4
Town of Yountville
Income and Expense Statement

Revenues	**Amount**
Charges for Services	$611,881
Expenses	
Services and Supplies	$439,515
Depreciation	$158,727
Purchased Power	$87,857
Other Expenses	$58,801
Operating Income	($133,019)
Non-Operating Rev.	$27,903
Net Income	($105,116)

Source: Town of Yountville, CAFR 2003-2004.

Balance Sheet

In FY 2003-2004, the Town's Wastewater Enterprise fund had $6.1 million in total assets and $46,759 in total liabilities (**Table 8-5**). The Town had $340,769 in current assets including cash, accounts receivable and short term investments. Long Term assets consisted of $5,718,618, as invested in capital assets such as sewer structures and waste treatment facilities, or in reserves for capital improvements. The Town has sufficient current assets to meet its current liabilities. Unrestricted equity consisted of $1,751,265. The Town has no long term debt for its Wastewater operations.

Table 8-5
Town of Yountville
Balance Sheet

Financial Statistics	**FY 2003-04**
Assets	**Amount**
Current Assets	$340,769
Long Term Assets	$5,718,618
Total Assets	$6,059,387
Total Current Liabilities	$46,759
Long Term Liabilities	$0
Net Assets	$6,012,268
Invested in Capital Assets	$3,960,837
Restricted Equity	$300,526
Unrestricted Equity	$!,751,265
Total Equity	$6,059,387

Source: Town of Yountville, CAFR 2003-2004.

Reserve Policy

Sanitation services may adopt specific policies and amounts for its reserve funds. Such reserve policies often include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in department funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

According to Town staff, Yountville has approximately $2.05 million in fund reserves designated for sewer operations and capital improvements. The Town does not have an adopted reserve policy, however it follows a policy of retaining at least 25% of operating expenses as a reserve. The Town's reserves are not explicitly segreated into operating reserves, rate stabilization reserves, and capital improvements. Staff is developing reserve policies for the Sewer Enterprise. Staff endeavors to maintain prudent operating and capital reserves – at this time the operating reserve exceeds 50% of such expenses, and the capital reserve is sufficient to fund the Town's current long-term wastewater project needs..

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention to or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies. **Table 8-6** presents various aspects of the Town's sewer capital replacent plans.

Table 8-6
Town of Yountville
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$158,727
Capital Improvement Budget	$300,526
Capital Reserve Fund for infrastructure expansion or improvements	$1,751,265

Source: Napa LAFCO Survey, 2005.

Presently, Yountville's system renewal and replacement cost is unknown. However, a portion of the $1.75 million of reserves is for the replacement fund and a portion is for infrastructure expansion. Shown in **Table 8-6**, annual asset depreciation totaled $158,727 in FY 2003-2004 and $300,526 was budgeted for capital improvements. The Town prepares an annual 5-year CIP, based on the results of the sewer televising program and projected infrastructure repair needs. The Town appears to currently have adequate funds available for facility renewal, improvement, or expansion.

Service Fees and Charges

Yountville charges various sewer fees. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. In evaluating rates of agencies, low rates do not necessarily indicate efficiency of an agency. Agencies in built-out areas may need only to maintain the integrity of current infrastructure and service levels, while fast growing areas may need to also plan for expansion. Topography, geology, age of infrastructure, deferred maintenance, and even the weather impact the cost of providing services.

Shown in **Table 8-7**, the Town's sewer fees range from $22 to $40 per month and consider BOD, COD, and TSS load factors (e.g., the strength of the effluent). Connection fees are charged for new development projects and are placed into a fund dedicated for capital expansion and replacement. The Town Finance Director indicated that the Town Council desired a comprehensive sewer rate review to ensure that costs are fully recovered on the

wastewater system and ensure that adequate reserves are built for infrastructure improvements.

Financial Issues

The Town has periodically faced water shortages and has thus developed an extensive water recycling program: approximately 40% of the plant's effluent is recycled for irrigation of local vineyards. The Town is preparing a feasibility study for the upgrade of the treatment plant effluent to the "unrestricted" level and the feasibility of a zero discharge status.[1] In addition, the Town is in the process of building a higher level of reserves for its wastewater collection and treatment system. Both projects underscore the need for additional revenue over the next five years. The Council is currently considering a 5% increase to sewer rates.

Table 8-7
Town of Yountville
Wastewater Service Fees

Fee Type	Amount
Availability or Standby Charge	None
Residential Sewer Charge	$38.19 for SFR $26.74 for MFR. or Mobile Home
Commercial Sewer Charge	Variable based on water consumption
Connection Fee	
Gravity Line	$4,154
Force Main	None

Source: Town Survey, 2003.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the Town's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of Town survey, review of permitting requirements, and interviews with Town staff.

Governance

The Town of Yountville was incorporated as a general law city in 1965. The Town operates under a council-manager form of government. Policymaking and legislative authority are vested in the five-member Town Council, consisting of four members and a mayor. Elections are conducted by general vote; and the four town council members serve staggered four-year terms. A Town Manager is hired to oversee and implement policies on behalf of Yountville's governing body and to administer the Town's five departments. .

Operations

The Administrative division manages all functions of the Public Works and Town Engineer duties for the Town. The Town recently appointed a full time Public Works Director/Town Engineer. The Director now manages the water and wastewater operations

[1] Letter from Donald E. Moore, Wastewater System Supervisor to Gina Kathuria, California Regional Water Quality Control Board, December 6, 2004.

for the Town. Yountville's water operations are supervised by a public works supervisor and sewage and reclamation services are managed by the wastewater treatment supervisor. Including the supervisor, the Town employs three full-time licensed operators to manage day-to-day operations. The operator is on call 24-hours to respond to emergencies. Town staff generally provides the majority of sewer services. However, major sewer line repairs and televising are performed with specialized contract services. Customer inquiries, including billing and service questions, are directed to the Public Works Department.

Shared Arrangements

The Town participates in jointly-governed organizations owned, operated, or governed by two or more participants in whom the participants retain an ongoing financial interest or responsibility. For instance, with respect to risk management, the Town is a member of the Public Agency Risk Sharing Authorities of California, a JPA which provides joint protection programs for public entities covering automobile, general liability, errors and omission losses, workers compensation, and property claims. The Town is a member of the Upper Valley Waste Management Agency, along with Calistoga, St. Helena and Napa County.

The Town is also a member of the Flood Protection Sales Tax JPA for the purpose of implementing plans for the use of the one-half percent sales tax passed in March 1998. The Town participates in shared arrangements with respect to providing water supply. The Town maintains a formal agreement with the City of Napa to treat and deliver its allotment of water entitlements drawn from the State Water Project. The Town is a member of the countywide Water Technical Advisory Committee made up of the public works directors of the five cities and the County of Napa. Its primary purpose is to focus on water issues in Napa County, but it also provides a regular forum for the public works directors to meet and discuss common issues, such as those relating to wastewater treatment and recycled water.

Arrangements with the State of California

The Town maintains a unique and strong relationship with its largest water supplier and wastewater customer, the Veterans Home operated by the State of California Department of Veterans Affairs. This facility is currently home to 1,200 residents and approximately 900 employees. Yountville shares operating costs with the State of California's Department of Veterans Affairs for water entitlements drawn from Rector Reservoir which are treated at Rector Water Treatment Plant.

Yountville Veterans Home

The Town and State of California also cooperate in a joint wastewater treatment facility. The Town purchased the State's then existing treatment plant and the land for a reduced price. Under the agreement, the Town's plant is to provide capacity in the treatment facility for a maximum daily flow not to exceed 1 mgd originating from the Veterans Home. Under this agreement, the State of California pays an annual service charge to the Town for a prorata share of the cost of operating and maintaining the Town's treatment facility and capital replacement charges (matched by the Town's contribution). The Town and Veterans Home also have a water purchase agreement whereby the Town purchases water from the Veterans Home for use in the Town's municipal water enterprise. The water obligation is allowed to offset the obligations of the State to pay for sewage treatment services purchased.

Programmatic and Operational Tools

Wastewater operations should implement a number of programs, management, and operational tools to adequately manage their wastewater collection and treatment system. Among others, important management tools include the use of audited financial statements, workload management programs, SCADA or other electronic monitoring systems, a sewer televising program and regular sewer line cleaning program, capital improvement program, preventive maintenance program, and other similar operational tools.

Review of Town operations reveals that several programmatic tools are in place. Sewer televising is conducted once every five to ten years and the results are incorporated into the capital improvement program. The Town's sewer cleaning program covers the entire system every year and covers hotspots on a quarterly basis. A workload management

program is generally not utilized, since the high costs of maintaining the system outweigh its benefits. SCADA is not currently used, but staff is evaluating its future use. The Town also conducts regular financial audits and Comprehensive Annual Financial Reports.

Compliance with Applicable Laws

The California Regional Water Quality Control Board issued Order No. R2-2004-0017 (March 17, 2004), which regulates the amount, process, and quality of wastewater treated and discharged by the Town. Yountville is authorized up to a monthly average discharge of 0.55 mgd and is currently operating within that discharge cap. The State Regional Water Quality Control Board does not have any tentative or enforcement orders pending against the Town. The Town has also complied with requirements for installing groundwater monitoring wells.

VI. PUBLIC ACCOUNTABILITY

The Town of Yountville's Town Council meetings are conducted on the first and third Tuesdays of each month at 6:00 p.m. in the Town Hall Council Chambers. Meetings are open to the public and are televised locally on Channel 28. Members of the public are encouraged to offer comments on any items. Regularly scheduled meetings allow an opportunity for the public to ask questions of their elected representatives. The public can also ask questions on water and wastewater operations. The Town appears in complete compliance with the Brown Act.

The Town of Yountville has just posted a new website to provide a wide variety of information about the community and local government operations, which can be accessed at http://www.yville.com/. The website will include information on City operations, agendas and minutes for the past year, budget information, and other information for the Town residents. This will enhance public accountability.

VII. REFERENCE LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. U.S. Census, 2000. Demographic Profiles

4. Wastewater Discharge Requirements for Yountville Wastewater Treatment Plant, Order No. R2-2004-0017, California Regional Water Quality Control Board, San Francisco Region, Dated March 17, 2004

5. Town of Yountville, Ordinance No. 280-1998 and No. 300-2000.

6. 2003 Projections, Association of Bay Area Governments.

7. Town of Yountville, Five Year Capital Improvement Program for Wastewater/Water Reclamation, Fiscal Years 2005-2009

8. Comprehensive Annual Financial Report, Town of Yountville, FY 2003-2004.

9. Correspondence with Don Moore, Wastewater Supervisor for Yountville

10. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

11. Yountville General Plan, 2002.

9

CITY OF CALISTOGA

I. INTRODUCTION

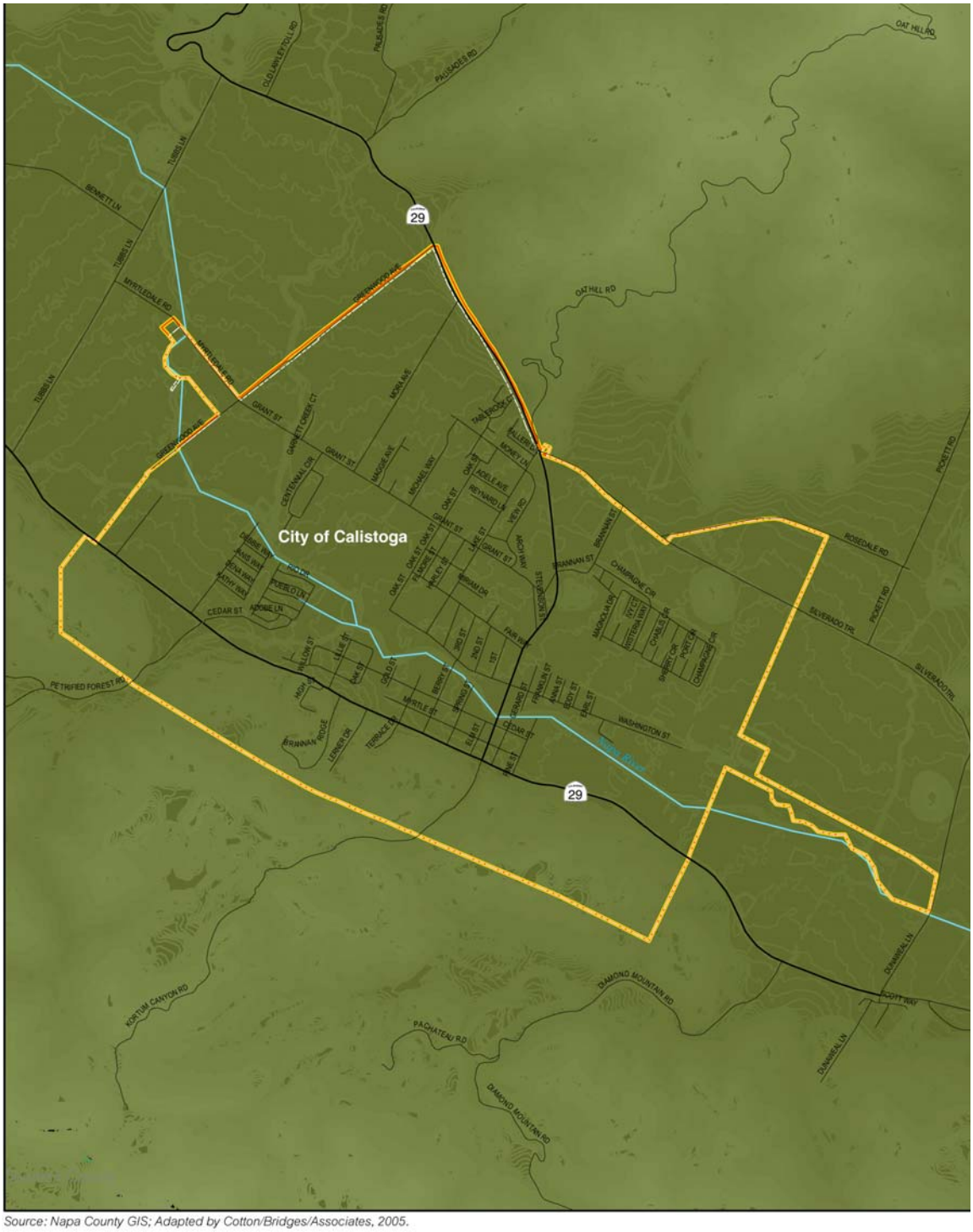
Calistoga was incorporated in 1886 following the founding of the Calistoga Hot Springs Resort. Calistoga today is best known for its geothermal hot springs, mineral water, and is home to California's Old Faithful Geyser and the Napa County Fairgrounds. In 2001, Calistoga was selected by the National Trust for Historic Preservation as one of twelve Distinctive Destinations. Calistoga continues to maintain its small town atmosphere while still being able to accommodate many tourists each year.

Table 9-1
City of Calistoga
Agency Profile

Date Incorporated	1886
Enabling Legislation	
Agency Type	General Law City
City Size	1,670 acres
Services Provided	Water and Sewer
Population in 2000 Permanent Residents	5,190

Source: Napa LAFCO Survey, 2005.

The City of Calistoga today covers an area of 1,670 acres. The adopted sphere of influence is conterminous with the City's incorporated boundary. The City of Calistoga is located in northern Napa County, west of Lake Berryessa and is accessible by Highway 29 and Highway 128. Calistoga currently serves approximately 5,190 residents as described in **Table 9-1**. **Figure 9-1** shows the District boundaries and landmarks.



Source: Napa County GIS; Adapted by Cotton/Bridges/Associates, 2005.

Agency Boundary | Agency Sphere of Influence | City Boundary | 4140 ft | Elevation Contours | 170 ft

Figure 9.1
City of Calistoga

II. POPULATION GROWTH

This section reviews the City's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR

The City of Calistoga's modern history dates back to the mid 1800s. Between 1859 and 1863, Samuel Brannan acquired more than 2,000 acres at the north end of Napa Valley, comprising much of present-day Calistoga, including the area's famous hot springs, which Brannan developed as a spa in 1862. Calistoga formally incorporated as a city in 1886. Sustained by the area's tourism and agriculture, Calistoga enjoyed modest prosperity. However, City population did not exceed 2,000 until the 1970's. During that decade, the city's population doubled and, by the turn of the century, grew to over 5,000. In the late 1970s, limited water supplies forced the City to implement a development moratorium until the 1980s, when the City entered into several agreements to gain access to State Water Project (SWP) water.

Present and planned land uses in Calistoga are codified in its 1990 General Plan. The 1990 General Plan allowed for the potential development of 1,678 new housing units. However, ongoing limitations in water supply and wastewater treatment capacity caused the City to adopt a Resource Management System that restricted growth to no more than 1% annually – slower than the 3% limit envisioned by the 1990 General Plan. Meanwhile, land in the City's Planning Area also remained largely undeveloped as Napa County's Agricultural Resource Land Use designation and Measure J protects agricultural land from development. Therefore, Calistoga's population grew by a total of 10.9 percent between 1990 and 2000, while Napa County's total population grew by 15.2 percent during the same period.

Following the upgrade of the City's wastewater treatment plant in Fall 2003, the City experienced a renewed interest in development. Recognizing the need to protect the community's character, the City Council adopted a Growth Management System in January 2005 limiting residential growth to no more than 1.35% annually and non-residential growth to 8 acre-feet of water.. All new development, expansion, and intensification of existing uses and structures require a Growth Management Allocation granted by the Council. The only exemptions include second units, development on existing parcels only when there is no net increase in water and wastewater resources demand, replacement of dwellings, projects subject to a development agreement, nonresidential expansions not more than 10% of the gross floor area, and public facilities sponsored by the City or the School District.

In 2003, the City of Calistoga updated their General Plan. The City of Calistoga currently serves a permanent population of 5,192 residents as of 2004. Calistoga has a buildout of 1,404 new homes in addition to the City's existing 2,042 housing units. However,

continued implementation of the Growth Management System and the present annual allocation of only 28 new permits for housing, population growth is expected to continue to be minimal. ABAG projections for the City project a total population of 5,570 by 2030, consistent with the City's General Plan and Growth Management System Ordinance.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of the City of Calistoga based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with City staff.

Table 9-2
City of Calistoga
Wastewater System

Connections	1,245
Residential	1,046
NonResidential	199
Sewer Lines	N/A
Gravity Lines	N/A
Force Mains	N/A
Lift Stations	3
Treatment Level:	Advanced II (BOD, 10 mg/l)

Source: Napa LAFCO Survey, 2005.

Wastewater System Overview

The City serves 1,245 connections, of which 1,046 are residential, 181 are commercial, 2 are industrial, and 16 are institutional connections. The City owns and maintains its own collection system. Shown in **Table 9-2,** the City has sewer lines which are primarily gravity fed lines. Information on the age of the sewer lines is not available. The City owns and operates a municipal wastewater treatment plant (WWTP) that provides advanced treatment of domestic wastewater. The City also has a water reclamation system, which consists of a reclaimed water storage reservoir, irrigation pumping station, transmission mains, and reuse area irrigation system.

Wastewater Treatment Plant

Wastewater Treatment Overview

In 2003 the City completed a major upgrade of its WWTP, replacing existing older equipment and process units and constructing new facilities and a new 20 mg pond. The new plant uses an extended aeration activated sludge treatment process for primary and secondary treatment, replacing the existing primary clarification tank and facultative lagoon. The WWTP treatment capacities have been expanded to provide advanced treatment. The wastewater treatment plant has a reclamation system, which consists of a reclaimed water storage reservoir, an irrigation pumping station, transmission mains, and reuse area irrigation system.

Infrastructure Condition

Calistoga's wastewater collection system consists of pipes made up of concrete, clay, polyvinyl chloride (PVC), asbestos cement, and other materials. Pipes range in diameter from 4 to 18 inches. Many of these components require improvement. Installed in the mid-1960s, the 18-inch clay trunk line that runs along Washington Street to the wastewater treatment plant is severely undersized. A significant portion of its alignment is partially above ground, is subject to damage from surface activities and the weather, and has minor cracks along its length. Improvements are also needed in other parts of the wastewater network. The City has budgeted to complete a wastewater collection system study for inflow and infiltration in 2005/06. Funds to address the recommended improvements are budgeted for 2006/07.

Wastewater Service Needs

According to the Calistoga General Plan, the City's wastewater collection system serves half of the area within the city limits; the other parts of Calistoga and the rest of the planning area use private septic systems to dispose of wastewater.[1] Average annual municipal flow including infiltration is 0.36 mgd, annual industrial flow is 0.38 and the treatment plant has a design capacity of 0.84 mgd. The City indicates that wastewater service needs could

Table 9-3
City of Calistoga
Wastewater Flow and System Capacity

Type of Connection	Connections as of 2004	
• Domestic	1,046	
• Commercial/Industrial	199	
• Total	1,245	
Type of Wastewater Flow	**Wastewater Flow (mgd)**	**Design Capacity in mgd**
• Municipal Flow	0.36	0.41
• Industrial Flow	0.38	0.43
• Infiltration	0.16	N/A
• Average Dry Weather Annual Flow	0.74	0.84
Peak Daily Wet Weather	2.0	4.0

Source: City of Calistoga 2003 GP Infrastructure Element and City of Calistoga 2004 Wastewater Revenue Program.

[1] City of Calistoga, 2003 General Plan, adopted October 21, 2003.

increase from to 1,335 under its Growth Management Ordinance during the timeframe of this MSR.

IV. FINANCIAL ISSUES

This section reviews the financial status of the City of Calistoga's Wastewater Enterprise Fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

In FY 2003-2004, the City of Calistoga sewer enterprise fund had revenues of $1,638,391 and expenses of $1,791,852 for a total operating income of ($153,461). The present shortfall is being funded by non-operating Capital contribution revenues of $711,077; thus, net income of the sewer enterprise fund is $275,931. The City receives 100% of its revenue from service charges (e.g., availability charge, sewer fees, and hookup charges). Maintenance and operation expenses comprise the majority of total expenses (49%), employee services total 40%, while depreciation comprises 6% and interfund charges total 5% of total expenses.

Table 9-4
City of Calistoga
Income and Expense Statement

Revenues	**Amount**
Charges for Services	$1,638,391
Expenses	
Maintenance & Operations	$883,411
Employee Services	$716,441
Depreciation	$100,400
Interfund charges	$91,600
Operating Inc./(Exp.)	($153,461)
Non-Operating Revenue	$711,077
Net Income	$275,931

Source: City of Calistoga 2004 CAFR.

Balance Sheet

In FY 2003-2004, the City had $19,289,374 in total assets and $11,610,038 in total liabilities. The City had $281,948 in current assets including cash, accounts receivable and short term investments. Long term assets consisted of $18,614,968 invested in capital assets (e.g., sewer structures and waste treatment facilities) and $392,465 of invested in restricted cash and debt issuance costs. The City has a high level of current liabilities; however, most is due in the form of notes immediately payable as part of interim financing. The City will be issuing another long-term note to finance this interim payment. Unrestricted equity totaled $199,678. The City will be issuing a long-term note to cover financing of $1.6 million in debt.

Table 9-5
City of Calistoga
Balance Sheet

Financial Statistics	FY 2003-04
Assets	**Amount**
Current Assets	$281,948
Long Term Assets	$19,007,428
Total Assets	$19,289,374
Total Current Liabilities	$2,277,064
Long Term Liabilities	$9,332,974
Total Liabilities	$11,610,038
Invested in Capital Assets	$9,152,577
Restricted Equity	$199,678
Unrestricted Equity	($1,672,919)
Total Equity	$7,679,336

Source: City of Calistoga 2004 CAFR

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

The City of Calistoga has a reserve policy that sets aside 20% of operating expenses for operating reserves, while the wastewater enterprise fund sets aside the same percentage of operating expenses for its reserve, it is also required as part of its USDA loan to set aside 10% of the debt service amount as reserves. The City has reserves of $199,687 for sewer improvements. No reserve is set aside for operating expenses. With the 2004 Revenue Program in place to increase connection fees and other service fees, operating revenues are expected to be adequate for debt service and renewal and replacement.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies. **Table 9-6** provides various indicators of the City's capital replacement plans.

Table 9-6
City of Calistoga
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$100,400
Capital Improvement Budget	$199,687
Capital Replacement Fund	
Capital Reserve Fund for infrastructure expansion and improvement	

Source: Napa LAFCO Survey, 2005.

Presently, Calistoga's system renewal and replacement cost is unknown. Approximately $200,000 is set aside for reserves for infrastructure replacment and expansion. Shown above, annual asset depreciation totaled $100,400 in FY 2003-2004. Due to the fact that depreciation alone will negate over half of the reserves for this year, the city appears to lack the funds necessary for facility renewal and improvement. The City has budgeted to complete a wastewater collection system study for inflow and infiltration in 2005-2006 and funds are budgeted in 2006-2007 to make any recommended improvements.

Table 9-7
City of Calistoga
Wastewater Service Fees

Fee Type	Amount
Availability or Standby Charge	N/A (Call them)
Residential Sewer Charge	$38.22 for SFR & MFR; $27.14 Mobile Home
Commercial Sewer Charge	$ per 1000 gal.(See 2004 WW Revenue Program)
Connection Fee Gravity Line	$14,623 in 2003; $15,889 in 2004

Source: Calistoga 2004 Wastewater Revenue Program.

Service Fees and Charges

Calistoga collects sewer fees for providing wastewater collection and treatment service. Setting the appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services and translating such costs into a rate structure. In evaluating rates of agencies, low rates do not necessarily indicate efficiency of an agency. Agencies in built-out areas may need only to maintain the integrity of current infrastructure and service levels, while agencies in fast growing areas

may need to plan for expansion as well. Topography, geology, age of infrastructure, deferred maintenance, capacity of treatment facilities, and the weather impact the cost of providing services. The City charges a monthly sewer fee of $38.22 for single-family homes and $38.22 per unit for multi-family and $27.14 for mobile homes (**Table 9-7**). Commercial rates are $2.50 per 1,000 gallons of wastewater. Service fees for commercial/industrial uses consider BOD, SOS and TOD loading factors (the strength of the effluent and need for different levels of treatment). Sewer charges are indexed to inflation and increase 3% annually. Wastewater connection fees have increased in recent years from $14,623 in 2003 to $15,889 in 2004 for a single family residence. Connection fees are placed in a designated CIP account to pay for the expansion and repair of infrastructure to accommodate new the needs arising from new development.

Financial Constraints and Issues

The City of Calistoga's main financial constraint affecting wastewater operation is financing future system improvements, particularly to the collection system. In the past three years, the City entered into agreement with the California Statewide Communities Development Authority whereby the Authority sold revenue bonds in 2001 and proceeds totaling $3.5 million will be used by the City to partially finance a wastewater treatment plant upgrade. The City also secured a low interest loan (2.6%) valued at $4.9 million from the State Water Resources Control Board as additional financing for the wastewater treatment plant upgrade. This debt load may constrain the ability of the City to seek additional funding to improve the noted significant deficiencies in the wastewater collection lines throughout the community.

V. ADMINISTRATION, OPERATIONS, AND ACCOUNTABILITY

This section reviews the administration and operation of the City's wastewater operations based on a review of the Napa LAFCo wastewater municipal review, completion of agency surveys, review of permitting requirements, and interviews with City staff.

Governance

Calistoga was incorporated in 1886 as a general law city. The City operates a council-manager form of government. The governing body consists of 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 council members 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 updated its general plan in 2003.

Operations

The City's Public Works Department is responsible for maintaining the City's water and wastewater system, providing general maintenance for various City services, and capital improvement projects. The City Manager appoints a Public Works Director to oversee and manage the City's water and wastewater systems, reclaimed water, and other related operations. Designated staff is on call 24 hours, 7 days a week to respond to any reported emergencies. As of January 2003, approximately 7.5 of the 13 employees in the Department were assigned to operate the wastewater collection and treatment system. Several water and wastewater staff currently holds various wastewater certifications. The City contracts out services for computer programming and maintenance and sewer line televising.

Shared Arrangements

The City participates in several jointly-governed organizations that result from a contractual arrangement, and that are owned, operated, or governed by several participants in which the participants retain an ongoing financial interest or responsibility. The City is a member of the Public Agency Risk Sharing Authorities of California, a JPA, which provides joint protection programs for public entities covering automobile, general liability, errors and omission losses, workers compensation, and property claims. The City is a member of the Upper Valley Waste Management Agency along with the Yountville, St. Helena, and County of Napa. The City is also a member of the Flood Protection Sales Tax JPA for the purpose of establishing a plan for using the one half percent sales tax passed by voters in 1998. The City is a member of the countywide Water Technical Advisory Committee made up of the public works directors of the five cities and the County of Napa. Its primary purpose is to focus on water issues in Napa County, but it also provides a regular forum for the public works directors to meet and discuss common issues, such as those relating to wastewater treatment and recycled water.

Programmatic and Operational Tools

Wastewater operations should implement a number of programs, management, and operational tools to adequately manage their wastewater collection and treatment system. Among others, important management tools include the use of audited financial

statements, workload management programs, SCADA or other electronic monitoring systems, a sewer televising program and regular sewer line cleaning program, capital improvement program, preventive maintenance program, and other similar operational tools. Although detailed analysis is well beyond the scope of this review, it is possible to determine whether an agency has a formal and well-organized program, informal or limited program, or lacks a program.

A review of City operations reveals that many management tools are in place. The City implements a periodic sewer televising and cleaning program. The City has budgeted to complete a wastewater collection system study for inflow and infiltration in 2005-2006 with funds budgeted the following year to implement recommendations. A workload management system is used to schedule preventive maintenance tasks. SCADA is used to run the water and wastewater treatment and disposal systems. It also monitors all alarms and calls out standby personnel or the Police Department. The City also prepares a Comprehensive Annual Financial Report detailing revenues and expenditures.

Compliance with Applicable Laws

The City's wastewater treatment plant operations are regulated by the California Regional Water Quality Control Board, San Francisco Bay Region Order No. 00-131 and the NPDES permit No. CA0037966 reissued in 2000. The City will be submitting an application for renewing the discharge permit in June 2005. The Order regulates the location, quality, timing, and amount of effluent treated and discharged by the wastewater treatment plant. Over the past five years, the City has received several dozen violations from SWCRB. These violations prompted the City to upgrade its old WWTP. Currently, the City of Calistoga is in good standing with the SWRCB and has not been issued violation or enforcement orders.

VI. PUBLIC ACCOUNTABILITY

The City of Calistoga's City Council meetings are held on the first and third Tuesday of each month at 7:00 PM in the Calistoga Community Center. Meetings are open to the public. Members of the public are encouraged to offer comments on any items. Regularly scheduled meetings allow an opportunity for the public to ask questions of their elected representatives. The public can also ask questions on water and wastewater operations.

The City provides an annual summary of past and projected revenues and expenditures relating to its water and wastewater service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public may comment and offer suggestions with respect to expenditures. 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.

The City currently maintains a website where information can be found. The City's website at http://www.ci.calistoga.ca.us/ has information available for each of the City departments. The website also includes the latest financial statements which document the City's overall financial condition and condition of each of its enterprise operations. The website also includes information on the City Council, agendas and meeting minutes, and municipal code.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. U.S. Census, 2000. Demographic Profiles.

4. Wastewater Discharge Requirements for Calistoga Wastewater Treatment Plant, Order No. 00-131, California Regional Water Quality Control Board, San Francisco Region, Dated November 29, 2000.

5. City of Calistoga, Growth Management System, Ordinance No. 616 and Chapter 13.16 of the Calistoga Municipal Code.

6. 2003 Projections, Association of Bay Area Governments.

7. Comprehensive Annual Financial Report, City of Calistoga, Draft FY 2003-2004.

8. Two Year Budget, Water and Wastewater Enterprise Funds, Operating and Capital Improvement Budgets, City of Calistoga, FY 2004-2005 Revised and FY 2005-2006

9. 2004 Wastewater Revenue Program, City of Calistoga, May 2004

10. 2003 Calistoga General Plan, Infrastructure Element

11. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

12. Correspondence with Louise Harrison, Public Works Administrative Analyst

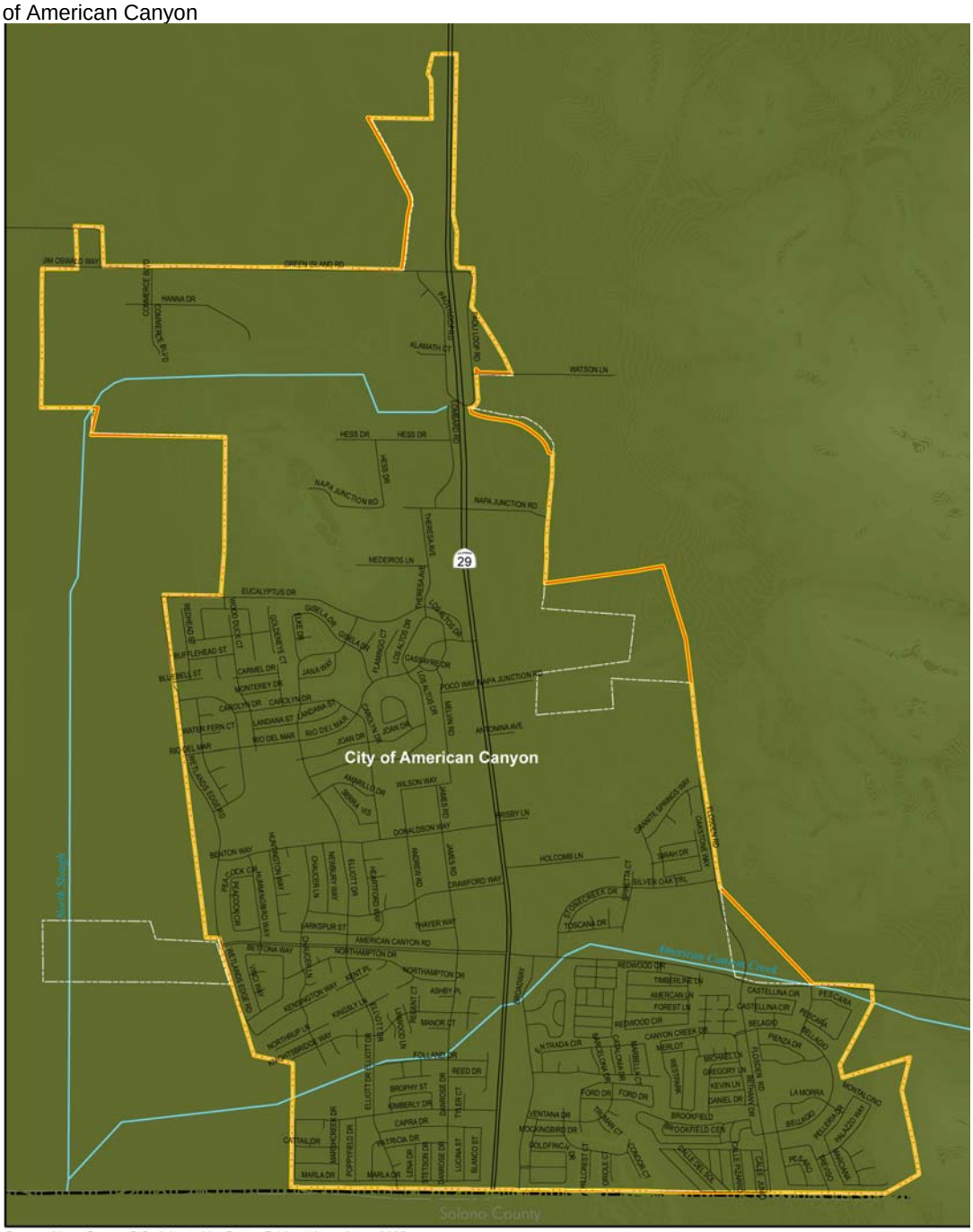
10

CITY OF AMERICAN CANYON

I. INTRODUCTION

American Canyon was established in the early 1900s after the discovery of clay and limestone in the area stimulated a mining-based economy. In 1961, the American Canyon County Water District formed to provide wastewater and potable water services to approximately 1,000 residents. Incorporation in 1992 resulted in the transfer of all improvements, powers, rights, contracts, and duties of the district to the City.[1] In 2002, the City completed construction of its wastewater treatment plant and ceased sending wastewater to Napa Sanitation District.

[1] As successor agency to the ACCWD, the City became the sanitation provider for much of south Napa County. At the time of incorporation, ACCWD operated a sewer system that moved wastewater from throughout the south county to the Napa Sanitation District (NSD) treatment facility north of the Napa County Airport. The City Council determined that it wanted to separate its system from that of the NSD, so in 1994 it obtained a dissolution agreement to a JPA it had inherited from ACCWD. Dissolution offered American Canyon the ability to set its own priorities for wastewater treatment in the south county and to establish its own capital improvement plan and budget. Dissolution provided that American Canyon could continue to send wastewater to NSD for three years while a wastewater treatment plant was built. This portion of the dissolution agreement was extended from time to time until American Canyon was able to bring its new wastewater treatment facility online in 2002. The NSD benefited from the dissolution as it provided relief to the strain placed on its system from treating American Canyon wastewater during the extended period of the agreement. An important aspect of the dissolution agreement is a delimitation of a boundary between the service territories of the agencies. This boundary is Fagan Creek. North of Fagan Creek is served by NSD, and south of the Creek is served by American Canyon. The one significant customer whose property is bisected by Fagan Creek, the Chardonnay Golf Club, is a customer of the NSD.



Source: Napa County GIS; Adapted by Cotton/Bridges/Associates, 2005.

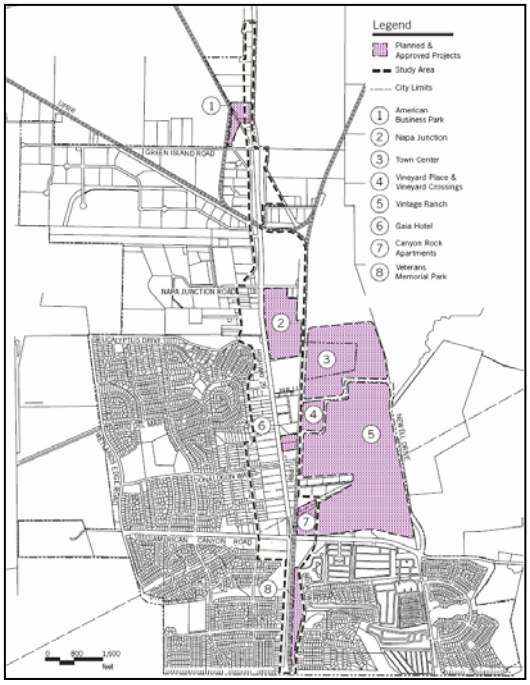
Table 10-1
City of American Canyon
Agency Profile

Date Incorporated	1992
Enabling Legislation	N/A
Agency Type	General Law City
City Size	3.6 square miles
Services Provided	Water and Sewer
Population in 2004 Permanent Residents	13,156

Source: Napa LAFCO Survey, 2005.

American Canyon covers an area of 3.6 square miles with an adopted sphere of influence of 1.5 square miles. American Canyon's water service area extends to Soscol Creek to the north, Solano County to the east and south, and the Napa River to the west. American Canyon's sewer service area extends to Fagan Creek to the north, Solano County to the east and south, and the Napa River to the west. The City is located west of the Napa River and is accessible by Highway 29. As of January 2004, the City serves 13,156 residents.

II. POPULATION GROWTH



American Canyon's roots date to its agriculture and cattle-grazing past. Napa Junction was the name of the community for many years, stemming from the role of commercial railroad in the area. By the 1950s, American Canyon still had a population of only 1,000 residents. In 1961, American Canyon County Water District was formed to provide wastewater and potable water services for the community. In 1975, American Canyon began sending its wastewater to Soscol Advanced Waste Treatment Facility operated by NSD. To alleviate demands on water supply, the City implemented a water reclamation plan and built a new wastewater treatment plant in 2002.

Planned land uses for American Canyon are codified in its general plan, last updated in 1994. The City has several proposed projects that will significantly increase population, including the 765-home Vintage Ranch and 10-acre affordable housing site, the 216-unit apartment complex under the Napa Junction, Mixed Use Project, Phase I. As of March 2005, at least 250 residential units have been approved and 1,200 units are under construction. Future development potential is limited. A "green belt" surrounds the City. This greenbelt consists of Napa River and 500-acre wetlands preserve to the west, the 640-acre Newell Wilderness Preserve to the east, and vineyard-covered foothills of Sulphur Springs Mountains northeast.

ABAG projects a total population of 18,300 by 2015, consistent with City projections.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the wastewater infrastructure needs and deficiencies of American Canyon based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with City staff.

Wastewater System Overview

The City's wastewater collection system consists of three gravity sewer subsystems, four pump stations, a facultative pond wastewater treatment facility, and 18-inch raw wastewater force main. The Main Basin, located from the Napa County line on the south to Hess Road on the north, serves primarily residential areas while the Green Island and Tower Road basins serve industrial areas. Wastewater from all three basins flow to pump stations that discharge into two force mains (one for domestic and one for domestic/industrial) leading to the WWTP. The WWTP provides advanced treatment of wastewater. The collection system has 36 miles of sewer lines (**Table 10-2).**

Table 10-2
City of American Canyon
Wastewater System

Connections	3,226
Residential	3,119
Commercial	100
Industrial/Other	7
Sewer Lines (mi.)	22.5 miles
Gravity Lines	19.5
Force Mains	3
Pump Stations	4
Treatment Level:	Advanced II

Sources: Napa LAFCO Survey, 2005.

American Canyon WWTP

The City's WWTP treats domestic wastewater to Title 22 standards for irrigation. The system has an emergency overflow basin, headworks facilities, anoxic basins, aeration tanks with membrane facilities, chemical storage and metering facilities, chemical and ultraviolet disinfection facilities, a pump station, blower building, and operations building. Waste is transported into the headworks facilities for removal and dewatering of inorganics and grit. Four membrane bioreactors process trains separate treated water from solids. Each process train consists of an anoxic basin for denitrification, aeration basins for biological treatment and nitrification, and immersed ultrafiltration membranes to separate treated water from solids. The WWTP also has two disinfection process trains, an ultraviolet (UV) disinfection tank and chlorine contact tank (CCT). The UV disinfection facility can receive treated effluent from any of the MBRs while the CCT facility is sized to treat all the Main Basin flow for reclamation. The plant also has one concrete-lined basin and one earthen basins to store wastewater flow

during peak wet weather flows and two earthen clay-lined sludge storage basins (3 mg each) capable of handling 10 years of sludge.

Wetlands Restoration

American Canyon's wastewater treatment plant project is unique because it includes a component for wetlands restoration. The project site defines the historic edge of the San Francisco Bay. The City is facilitating restoration of 511 acres of historical tidal wetlands that will provide habitat for endangered species, sensitive plant species, aquatic life, and migratory shorebirds. Phase I involved the acquisition of 453 acres of wetlands adjacent to the North Slough and Napa River. This smaller project is part of a larger restoration project comprising 10,000 acres of wetlands known as the Napa-Sonoma Restoration Project.[2]

Napa-Sonoma Marsh Restoration Project

Phase II is the design, construction, and monitoring of the wetlands area. Restoration of tidal wetlands will be achieved by breaching existing levees around 30 acres of City-owned sewage ponds, breaching existing levees along the Napa River, restricting cattle grazing, and creating wetlands in the upland areas. The City will also donate 58 acres of adjacent wetlands and upland areas and create a visitor viewing area and interpretive program on the east side of Napa River. This project is consistent with the San Francisco Bay Area Wetlands Ecosystem Goals Project and Comprehensive Conservation and Management Plan by supporting the maintenance of freshwater flows to the Bay and restoration and preservation of marshes on the Bay's perimeter. As of June 2005, Phase II was under construction.

Infrastructure Condition

Information was not provided on the condition of the wastewater infrastructure, since the prior Wastewater Service Master Plan was completed in 1996 and forecasted improvements were to be completed by year 2006. However, infrastructure condition information can be gleaned from recent studies on the City wastewater system. As a condition for obtaining a National Pollution Discharge Elimination System Permit for the City's new wastewater reclamation plant, the City analyzed its collection system to determine whether there would be adequate capacity to accommodate collection system flows, without overflow, during a 20-year recurrence interval storm event. Among other findings, the study found that the Main Basin had a significant amount of inflow/infiltration entering the system, causing overflows at potentially 35 to 40 locations. The City has included

[2] http://www.napa-sonoma-marsh.org/

inflow/infiltration reduction in its wastewater connection fees and has included approximately $1.6 million of related work in its CIP for Fiscal Years 2004/05 through 2007-08 sewer line rehabilitation and replacement for those areas known to have problems over the next five years.[3]

Wastewater Service Needs

The City provides wastewater collection and treatment services to all residences, commercial and industrial facilities within its service area. The City serves the Airport but did not indicate plans to serve connections outside its service area. Shown in **Table 10-3**, average annual municipal flow including infiltration is 1.34 mgd and the treatment plant

Table 10-3
City of American Canyon
Wastewater Flow and System Capacity

Type of Connection	Connections as of 2004	
• Domestic	3,119	
• Commercial/Industrial	107	
• Total	3,226	
Type of Wastewater Flow	**Wastewater Flow (mgd)**	**Design Capacity in mgd**
• Municipal Flow	1.03	2.13
• Industrial Flow	0.18	0.38
• Infiltration	0.13	0.13
• Average Annual Flow	1.34	2.50
Peak Daily Wet Weather	3.10	5.00

Source: Napa LAFCO Survey, 2005.

has a design capacity of 2.5 mgd. The plant is designed to accommodate at least a 100-year storm event. In the future, the City plans to expand the wastewater treatment plant to accept 2.64 mgd. The wastewater treatment plant receives a peak daily wet weather flow of 5.0 mgd; additional flows are stored in 5.0 mg earthen basins until processed at the WWTP. Taken together, the City can adequately accommodate present and future wastewater flows.

[3] City of American Canyon, Sanitary Sewer Analysis, HydroScience Engineers, Inc. (December 2001)

Compliance with Applicable Laws

The City's wastewater treatment plant operations are regulated by the California Regional Water Quality Control Board, San Francisco Bay Region Order No. 00-003 and the NPDES Permit No. CA0038768. The Order regulates the location, quality, timing, and amount of effluent treated and discharged by the wastewater treatment plant. The City of American Canyon is currently in excellent standing with the Regional Water Quality Control Board and no enforcement orders are currently on file or pending against the City.

IV. FINANCIAL ISSUES

This section reviews the financial status of American Canyon's Wastewater Enterprise Fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Income and Expenses

The City's wastewater enterprise had revenues of $2,025,932 and expenses of $2,733,449 for a total operating income of ($707,517) during FY 2003-2004. Non-operating expenses ($216,161) from interest expense bring Net Income before contributions to ($923,678). The shortfall is funded by capital contributions of $4.2 million, bringing net assets to $3.1 million. The City receives 96% of its revenue from service fees. Major expenses include maintenance and operations (35% of total), depreciation (30%), employee services (23%), and interfund charges for services (12%). The WWTP was designed to accommodate flow at build-out. Until development approaches build-out, revenues will fall short of costs. Such a shortfall occurred in FY2004-05.

Table 10-4
City of American Canyon
Income and Expense Statement

Revenues	**Amount**
Charges for Services	$1,951,339
Miscellaneous Revenue	$74,593
Expenses	
Employee Services	$636,779
Depreciation/Amortization	$807,560
Maintenance/Operations	$947,610
Interfund Service Charges	$341,500
Operating Inc./(Exp.)	($707,517)
Non-Operating Rev/(Exp.)	($216,161)
Net Income	($923,678)

Source: American Canyon CAFR, FY 2003-2004.

Balance Sheet

The wastewater enterprise had $30.5 million in total assets and $11.5 million in total liabilities (**Table 10-5**). The City had $1,966,196 in current assets including cash, accounts receivable and interest payments. Long term assets totaled $28.5 million, 20% of which is restricted cash, cash equivalents and bond issuance costs and 80% is invested in capital assets such as land, equipment, and distribution and collection systems. The City has sufficient current assets to meet current liabilities. The City has $9.8 million in capital leases, agreements and loans taken out for its wastewater assets. Unrestricted equity consisted of $899,270.

Table 10-5
City of American Canyon
Balance Sheet

Financial Statistics	**FY 2003-04**
Assets	**Amount**
Current Assets	$1,966,196
Long Term Assets	$28,522,312
Total Assets	$30,488,508
Total Current Liabilities	$1,640,025
Long Term Liabilities	$9,812,624
Net Assets	$19,035,859
Invested in Capital Assets	$12,585,741
Restricted Equity	$5,550,848
Unrestricted Equity	$899,270
Total Equity	$19,035,859

Source: American Canyon CAFR, FY 2003-2004.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

The City wastewater enterprise fund has reserves of $5,550,848 for sewer improvements and replacement according to the City's fiscal year 2003-2004 Comprehensive Annual Financial Report (CAFR). An unknown portion of this fund is for sewer system replacements and another portion is for capital reserves. The City has some funds in reserve from the construction of its wastewater treatment plant (completed in 2002). These funds are being held in reserve while the City resolves issues with the contractor for the plant construction. Significant capital asset activity during fiscal year FY 2004-2005 was resulted from the ongoing construction of the City's recycled water system.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention to or funding of maintenance, rehabilitation, and construction of infrastructure is one of the greatest unfunded liabilities facing public agencies.

The City has $5.5 million set aside for capital improvements and replacement for its wastewater enterprise. In 2004-2005, construction is underway for the completion of the WWTP and construction in progress consists of $2,600,000. The remainder of $2,950,848 is set aside for wastewater system replacement. Shown in **Table 10-6**, the annual amount of depreciation on the wastewater collection and treatment system totaled $807,560 in FY 2003-2004, while only $149,429 was budgeted for capital improvements.

Table 10-6
City of American Canyon
Capital Replacement Plans

Financial Statistics	FY 2003-2004
Renewal/Replacement Cost	N/A
Depreciation on Assets	$807,560
Capital Improvement Budget	$149,429
Replacement Fund for improving wastewater system	$5,550,848
Capital Reserve Fund for infrastructure expansion	

Source: City of American Canyon, CAFR, 2003-2004.

Service Fees and Charges

American Canyon charges various fees to fund its wastewater operations. Setting sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. In evaluating rates, low rates do not necessarily indicate efficiency of an agency. Topography, geology, age of infrastructure, deferred maintenance, and capacity of treatment facilities impact the cost of providing wastewater services.

Table 10-7 details the District's current sewer fees and charges as of FY2003-2004. Current wastewater fees are a combination

Table 10-7
City of American Canyon
Wastewater Service Fees

Fee Type	Amount
Availability or Standby Charge	None
Residential Sewer Charge	$33.60 for SFR $31.55-34.80 for MFR $33.60 for Mobile Home
Commercial Sewer Charge	$3.00 Per 1,000 gallons
Connection Fee Residential Commercial and Industrial	$7,900 per connection Based on no. of fixtures and loading factors

Source: SWRCB Survey, 2003. American Canyon

flat rate and variable usage rate fees based on potable water use. Fees are also indexed, at the City's discretion, to inflation. The present fee system is a fixed fee of $33.60 every month for single family residences, and a fee of $31.55-34.80 based on the number of units for multi-family residences and $33.60 for mobile home residences. Commercial and industrial rates are based on usage and are $3.00 per thousand gallons of water used. The connection fee is $7,900 and is placed in a dedicated fund for capital expansion or replacement. Commercial and industrial connection fees are variable, based upon the number of fixtures, and loading factors.

Financial Constraints and Issues

The City's Comprehensive Annual Financial Report for FY 2003-2004 has identified more than $40 million in capital projects to be completed by the year 2010. These include approximately $17 million for the wastewater treatment plant upgrade (recently complete), $8 million to upgrade the water treatment system (in progress) and $15 million in other improvements. Discussions with City staff indicate that the current amount of outstanding debt is backed by wastewater revenues and does not present a significant financial constraint for the community. In FY05-06, the City will begin using Measure A funds to offset debt service on capital costs associated with operation of the wastewater treatment plant. Measure A was a sales tax initiative approved by a countywide vote in 1998. Measure A funds are used by local agencies for flood control protection and watershed management. The City's plant and its expanding recycled water program assist in these pursuits.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the City's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with City staff.

Governance

The City of American was incorporated in 1992 as a general law city. The City of American Canyon operates under a Council-Manager form of government. The governing body consists of the five member city council consisting of three council members, the mayor, and the vice-mayor. The major and vice-mayor are appointed annually from among the five council members. Elections are conducted by general vote; council members serve staggered four-year terms. A city manager is appointed to oversee and implement policies on behalf of the City and to administer the City's five departments: administration, community services, finance, planning, and public works. In 1994,

American Canyon's City Council adopted a general plan that outlines land use and development policies.

Operations

American Canyon's wastewater system is maintained and operated by its Public Works Department. The Department has four divisions – Engineering, Public Works Maintenance, Water Treatment, and Wastewater. The Wastewater Operations Division and employs a Wastewater System Manager, three utility operators and two laboratory staff. Additionally, 1.5 FTE are allocated to Wastewater Collection System maintenance and 1.4 FTE to engineering and administration. Altogether, 8.9 FTE's operate the wastewater collection and treatment operation including the Director of Public Works and administrative and maintenance staff. The Department has a highly trained staff: four employees hold a certification in wastewater treatment and one employee holds certification in wastewater collection. The City uses contractors to perform major preventive maintenance, make pump repairs, and recalibrate sensors for the wastewater collection and treatment system.

Shared Arrangements

The City participates in several jointly-governed organizations that are owned, operated, or governed by several participants in which each retain an ongoing financial interest or responsibility. The City is a member of the Public Agency Risk Sharing Authorities of California, a JPA which provides joint protection programs for public entities covering automobile, general liability, errors and omission losses, workers compensation, and property claims. The Public Works Department has shared relationships with other public agencies. For example, in 2004, the City entered into an agreement with Vallejo Flood Control and Sanitation District to mutually accept emergency overflows where our sewer mains are parallel to each other. Also, the City has an agreement with the Napa-Vallejo Waste Management Authority to construct and operate micro turbines at the WWTP using methane gas generated by the now-closed American Canyon Sanitary landfill. The City participates in insurance pools and purchasing agreements with the County of Napa and maintains a MOU for equipment with the County of Napa. The City also has purchasing agreements with North Bay Chemical Purchasing Agency. The City's wastewater operation shares equipment and vehicle maintenance with the Fire Protection District. The City is a member of the countywide Water Technical Advisory Committee made up of the public works directors of the five cities and Napa County. Its primary purpose is to focus on water issues in Napa County, but it also provides a regular forum for the public works directors to meet and discuss common issues relating to wastewater treatment and recycled water.

Programmatic and Operational Tools

Wastewater operations should have a number of programs, management, and operational tools in place to adequately manage their wastewater collection and treatment system. Among others, important management tools include audited financial statements, workload management programs, preventive maintenance program, SCADA or other electronic monitoring systems, a sewer televising program and regular sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis is beyond the scope of this review, it is possible to determine if an agency's programs are formal and well-organized, informal/limited, or not in place.

A review of City operations reveals that many management programs are in place. The NPDES permit indicates that the City has a preventive maintenance program and capital improvement program in place. The City has regular audited financial statements prepared each year. The City last updated its Wastewater Master Service Plan in 1996, covering the following ten years up to 2006. And the capital improvement program is well funded and explicitly linked to the wastewater service fees and connection fees. Information was not provided with respect to the frequency of sewer televising and cleaning. Workload needs are also coordinated through scheduling of staff of the Public Works Department.

VI. PUBLIC ACCOUNTABILITY

The City of American Canyon's City Council meetings are conducted on the first and third Thursday of every month in the Recreation Center located at 2185 Elliott Drive. Meetings are open to the public and the public is invited to address the Council. Regularly scheduled meetings provide an opportunity for City residents to ask questions of their City Council, while helping to ensure service information is being effectively communicated to the public. All notices are posted to the website and in the newspaper. Public Works staff is available 7:00 a.m. to 4:30 p.m. every weekday at the Corporation Yard, 205 Wetlands Edge Road.

The City of American Canyon provides an annual summary of past and projected revenues and expenditures relating to its water and wastewater service operations as part of its annual budget. The budget is adopted following a publicly noticed board meeting in which members of the public may comment and offer suggestions with respect to expenditures. In addition to enhancing the accountability of the City Council, the budget process provides a clear directive towards staff with respect to prioritizing district resources.

The City maintains a website at http://www.ci.american-canyon.ca.us/ where information on City program and services can be found. The website contains agendas and minutes for each City Council and Planning Commission meeting. The website also includes information on planning issues affecting the development of American Canyon. The website also provides information about water and wastewater services. The City routinely conducts tours of the wastewater treatment plant to residents, schools, and others. Finally, the City includes information about wastewater services in water bill inserts and the community newspaper.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. Sanitation and Wastewater Municipal Service Review Questionnaire, Local Agency Formation Commission of Napa County, 2005.

3. Comprehensive Study of American Canyon Service Review Report, Local Agency Formation Commission of Napa County, 2005.

4. Wastewater Discharge Requirements for American Canyon Wastewater Treatment Plant, Order No. 00-003 and R2-2002-0096 California Regional Water Quality Control Board, San Francisco Region, Dated December 1, 2000

5. 2005 Projections, Association of Bay Area Governments.

6. Comprehensive Annual Financial Report, City of American Canyon, FY 2003-2004.

7. City of American Canyon, Sanitary Sewer Analysis, HydroScience Engineers, Inc. (December 2001)

8. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

9. Wastewater Rate Study: American Canyon, The HYA Group, November 1999.

10. Wastewater Connection Fee Study, City of American Canyon, March 2001.

11

CITY OF ST. HELENA

I. INTRODUCTION

The City of St. Helena was established in the mid-1800s as an agricultural trading and shipping center in Napa Valley. St. Helena quickly developed as tourism increased after the opening of the White Sulphur Springs Hotel and the Napa Valley Railroad Company. St. Helena incorporated in 1876. Today, the City continues to serve as a rural agricultural center. With the growth of the wine industry, the City serves as a tourism center and has also become an important business and banking center for the wine industry as well.

Table 11-1
City of St. Helena
Agency Profile

Date Incorporated	1876
Enabling Legislation	N/A
Agency Type	General Law City
City Size	3,285 acres
Services Provided	Water and Sewer
Population in 2004 Permanent Residents	5,994

Source: Napa LAFCO Survey, 2005.

The City of St. Helena today serves one non-contiguous area comprising 3,285 acres. The adopted sphere of influence is 2,929 acres. The City of St. Helena is located in northern Napa County, east of Lake Berryessa and is accessible by Highway 29. According to the Department of Finance, St. Helena currently serves 5,994 residents as shown in **Table 11-1**. Also, **Figure 11-1** shows the City boundaries.

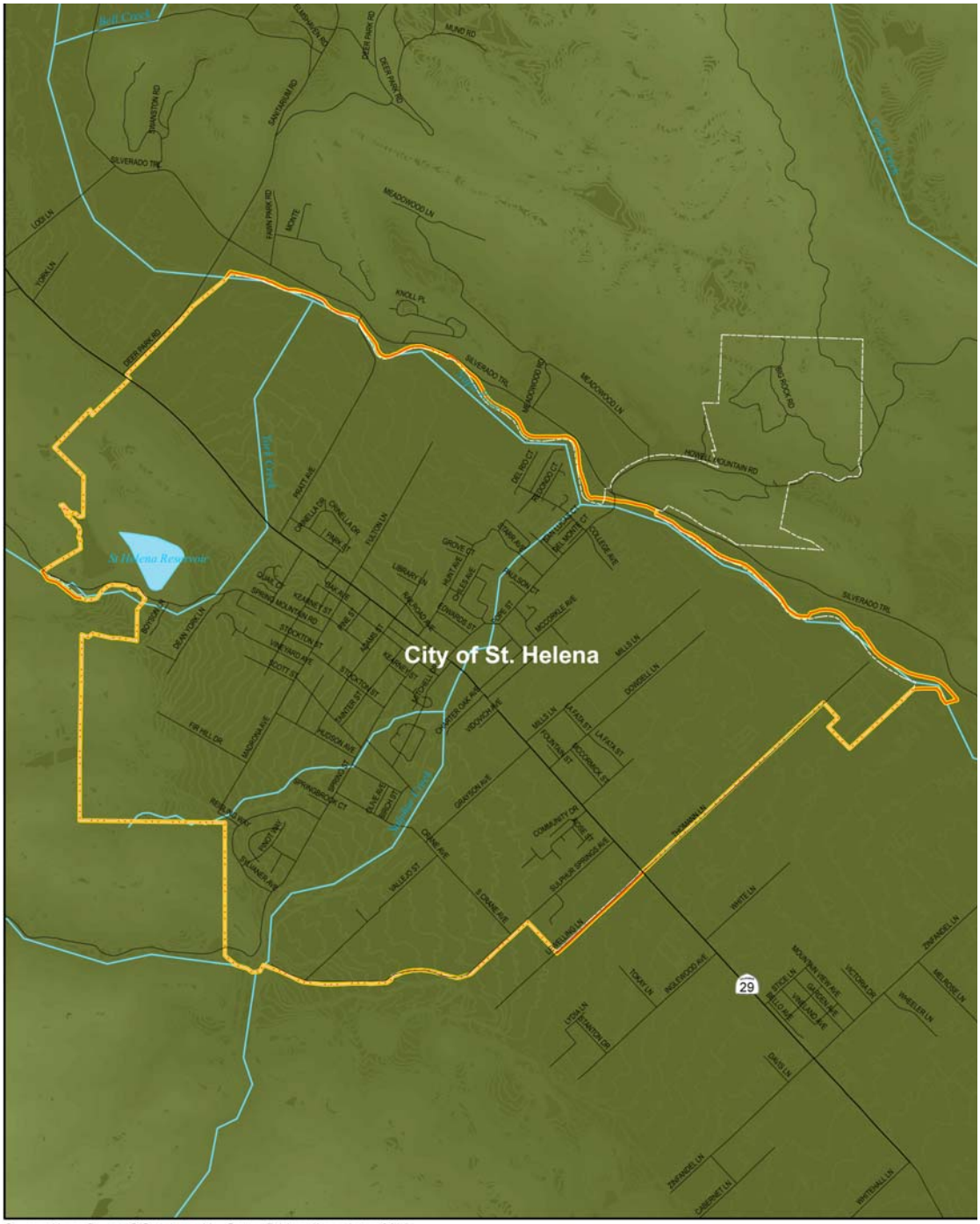


Figure 11.1
City of St. Helena

II. POPULATION GROWTH

This section reviews the City's history, land use patterns, infrastructure issues, and other factors which affect population growth during the timeframe of this MSR

St. Helena was formally incorporated as a general law city in 1876. Historically, the City developed as a service center for the agricultural industry in upper Napa Valley. While still an agricultural service center, the development of the viticultural industry significantly impacted the City. The City has experienced significant changes in land use patterns (substantial increase in agricultural land planted with vineyards), rapid increases in visitor/tourist serving uses, demand for vacation homes, and general growth pressures. These trends led to the City Council's adoption of a Residential Growth Management System (RGM) in the late 1970s. The RGM was recently amended in 2002 to incorporate 2000 Census data.

The St. Helena General Plan was last prepared in 1993 and is scheduled for update. The land use plan reflects the community's desire to maintain its small town character. The primary zones include three residential zones; two commercial zones; agriculture and winery; woodlands and watershed; and industrial. "Agricultural" zoning standards require minimum parcel sizes of 20 acres. Land outside the City is designated "Agriculture, Watershed, and Open Space," a designation that discourages LAFCO from approving annexation proposals based on its policy to direct the extension of municipal services away from land designated for agriculture.

Since the middle 1970s, St. Helena and other communities in Napa County have also faced uncertainty over the reliability of water supplies. Water supply concerns continue to affect potential growth. In the 1980s, growth pressures stemming from the 1970s taxed the City's water supply as did the drought of 1987-1992. To meet system demands, the City instituted mandatory water restrictions in 1987, 1988, 1989, and 1991. The City is evaluating options for better using its existing water supply, by developing a reclaimed water program. By using reclaimed water to irrigate vineyards, turf and other landscaping, the City could more reliably preserve its limited water supply for municipal and industrial uses.

As of January 2004, St. Helena has a total of 2,743 housing units and a permanent population of approximately 5,994 residents, according to the State Department of Finance. The City's present General Plan forecasts a buildout population of about 7,500 residents. However, the City Municipal Code states "with a limitation of nine building permits for market rate housing per year, issued over ten years, the number of dwelling units will be two thousand eight hundred (2,800), not including regulated affordable units,

guest cottages, accessory dwelling units or second units.[1] This translates into a population of 6,215 by 2015. ABAG projects that the City will have a total population of 6,200 residents by 2015, which is consistent with the City's General Plan and the City's growth management controls.

III. INFRASTRUCTURE NEEDS AND DEFICIENCIES

This section reviews the infrastructure needs and deficiencies of the City of St. Helena based on a review of wastewater reports and wastewater treatment plant design, capital improvement program, and interviews with City staff.

Table 11-2
City of St. Helena
Wastewater System

Connections	1,655
Residential	1,480
NonResidential	175
Sewer Lines (mi.)	15 miles
Gravity Lines	14 miles
Force Mains	1 mile
Lift Stations	1
Treatment Level:	Secondary

Source: Napa LAFCO Survey, 2005.

Wastewater System Overview

St. Helena was incorporated in 1876. The City serves 1,665 connections, of which 1,494 are residential and 175 are commercial and industrial connections. The City has 16 miles of lines which are primarily gravity fed lines. Approximately 80% of the entire sewer lines are between 25 to 50 years old, and the remaining 20% are less than 25 years old. The City owns and operates a wastewater treatment and reclamation plant that provides secondary level treatment of municipal wastewater flow from domestic and commercial sources and reclaims the water produced to the extent feasible by land application at agronomic rates.

[1] St. Helena Municipal Code, Section 17.152.030 Population caps and annual growth rate calculation

St. Helena WWTP

The treatment plant consists of headworks, an integrated oxidation pond system, disinfection and dechlorination, and reclamation systems. Wastewater enters the headworks facilities for removal of large solids and grit by a flow comminutor. Wastewater is treated via advanced wastewater stabilization ponds which use anaerobic pits, algae and solar aeration supplemented by mechanical aeration (as needed) to facilitate microbial digestion. Treated wastewater is stored in a 100 acre-foot pond. During the dry season, treated wastewater is discharged via the spray irrigation system to an adjacent field. During the wet season, effluent that cannot be reclaimed is discharged to the Napa River. The plant does not include, nor require, equipment for handling and removal of sludge due to advanced integrated pond system used. The City is also developing a comprehensive reclaimed water project that will provide tertiary-treated water for unrestricted irrigation of parks, landscaping, and vineyards.

Infrastructure Condition

The City's wastewater capital improvement program (CIP) has determined the City's capital improvement needs to be $8.1 million covering the planning period of 2004-2010. The City issued $2 million in bonds in 2005 to fund projects during 2005-2006. Recommendations from the Water and Wastewater Financial Plan and Rate Study (which did not include the Tertiary Project in its basis) suggest that the City work towards fully funding the capital improvement needs from reserves. Recommendations include an operating reserve equal to 15% of annual operating and maintenance expenditures and a capital projects reserve funded annually at an amount that approximates the average future rate of capital replacements which equates to 100% of depreciation or an average of $165,000 per year. Once the costs and benefits of the water to be produced by the Tertiary Project are more fully understood, the City will be in a position to develop a responsible funding plan to construct and operate an appropriately sized plant. Issues under evaluation include better characterization of the demand for tertiary water which in turn will drive production capacity as well as storage and distribution system criteria for the project.

Wastewater Service Needs

The City serves all residential, commercial and industrial users within its boundaries. Average dry weather flow is 0.482 mgd and the treatment plant has a permitted dry weather capacity of 0.5 mgd. The City is designing an upgrade and expansion of the wastewater and permitted dry weather treatment plant that will increase dry weather treatment capacity up to 0.95 mgd, accommodate heavy winter inflows, and be capable of serving population increases over the next twenty years. Existing level of treatment will also be improved from secondary to tertiary approved for unrestricted uses at least for some of the production. However, City population growth over the next ten years will be limited under the City's Residential Growth Management System. Thus, the City has sufficient ability to serve new residential and commercial connections for the period covered under this MSR.

Table 11-3
City of St. Helena
Wastewater Flow and System Capacity

Type of Connection	Connections	
• Domestic	1,480	
• Commercial	172	
• Industrial	3	
• Total	1,655	
Type of Wastewater Flow	**Wastewater Flow (mgd)**	**Design Capacity in mgd**
• Municipal Flow	0.41	0.50
• Industrial Flow	0.17	N/A
• Infiltration Flow	N/A	N/A
• Average Annual Flow	0.58	0.50
Peak Daily Wet Weather	3.6	>3

Source: City of St. Helena, Water and Wastewater Financial Plans and Rate Studies, 2004

IV. FINANCIAL ISSUES

This section reviews the financial status of the City of St. Helena Wastewater Enterprise Fund based on a review of audited financial statements, revenue and expenditure reports, a review of rate structures and reserve policies, and capital improvement programs.

Table 11-4
City of St. Helena
Income and Expense Statement

Revenues	Amount
Charges for Services	$793,721
Other Operating Revenue	$38,518
Expenses	
Services and Supplies	$886,413
Depreciation	$144,709
Purchased Power	$39,862
Operating Inc./(Exp.)	($238,745)
Non-Operating Rev.	$316,713
Net Income	$77,968

Source: City of St. Helena, CAFR 2002-2003.

Income and Expenses

The City Wastewater Enterprise Fund had operating revenues of $832,239 and operating expenses of $1,070,984 for a total operating income of ($238,745) during FY 2002-2003. The shortfall is being funded by non-operating revenues of $37,129, and capital contributions from the general fund of $115,877 and transfers in of $163,707 thus, net change in assets is $77,968. The Fund receives 95% of its revenue from sewer charges. Maintenance and operations expenses comprise the majority (83%) of total expenses. The City has $717,000 in reserves for sewer improvements.

Table 11-5
City of St. Helena
Balance Sheet

Assets	Amount
Current Assets	$803,462
Long Term Assets	$7,207,928
Total Assets	$8,011,390
Total Current Liabilities	$64,381
Long Term Liabilities	$0
Total Liabilities	$64,381
Invested in Capital Assets	$6,468,181
Restricted Equity	$716,913
Unrestricted Equity	$761,915
Total Equity	$7,947,009

Source: City of St. Helena, CAFR 2002-2003.

Balance Sheet

The City Wastewater Enterprise Fund had $8,011,390 in total assets and $64,381 in total liabilities. The Fund had $803,462 in current assets including cash, accounts receivable and short term investments. Long term assets consisted of $7,207,928 of which all is

invested in capital assets such as sewer structures and waste treatment facilities or in reserves for capital improvements. The Fund has sufficient current assets to meet its current liabilities. The Wastewater Enterprise Fund has no long term debt due to a pay-as-you-go philosophy adhered to by the City Council. Unrestricted equity in the Fund consisted of $761,915.

Reserve Policy

Water and sanitation services should adopt specific policies and amounts for reserve funds. These include an operating reserve to provide working capital for operations and maintenance costs, a rate stabilization reserve to guard against unanticipated economic consequences (such as temporary reduction in district funding), and a capital project reserve to set aside money to replace or other wise upgrade existing facilities. The optimal amount of reserves depends on the needs of the agency. A common industry practice is to place an amount equal to three months of operating expenses into an operating reserve and an amount equal to at least the annual depreciation on assets into a capital reserve account.

St. Helena has established various reserves for its Wastewater Enterprise Fund to ensure that adequate funds are available to maintain current service levels. The City's current policy is to maintain a 15 percent minimum operating reserve for each utility because this provides approximately two months of working capital. As such, approximately $8,082,035 was available as an operating reserve as of ending FY 2003-2004. The City also has established a rate stabilization reserve in the amount of $300,000 for its wastewater fund. In addition, the wastewater fund has general reserves of $761,915.

Table 11-6
City of St. Helena
Capital Replacement Plans

Financial Statistics	FY 2002-2003
Renewal/Replacement Cost	N/A
Depreciation on Assets	$144,709
Capital Improvement Budget	$2.8 million (citywide)
Replacement Fund for improving wastewater system	$761,915
Capital Reserve Fund for infrastructure expansion, construction, & replacement.	

Source: City of St. Helena, CAFR 2002-2003.

Funding Asset Replacement

Wastewater agencies have a significant investment in capital assets (e.g., sewer lines, wastewater treatment plant, facilities, equipment, etc.). Protection of capital assets requires periodic and planned maintenance, capital improvements, and recapitalization as needed. Inadequate attention to or funding of maintenance, rehabilitation, and construction of

infrastructure is one of the greatest unfunded liabilities facing public agencies. Annual depreciation on wastewater assets totals $145,000 annually.

The City has identified $8.1 million in wastewater system capital improvements and repairs through 2010. The City has also adopted a capital improvement budget of $2,811,660 citywide and allocated $762,000 in reserves of the wastewater enterprise fund for sewer repairs (**Table 11-6)**. To ensure sufficient reserves for needed improvements to the wastewater system, the City's financing plan recommends a 15% increase in rates in 2005, followed by 10% increases annually through FY 08-09.

Service Fees and Charges

The City of St. Helena charges service and connection fees to fund its wastewater operation. Setting appropriate sewer fees is a complex task and requires predicting the fixed and variable costs of providing collection and treatment services, and translating such costs into a rate structure. In evaluating rates, low rates do not necessarily indicate efficiency of an agency. Agencies in built-out areas may need only to maintain the integrity of current infrastructure and service levels, while agencies in growing areas may need to plan for expansion as well. Topography, age of infrastructure, deferred maintenance, and the existing capacity of treatment facilities impact the cost of providing services.

Table 11-7
City of St. Helena
Wastewater Service Fees

Fee Type	Amount
Availability or Standby Charge	None
Residential Sewer Charge (bimonthly)	$46.59 for SFR $29.93 + $1.36/HCF - MFR/Mobile Home)
Commercial Sewer Charge	Variable based on water consumption
Connection Fee Gravity Line Force Main	$1.90 to $3.36 per square foot depending on land use

Source: SWRCB Survey, 2003.

Table 11-7 details the City sewer fees and charges. In 2004, the City released a Water and Wastewater Financial Plans and Rate Studies Report. This report detailed progressive rate increases that would occur from 2005 to 2009, with a rate adjustment of 15% beginning January 2005 and 10% annually thereafter until 2009. These rate changes would increase revenues to enable the City to meet its current revenue needs.[2] The City also assesses a sewer impact fee for new construction, expansion or conversions, ranging from $1.90 per square foot for office uses to $3.63 per square foot for commercials uses.

2 St. Helena, Water and Wastewater Financial Plans and Rate Studies Final Report, September 15, 2004.

Financial Issues

The City continues to work towards increasing the reliability of its water supplies and includes a water recycling program in its long-range planning. The City is preparing detailed designs for upgrade and expansion of its primary and secondary treatment and reclamation plant facilities, as well as a feasibility study for upgrade of the treatment plant to zero discharge status, and development of a range of phased projects for production, storage and distribution of tertiary treated wastewater suitable for unrestricted use to reduce demand on potable water sources. In January 2005, the City initiated sewer rate increases and is currently evaluating its impact fee structure with the objective of accumulating a higher level of fiscal reserves for its wastewater enterprise. These projects underscore the City's recognition of need for additional revenue over the next five and more years.

V. ADMINISTRATION AND OPERATIONS

This section reviews the administration and operation of the City of St. Helena's wastewater operations based on a review of the Napa LAFCo water municipal review, completion of agency surveys, review of permitting requirements, and interviews with City staff.

Governance

The City of St. Helena is a general law city and operates under a Council-City Manager form of government. The governing body consists of a four-member council and a directly elected mayor. Elections are conducted by general vote; the mayor serves a two-year term while the four City council members 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 oversee the administration of the City's seven departments: finance, fire, library, planning, police, public works, and recreation.

Operations

St. Helena's water and wastewater collection and treatment system is maintained and operated by the City Public Works Department. A public works director is appointed by the city manager to oversee and manage the wastewater operations two sections: wastewater treatment section and the collection section, which is jointly staffed with streets and storm drains. As of June 2005, the wastewater treatment division had three full time employees. Two water treatment division employees are cross trained and wastewater treatment certified, work at the wastewater treatment plant. Four additional employees work in the collection division, which is jointly staffed with streets, sewer, and storm drains. The

Public Works Department also maintains designated operations staff available to work stand-by shifts on call, 24 hours a day and 7 days a week, to respond to any reported emergencies.

Shared Arrangements

The City participates in several jointly-governed organizations that result from a contractual arrangement, and that are owned, operated, or governed by two or more participants in which the participants retain an ongoing financial interest or responsibility. For instance, with respect to risk management, the City is a member of the Redwood Empire Municipal Fund, a JPA which provides joint protection programs for public entities covering automobile, general and auto liability, workers compensation, and property claims. The City is a member of the Upper Valley Waste Management Agency along with the cities of Calistoga, St. Helena, and the County of Napa. The City is a member of the Flood Protection Sales Tax JPA for the purpose of planning use of the one half percent sales tax passed by the voters in 1998. The Town is a member of the countywide Water Technical Advisory Committee made up of the public works directors of the five cities and the County of Napa. Its primary purpose is to focus on water issues in Napa County, but it also provides a regular forum for the public works directors to meet and discuss common issues, such as those relating to wastewater treatment and recycled water.

Programmatic and Operational Tools

Wastewater operations should have a number of management and operational tools in place to effectively manage their wastewater collection and treatment system. Some of the more important management tools include audited financial statements, workload management programs, master facility plan, SCADA or other electronic monitoring systems, a sewer televising and sewer line cleaning program, capital improvement program, preventive maintenance programs, and other similar tools. Although detailed analysis of this topic is well beyond the scope of this review, it is possible to determine whether an agency has a formal and well-organized program, informal or limited program, or lacks a program.

A review of City operations reveals that several programmatic tools are in place. With respect to preventive maintenance, City staff televise and clean the entire system once each year and hotspots on a quarterly basis. The City prepares annual financial statement for its Wastewater Enterprise Fund and a Comprehensive Annual Financial Report. Due to recent studies, the Capital Improvement Program is explicitly linked to the wastewater fee program. The City is currently working with a consultant to design the wastewater treatment plant upgrade and expansion, as well as the recycled water project. The design basis will provide a blueprint for wastewater collection and treatment upon which the City

can build a long-term master plan for upgrades, expansions, operation, monitoring, and maintenance.

Compliance with Applicable Laws

The City's wastewater treatment plant operations are regulated by the California Regional Water Quality Control Board, San Francisco Bay Region Order No. 92-006 and the NPDES Permit No. CA0038016 issued in 1992.[3] St. Helena is authorized to receive inflow up to a monthly average dry weather flow of 0.50 mgd. The CWRCB does not have a current or tentative enforcement order pending against the City. The City of St. Helena is in the process of working with the SWRCB to update their NPDES Permit and Wastewater Discharge Requirements consistent with the planned upgrade and expansion of the City Wastewater Treatment Plant.

VI. PUBLIC ACCOUNTABILITY

St. Helena's City Council meetings are conducted on the second and fourth Tuesdays of each month at 7:00 p.m. in the Vintage Hall Board Room located on the St. Helena High School Campus. Meetings are open to the public. Members of the public are encouraged to offer comments on any items. Meetings are broadcast live on Channel 28 and are replayed on Fridays and Sundays after the meetings at 7:00 p.m. and 4:00 p.m., respectively.

The City provides, upon request, an annual summary of past and projected revenues and expenditures relating to its water and wastewater service operations as part of its annual budget. The budget is adopted following a publicly noticed City meeting in which members of the public may comment and offer suggestions with respect to expenditures. In addition to enhancing the accountability of the City Council, the budget process provides a clear directive towards staff with respect to prioritizing City resources.

The City's website provides limited information about the City's water and wastewater operations. The website can be accessed at http://city.ci.st-helena.ca.us/. Information provided includes water and wastewater financial plans, urban water management plan, agendas and minutes of meetings. Information about City budgets is not available from the website. The City provides additional information regarding its wastewater operations through various mailers, water bill inserts, newsletters, and other mediums.

[3] City of St. Helena, 2003 Urban Water Management Plan, May 2003. The permit was reissued June 15, 2005.

VII. CITATION LIST

1. Comprehensive Water Service Study Service Review Report, Local Agency Formation Commission of Napa County, October 2004

2. U.S. Census, 2000. Demographic Profiles

3. City of St. Helena Comprehensive Annual Financial Report 2002-2003.

4. Wastewater User Charge Survey Report, Summary and Listing of Data from September 2003–April 2004 Survey of California Wastewater Agencies, FY 2003-04, State Water Resources Control Board, May 2004.

5. City of St. Helena Water and Wastewater Financial Plans and Rate Studies Final Report, September 2004.

6. California Regional Water Quality Control Board San Francisco Bay Region NPDES Permit No. CA0038016 for City of St. Helena, Napa County.

7. City of St. Helena 2003 Urban Water Management Plan, May 2003.

8. City of St. Helena Approved Budget for Fiscal year 2001-2002, June 2001.

12 GLOSSARY AND ACRONYMS

TERM	DEFINITION
Aeration Tank	Part of the wastewater treatment system, the aeration tank exposes effluent to oxygen, thus speeding up the breakdown of organic materials utilizing aerobic micro bacteria.
Annexation	The annexation, inclusion, attachment, or addition of territory to a city or district.
Board of Directors	The legislative body or governing board of a district.
Board of Supervisors	The elected board of supervisors of a county.
Brown Act	The Brown Act (Government Code §§ 54950-54962) governs meeting access for local public bodies. Meetings of public bodies must be "open and public," actions may not be secret, and action taken in violation of open meetings laws may be voided. Additionally agencies must take other steps to ensure that the public is not excluded from the meeting process.
Change of organization	A city incorporation, district formation, annexation to, or detachment from, a city or district, disincorporation of a city, district dissolution, consolidation of cities or special districts, or merger or establishment of a subsidiary district.
City	Any charter or general law city, including any city the name of which includes the word "town."
City Council	The elected legislative body of a city.
Clarifier	Part of the wastewater treatment system that skims debris from the top of effluent in the tank and allows suspended solids to fall to the bottom where they are collected and processed as sludge.
Consolidation	The joining of two or more cities located in the same county into a single new city or single new successor district. In the

	case of consolidation of special districts, all of those districts shall have been formed pursuant to the same principal act.
Cost avoidance	Actions to eliminate unnecessary costs derived from, but not limited to, duplication of service efforts, higher than necessary administration/operation cost ratios, use of outdated or deteriorating infrastructure and equipment, underutilized equipment or buildings or facilities, overlapping/inefficient service boundaries, inefficient purchasing or budgeting practices, and lack of economies of scale.
Design capacity	Referring to the maximum ability to supply public water or treat wastewater from a jurisdiction's existing infrastructure.
District or special district	An agency of the state, formed pursuant to general law or special act, for the local performance of governmental or proprietary functions within limited boundaries. "District" or "special district" includes a county service area.
Enterprise activities	Activities accounted for in a manner similar to a private business such as a water utility. The acquisition, operation, and maintenance of governmental facilities and services are entirely or predominantly self-supporting through user charges or fees. The State Controller separates enterprise activities into seven categories: airports, electric, harbor and port, transit, waste disposal, utility, and hospital.
Feasible	Capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, legal, social and technological factors.
Federal Water Pollution Control Act of 1972	Also known as the Clean Water Act (CWA), this is the principal law governing the nation's streams, lakes, and estuaries. It contains regulatory provisions that impose progressively more stringent requirements on industries and cities to reduce and eliminate pollution of waterways. The CWA establishes as national goals the elimination of pollutant discharges to the navigable waters and the assurance that all navigable waters would be fishable and swimable. It requires dischargers to obtain permits regulating the amount, quality, location, and timing of pollutant discharges.
Force Mains	Wastewater Lines that work under pressure and are typically the

	highest flow lines in the wastewater system.
Formation	The formation, incorporation, organization, or creation of a district.
Function	Any power granted by law to a local agency or a county to provide designated governmental or proprietary services or facilities for the use, benefit, or protection of all persons or property.
GPM (gallons per minute)	Rate of flow of water or wastewater. Also expressed in terms of gallons per day (gpd)
Gravity Lines	Wastewater lines that work with gravity assisted movement only.
Incorporation	The incorporation, formation, creation, and establishment of a city with corporate powers. Any area proposed for incorporation as a new city must have at least 500 registered voters residing within the affected area at the time commission proceedings are initiated.
Infrastructure needs and deficiencies	The term, "infrastructure" is defined as public services and facilities, such as sewage-disposal systems, water-supply systems, other utility systems, and roads (General Plan Guidelines). Any area needing or planned for service must have the infrastructure necessary to support the provision of those services. The term, "infrastructure needs and deficiencies," refer to the status of existing and planned infrastructure and its relationship to the quality and levels of service that can or need to be provided.
Joint Commission	A single Commission formed to preside over the functions of a multi-LAFCO Joint Powers Agreement. The Commission may be comprised of all or a portion of the Commissioners of the individual Commissions that are participating in the Joint Powers Agreement. A Joint Commission, as herein defined, does not constitute an individual agency. It is intended to jointly exercise existing powers common to each agency.
LAFCO	Local Agency Formation Commission
Lift Station	A pumping system utilized to move water uphill under pressure.
Local accountability	Local accountability and governance refers to public agency

and governance	decision making, operational and management styles that include an accessible staff, elected or appointed decision-making body and decision making process, advertisement of, and public participation in, elections, publicly disclosed budgets, programs, and plans, solicited public participation in the consideration of work and infrastructure plans; and regularly evaluated or measured outcomes of plans, programs or operations and disclosure of results to the public.
Local agency	A city, county, or special district or other public entity, which provides public services.
Merger	The extinguishment, termination, and cessation of the existence of a district of limited powers by the merger of that district with a city as a result of proceedings taken pursuant to this division.
Municipal services	The full range of services that a public agency provides, or is authorized to provide, except general county government functions such as courts, special services and tax collection. Napa LAFCO will review services that are provided by public agencies that are required to have a Sphere of Influence, as well as other agencies providing services to a countywide, regional, or statewide area that includes portions of Napa County.
Non-enterprise activity	A non-enterprise activity, such as fire protection, is an activity that has an accounting system organized on a governmental fund basis.
Open space	Any parcel or area of land, which is substantially unimproved and devoted to an open-space use.
Porter-Cologne Water Quality Control Act of 1970	Regulates water quality and pollution issues within California by protecting water quality and beneficial uses of all state waters. The Porter-Cologne Act is administered regionally by the State Water Resources Control Board and California Regional Water Quality Control Boards (RWQCB).
Planning area	The area directly addressed by the general plan. A city's planning area typically encompasses the city limits and potentially annexable land within its SOI (General Plan Guidelines (GPG) page 230).
Planned development	Unlike other zones requiring very low density development, due

zone	to large minimum lot sizes, parcels zoned for Planned Development are not required to have a minimum parcel size.
Public agency	The state or any state agency, board, or commission, any city, county, city and county, special district, or other political subdivision, or any agency, board, or commission of the city, county, city and county, special district, or other political subdivision.
Rate restructuring	Rate restructuring does not refer to the setting or development of specific rates or rate structures. During a municipal service review, LAFCO may compile and review certain rate related data, and other information that may affect rates, as that data applies to the intent of the CKH Act, factors to be considered, SOI determinations, and all required service review determinations. The objective is to identify opportunities to positively impact rates without adversely affecting service quality or other factors.
Regional	Pertaining to activities or economies at a scale greater than that of a single jurisdiction, and affecting a broad geographic area.
Renewal and Replacement Program	Financial reserves that are designated specifically for current infrastructure replacement and renewal and are not for future infrastructure design or construction.
Reorganization	Two or more changes of organization initiated in a single proposal.
Retained Earnings	The accumulated earnings of an enterprise or intragovernmental service fund which have been retained in the fund and are not reserved for any specific purpose (debts, planned improvements, contingency/emergency).
Reserve	(1) For governmental type funds, an account used to earmark a portion of fund balance, which is legally or contractually restricted for a specific use or not appropriable for expenditure. (2) For proprietary type/enterprise funds, the portion of retained earnings set aside for specific purposes. Unnecessary reserves are those set aside for purposes that are not well defined or adopted or retained earnings that are not reasonably proportional to annual gross revenues.
Secondary Treatment	Secondary treatment provides the mechanical treatment of the

	primary treatment process which includes grinding, and clarification as well as aeration or anaerobic digestion where microbes break down effluent even further and also may include chlorination.
Service	A class established within, and as a part of, a single function, as provided by regulations adopted by the commission pursuant to Chapter 5 (commencing with §56820) of Part 3.
Service review	A study and evaluation of municipal service(s) by specific area, sub-region or region culminating in written determinations regarding nine specific evaluation categories.
Sludge	Solid waste generated from the de-watering during the wastewater treatment process. Often composted or removed to a solid waste facility.
Special District	A district that is designed for a specific purpose and either functions independently from other districts or is dependent on outside support from Cities, the County, or other Special Districts.
Sphere of influence (SOI)	A plan for the probable physical boundaries and service area of a local agency, as determined by the LAFCO commission.
Reorganization	Two or more changes of organization initiated in a single proposal which may include a merger or consolidation.
Tertiary Treatment	Tertiary treatment provides all the treatment of the primary and secondary treatment process and then adds one further step that is chemical, ozone or ultraviolet treatment.
Water and Wastewater District Act, California Water District Law, Division 13 of the California Water Code 30000	A law created to facilitate the formation of public agencies to provide water and sewer services.
Watrtac	A technical advisory committee that is part of the Napa County Flood Control and Water Conservation District and provides consensus among five cities and the County as it relates to current and future water issues affecting Napa County.

II. ACRONYMS

ABAG	Association of Bay Area of Governments
AFA	Acre-Feet Annually
Af/yr	Acre-Feet per Year
BOD	Biological Oxygen Demand
CAFR	Comprehensive Annual Financial Reports
CEQA	California Environmental Quality Act
CIP	Capital Improvement Plan
CKH	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
COCWD	Circle Oaks County Water District
COD	Chemical Oxygen Demand
COG	Council of Governments
CSA	County Service Area
CWA	Clean Water Act
DOF	State Department of Finance
EIR	Environmental Impact Report
GP	General Plan
GPD	Gallons per Day
GPM	Gallons per Minute
JPA	Joint Powers Agreement
LA	Load Allocations
LAFCO	Local Agency Formation Commission
LBRID	Lake Berryessa Resort Improvement District
MFP	Master Facilities Plan
MGD	Millions of Gallons per Day
MOU	Memorandum of Understanding
MSR	Municipal Service Review
MRP	Monitoring and Reporting Program

NCFCWCD	Napa County Flood Control and Water Conservation District
NBRID	Napa Berryessa Resort Improvement District
NPSMP	Non-point Source Management Plan
NSD	Napa Sanitation District
NRRD	Napa River Reclamation District
PVC	Poly-vinyl Chloride
RUL	Rural Urban Line
RWQCB	Regional Water Quality Control Boards
SCADA	Supervisory Control and Data Acquisition
SFWD	Spanish Flat Water District
SOI	Sphere of Influence
SS	Suspended Solids
SWRCB	State Water Resources Control Board
SWRF	Soscol Water Recycling Facility
TMDL	Total Daily Maximum Load
TOD	Total Oxygen Demand
TSS	Total Suspended Solids
Watrtac	Water Technical Advisory Council
WQLS	Water Quality Limited Segments
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant