LAKE LAFCO

MUNICIPAL SERVICE REVIEW

FOR SERVICES PROVIDED BY THE

LAKE COUNTY SANITATION DISTRICT (LACOSAN)

Adopted
NOVEMBER 17, 2010
LAFCo Resolution 2010-0012

LAKE LAFCO

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1 INTRODUCTION

This report is a Municipal Service Review of wastewater collection and treatment services provided by the Lake County Sanitation District (LACOSAN). This Municipal Service Review was conducted in accordance with the State of California LAFCO Municipal Service Review Guidelines, Section 56430 of the California Government Code, and Lake LAFCO Policies and Procedures.

The study area includes most of the area served by LACOSAN and excludes Clearlake Oaks Water District (CLOWD), the Kelseyville County Waterworks District #3, City of Lakeport and Hidden Valley Lakes because these areas have been reviewed separately. LACOSAN serves approximately 12,000 customers and operates wastewater treatment systems at three locations in Lake County. These include the following:

1) Northwest Regional Wastewater system serving the following:
   - A. Kono Tayee
   - B. Lucerne
   - C. Nice
   - D. North Lakeport
   - E. Paradise Valley
   - F. Upper Lake
2) Southeast Regional Wastewater system serving Clearlake and Lower Lake
3) Middletown system

1.1 LAFCO's Responsibilities

Local Agency Formation Commissions are quasi-legislative local agencies created in 1963 to assist the State in encouraging the orderly development and formation of local agencies. The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 (Government Code §56000 et seq.) is the statutory authority for the preparation of an MSR, and periodic updates of the Sphere of Influence of each local agency. The Governor's Office of Planning and Research has issued Guidelines for the preparation of an MSR. This MSR adheres to the procedures set forth in the MSR Guidelines.

A Sphere of Influence is a plan for the probable physical boundaries and service area of a local agency, as determined by the affected Local Agency Formation Commission (Government Code §56076). Government Code §56425(f) requires that each Sphere of Influence be updated as necessary, not less than every five years, and §56430 provides that a Municipal Service Review shall be conducted in advance of the Sphere of Influence update.

1.2 Municipal Service Review Requirements

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 as amended by AB1744 and regulations call for a review of the municipal services provided in the county or other appropriate area designated by the LAFCO.

The LAFCO is required, as part of the MSR, to prepare a written statement of findings of its determinations with respect to each of the following:

1. Growth and Population
2. Capacity and Infrastructure
3. Financial Ability
4. Shared Facilities
5. Government Structure and Accountability

1.3 Lake LAFCO Policies and Procedures Related to Municipal Services

The Lake LAFCO adopted policies and procedures related to municipal services on March 20, 2002. There were amended by action of the Lake LAFCO on July 16, 2003 and November 28, 2007.

1.4 Preparation of the MSR

Research for this Municipal Service Review (MSR) was conducted over a period of several years and updated in 2010. This MSR is intended to support preparation and update of Spheres of Influence, in accordance with the provisions of the Cortese-Knox-Hertzberg Act. The objective of this Municipal Service Review (MSR) is to develop recommendations that will promote more efficient and higher quality service patterns; identify areas for service improvement; and assess the adequacy of service provision as it relates to determination of appropriate sphere boundaries.

While LAFCO prepared the MSR document, LAFCO did not engage the services of experts in engineering, wastewater treatment, hydrology and other specialists in related fields; but relied upon published reports and Lake County staff for information. Therefore, this MSR reflects LAFCO's recommendations, based on available information during the research period and provided by Lake County staff to assist in its determinations related to promoting more efficient and higher quality service patterns; identifying areas for service improvement; and assessing the adequacy of service provision for each wastewater treatment area.

LACOSAN is managed and staffed by the Lake County Special Districts Administration (SDA). The SDA has conducted various studies of LACOSAN with the help of consultants. This MSR includes relevant information from the various reports. Since the reports were prepared at different times there may be occasional differences in data. The most recent report is the Foresight Consulting "Water and Sewer Rate Study Report" which will be cited extensively. Tables from the Foresight Study are included in Appendix A at the end of this report.

1.5 Description of Public Participation Process

The LAFCO proceedings are subject to the provisions California's open meeting law, the Ralph M. Brown Act (Government Code Sections 54950 et seq.) The Brown Act requires advance posting of meeting agendas and contains various other provisions designed to ensure that the public has adequate access to information regarding the proceedings of public boards and commissions. Lake LAFCO complies with the requirements of the Brown Act.

The State MSR Guidelines provide that all LAFCOs should encourage and provide multiple public participation opportunities in the municipal service review process. Lake LAFCO has discussed and considered the MSR process in open session, and has adopted a schedule for completing the various municipal service reviews and sphere of influence updates for Lake County. Each municipal service review will be prepared as a draft, and will be subject to public and agency comment prior to final consideration by the Lake LAFCO.

1.6 California Environmental Quality Act (CEQA)

The Municipal Service Review is a planning study that will be considered by Lake LAFCO in connection with subsequent proceedings regarding the Lake County Sanitation District and the Spheres of Influence. The Sphere of Influence review or update that will follow has not been approved or adopted by LAFCO. This MSR is funded in the Lake LAFCO's 2010-2011 Budget. This MSR includes an analysis, to the extent required by Section 15262 of the CEQA Guidelines, of the environmental factors that may be affected by the Municipal Service Review process, but will not include the preparation of an environmental review document.

2 SERVICE AREA SETTING

2.1 Regional Setting--Lake County

Lake County is located in the north central portion of California, north of the San Francisco Bay Area. It takes its name from Clear Lake, the dominant geographic feature in the County. As of 2000 the population was 58,309 including 23,974 households, and 15,367 families; this increased to a population of 64,053 with 34,645 housing units on July 1, 2010. The County seat is Lakeport. Lake County was formed in 1861 from parts of Napa and Mendocino counties. The County has a total area of 1,329 square miles, including 72 square miles (5.38%) of water.

The most common wastewater treatment methods used in Lake County include aerated lagoon and facultative (bacterial) systems. Some of the County's treatment plants have been significantly upgraded over the past ten years to accommodate larger flows and maintain secondary treatment standards consistently. Other important issues in the Lake County area concerning wastewater disposal include winery waste disposal and septage disposal from septic tanks.

2.2 Full Circle Project

2.2.1 Full Circle Project Background

The Full Circle Project in Lake County is a unique public/private partnership of local, State, Federal and corporate stakeholders and has developed a wastewater-to-electricity system at The Geysers. Wastewater reuse is a Special Districts initiative to recycle treated effluent for creation of wildlife habitat, irrigation of agricultural lands, and generation of geothermal power. Special Districts injection of effluent at the Geysers for geothermal steam production and power generation is the first of its kind in the world. The agency's goal is to maximize the energy, environmental, and economic benefits that wastewater reuse can achieve for Lake County.[1]

The Full Circle Project materialized because of high growth in Lake County that strained public infrastructure and services, including County-operated wastewater treatment systems. In the 1980s, the Lake County Sanitation District (LACOSAN) found its wastewater treatment systems deficient in terms of both treatment quality and disposal capacity.

The State ordered LACOSAN to upgrade its treatment process and find a means of disposing of larger quantities of effluent. LACOSAN spent several years evaluating alternative treatment and disposal options, including agricultural irrigation, created wetlands, and ultimately geothermal injection.

Once the project concept emerged, a group of key stakeholders convened to investigate its feasibility and pursue project development. The core group included LACOSAN, the Northern California Power Agency (NCPA), Calpine Corporation, Unocal Corporation, and Pacific Gas & Electric Company (PG&E).

[1] County of Lake, Special Districts Department Website August 2010.

2.2.2 Full Circle Project Construction

At the heart of the wastewater reuse system is a 50-mile pipeline that collects effluent from ten communities for injection in the Geysers geothermal steamfield. The first phase of the recycling pipeline was completed in 1997 between the Southeast Regional and Middletown treatment plants and the Geysers; the first segment of the Phase 2 pipeline was completed in 1999 with connection of the Clearlake Oaks treatment plant to the system; and the remainder of the Phase 2 pipeline to the Northwest Regional treatment plant was completed in 2003.

The system's first phase delivers an average of 5,400 gpm to geothermal injection wells operated by the Northern California Power Agency (NCPA) and Calpine Corporation. These industry partners have achieved a 70 MW increase in generating capacity since Phase 1 operations began. Phase 2 has increased effluent injection volume by approximately 20% in normal weather years, and by as much as 150% in drought years.

The existing project consists of a 53-mile, 20-inch (and some 16-inch sections such as the 24.75-mile section from the Northwest Regional Treatment Plant [NWRTP] to the Southeast Regional Treatment Plant [SERTP]) diameter pipeline that carries 7.8 million gallons per day (approximately 2.8 billion gallons annually) of treated wastewater effluent and Clear Lake make-up water to The Geysers for injection at existing wells operated by Northern California Power Agency and Calpine.

To move the treated effluent and supplementary lake water, the pipeline uses eight pump stations totaling 7,370 horsepower, including a 1,600 foot final lift from the Bear Canyon Road entrance up to the injection area in the southeast Geysers. The project creates up to 95 MW of generating capacity at six existing power plants operated by NCPA (Northern California Power Agency) and PG&E, or as much as 625,0000 MWh annually.

Phase I of the project's total construction cost is $45 million, including $8 million in wastewater treatment plant improvements. Construction costs are being shared by the core group of participants, known as the Joint Operating Committee (JOC), with additional funding from the California Energy Commission, California Water Resources Control Board, U.S. Department of Energy, U.S. Department of Commerce, U.S. Department of the Interior, and the U.S. Environmental Protection Agency.

For Phase I, approximately 40% of the construction costs are industry-funded, 20% are County funded, and the remaining 40% is divided equally between economic development and energy resource funds from the Federal and State agencies. Additionally, the industry participants are investing several million dollars in secondary pipelines terminus to injection wells in the steamfield.

2.2.3 Full Circle Project Operation

The project's annual operating costs are approximately $4 million. The JOC members have signed a 25-year operating agreement wherein LACOSAN will operate the pipeline as far as the Middletown area, after which it will be industry-operated to its terminus in the steamfield. Phase I initiated operations in October 1997. Phase 2 (Basin 2000) initiated operations 2001.

LACOSAN pays an annual operation and maintenance (O&M) cost share equivalent to its normal disposal costs, with the industry participants paying the remaining O&M costs based on the quantity of effluent they each receive at their wellheads.

2.3 Local Setting

This Municipal Service Review covers all of the areas served by the Lake County Sanitation District. Although there are multiple agencies providing wastewater collection and treatment services throughout Lake County, many rural areas throughout the County are currently not served by a sanitary sewer system and rely on private or community septic systems.

Notwithstanding the ability to obtain an on-site wastewater disposal permit, development standards in the Lake County Zoning Code for a Single-Family Residential (R-1) Zoning District require the size of a new parcel of land to contain 15,000 square feet provided public water is provided. If no public water and no public sewer are provided, the minimum lot size requirement increases to 40,000 square feet.

Many areas throughout Lake County contain soil types or conditions that are not conducive to on-site septic disposal systems such as those areas with soils that prevent adequate filtration. All special districts providing wastewater services currently provide both wastewater treatment and collection services within the Lake County area.

These wastewater collection and treatment providers include the following:

1. City of Lakeport Municipal Sewer District (CLMSD) provides collection and treatment of wastewater collected in and around the City of Lakeport. The collection system that serves Assessment District 9-1 (Lands End, Holiday Cove, and Reeves Point), as well as Assessment District 9-3 (South Lakeport), is maintained by LACOSAN. However, the effluent is treated and disposed of at the City of Lakeport's Municipal Wastewater Treatment Facility.

2. Lake County Sanitation District (LACOSAN) provides wastewater collection treatment and disposal for areas north and northwest of the City of Lakeport, Upper Lake, Nice, Lucerne, Kono Tayee, Paradise Valley, Clearlake, Lower Lake, and Middletown.

3. Hidden Valley Lake Community Services District (HVLCSD) provides wastewater treatment and collection service for the community of Hidden Valley Lakes.

4. Clearlake Oaks County Water District (CLOWD) provides wastewater treatment and collection for the Clearlake Oaks area. This District is examined in a separate Municipal Service Review. Treated effluent from this plant is recycled through the LACOSAN Wastewater reuse system. The Clearlake Oaks Wastewater Treatment Plant and Pump Station have a normal flow of 275 to 500 gpm. Pump station No. 2 has three 250 horsepower vertical turbine pumps, an electrical equipment building and a surge tank.

The maximum daily discharge and monthly average dry weather discharge design capacities are 2.1 and 0.5 million gallons per day (mgd), respectively. Wastewater flows for the CLOWD range from 0.200 mgd ADWF to 1.0 mgd AWWF with peak wet weather flows up to 0.813 mgd.

The treatment plant experiences excessive flows during wet weather due to Infill and Infiltration (I&I) associated with an aging collection system. Treated effluent is pumped to the LACOSAN southeast reservoir and then pumped by LACOSAN 20 miles southwest to the Geysers for injection into the groundwater.

5. Kelseyville County Waterworks District #3 (KCWD) provides wastewater treatment and collection for the Corinthian Bay, Kelseyville, and the Clear Lake State Park. This District is examined in a separate Municipal Service Review.

Wastewater treated at LACOSAN's Northwest, Southeast and Middletown Wastewater Treatment Facilities is delivered to the Southeast Geysers Injection area located in Lake and Sonoma Counties. LACOSAN and CLMSD have an agreement for wastewater treatment in which wastewater treated in North Lakeport is transported to LACOSAN's Northwest Treatment Plant and wastewater treated South of Lakeport is treated in the CLMSD treatment facility south of Lakeport.

3 HISTORY OF LACOSAN

3.1 Lake County Sanitation District Formation

The Lake County Sanitation District (LACOSAN) is headquartered in Lakeport at the Lake County Special Districts Administration. Special Districts Administration is a County department that provides water and wastewater collection and treatment services including nine County Service Areas and the Kelseyville County Waterworks District #3. The Lake County Board of Supervisors oversees the nine County Service Areas and also sits as the Board of Directors for LACOSAN and the Kelseyville County Waterworks District #3.

The District with the largest budget and most assets is LACOSAN. The Special Districts Administration is able to share resources with other County departments for a variety of administrative, legal and financial services. The Special Districts Administration has 40 position allocations including administrative, financial, supervisory and technical staff.

The Lake County Sanitation District (LACOSAN) was formed by Resolution 63-196 by the Lake County Board of Supervisors on December 9, 1963, a few weeks before Assembly Bill 1662 (Knox), the legislation that originally created LAFCO, became law. Prior to the passage of Resolution 63-196, the Lake County Board of Supervisors passed Resolution 63-175 (November 4, 1963), a resolution of intention to form LACOSAN, pursuant to the provisions of 4700 et seq. of the Health and Safety Code known as a "County Sanitary District."

The original District excluded all the incorporated areas within Lake County at the time of formation. Lakeport (the only incorporated area at that time) was excluded from territory within LACOSAN. Lakeport and surrounding areas were detached in 1971 and 1973 (Resolution 71-161 and 73-148). Since no incorporated territory or territory within other sanitary districts was included in LACOSAN, the Board of Supervisors was established as its Board of Directors.

3.2 Lake County Sanitation District Changes

Since its inception, the LACOSAN service area has decreased in size yet has experienced increased development and the establishment of Assessment Districts. In 1972, LAFCO approved Resolution 72-1 and the LACOSAN Board of Directors passed Resolution 72-53, ordering the detachment of the Clearlake Oaks County Water District territory consisting of 2,325 acres.

In 1979 LAFCO approved Resolutions 7-79 and 8-79 approving the annexation of 11.7 acres to the CLMSD and detaching 11.7 acres from LACOSAN known as the Jeffers-Ruzicka detachment. Also in 1979 LAFCO approved the detachment of 18,975 square feet of territory from LACOSAN known as the Harker Detachment.

In 1986 LAFCO approved Resolution 14-84 and the Board of Directors of LACOSAN approved a detachment of 1,874 acres of agricultural lands from LACOSAN in Big Valley known as the "Big Valley 'AG' Detachment."

In 1997 LAFCO approved Resolution 97-02 Approving a Reorganization between City of Lakeport Municipal Sewer District (CLMSD) and LACOSAN detaching 387.4 acres of territory located outside the City of Lakeport yet within CLMSD to LACOSAN. This reorganization included unincorporated territory north of the City of Lakeport. Over the years, multiple reorganizations have taken place in which unincorporated territory was detached from LACOSAN and annexed to the City of Lakeport and the CLMSD.

LAFCO approved the incorporation of the City of Clearlake in 1980. The LAFCO resolution ordering the incorporation did not include any detachment from LACOSAN. LAFCO Resolution 2-80, approving the incorporation of the City, determined that "the proposed incorporated City of Clearlake will not be successor to any special district presently providing municipal services." Land in the City of Clearlake was never detached from LACOSAN for that reason.

In 1983 the Lake County Board of Supervisors, acting as Conducting Authority, approved Resolution 83-350 forming the Hidden Valley Lake Community Services District for the "purposes of maintaining and constructing public improvements, namely sewer and water services within the boundaries of the District." The Hidden Valley Lake CSD remains within LACOSAN district territory, creating a conflict of Spheres of Influence.

4 DESCRIPTION OF EXISTING SERVICES

4.1 Treatment Plant Use

Average Dry Weather Flows (ADWF) and Average Wet Weather Flows (AWWF) in Million Gallons per Day (MGD) for LACOSAN's three treatment plants are as follows:

Facility: Northwest RWWTP

Total Connections:	4,670 (SFDs 5,984)[2]
Type:	Dual-powered, multi-cellular aerated lagoons
Peak WW Flow:	8.5 mgd
Northwest Region:	9,937 population[3]

Southeast RWWTP

Total Connections:	6,707 (SFDs 8,471)[4]
Type:	Dual-powered, multi-cellular aerated lagoons
Peak WW Flow:	6.1 mgd
Clearlake/Lower Lake:	15,226 population[5]

Facility: Middletown WWTP

Connections:	733 (SFDs 811)[6]
Type:	Facultative Pond with aeration
Peak WW Flow:	0.34 mgd
Middletown:	1,822 population[7]

This information is from the three Master Plans. Lake County rate ordinances are based on 210 gallons per day of wastewater generated per connection (Single Family Dwelling Equivalent, SFD) for the four treatment plants.[8] A planning figure based on the average of 210 GPD per SFD equivalent[9] will therefore be used as a basis for calculation in this report. LACOSAN completed Master Plans for each treatment plant in 2005. An interim master plan for the Southeast Regional Collection System was completed in 2009.

4.2 LACOSAN Personnel

LACOSAN operates its four regional wastewater treatment systems with approximately 40 employees. There is one Administrator position overseeing a Deputy Administrator and three utility area superintendents.[10] LACOSAN has all the personnel required to run a system of this size, and all personnel possess the necessary credentials to adequately run a wastewater collection and treatment system of this nature.

[2] Lake County Special Districts Administration, "Current Operations by Utility Area," 8/6/10.
[3] Lake County Special Districts Administration, "Current Operations by Utility Area," 8/6/10.
[4] Lake County Special Districts Administration, "Current Operations by Utility Area," 8/6/10.
[5] Lake County Special Districts Administration, "Current Operations by Utility Area," 8/6/10.
[6] Lake County Special Districts Administration, "Current Operations by Utility Area" 8/6/10.
[7] Lake County Special Districts Administration, "Current Operations by Utility Area", 8/6/10.
[8] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, 2010.
[9] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, 2010.
[10] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, 2010.

4.3 Regulatory Setting

Federal, State and local regulations regarding water quality directly affect District policy regarding the level of service provided for wastewater collection. LACOSAN must comply with U.S. Environmental Protection Agency (EPA) regulations, as well as the requirements of California Water Code Section 13000 et seq., the Porter-Cologne Water Quality Control Act of 1969. This Act charges the State Water Resources Control Board with protecting the quality of all state waters for beneficial uses and enjoyment. In discharging this responsibility, the Central Valley Regional Water Quality Control Board has the authority to issue Waste Discharge Requirements in the region.

Because the District operates wastewater collection systems and treatment facilities, it is subject to Waste Discharge Requirements issued by the Central Valley Regional Water Quality Control Board and hazardous materials storage permits and Risk Management Plans required by the Lake County Department of Environmental Health.

The District also has Air Quality Permits issued by the Lake County Air Quality Management District. Temporary project-specific Streambed Alteration Permits are issued by the California State Department of Fish and Game. Temporary project-specific permits are issued by the U.S. Army Corps of Engineers.[11]

The District has received a Cleanup and Abatement Order and fines from the Regional Board. The most recent Notice of Violation was issued on March 7, 2010, primarily for spills in the Highlands Harbor/Meadowbrook Drive area of Clearlake.

On March 2, 2010, the Board of Directors of the Lake County Sanitation District adopted an Interim Ordinance No. 2918 establishing temporary restrictions upon connections to the Southeast Regional Wastewater System and on April 6, 2010, the District adopted Ordinance No. 2923, An Urgency Measure Adopting an Interim Ordinance Establishing Temporary Restrictions upon Connections to the Southeast Regional Wastewater System. The reasons for the Ordinance are that significant inflow problems have resulted in sewer spills, threatening public health and safety. The inflow problems may be caused by excessive rainfall and leaks in the system.[12]

The District is implementing several short term and long term actions to address this problem. A comprehensive smoke testing program was completed in early August 2010. Over 200,000 feet of gravity collection pipe was evaluated. A program to seal identified leaks is underway. The district is implementing a temporary pump station and pipeline project to prevent spills in the Highlands Harbor area. This will be in place prior to the winter of 2010.

The Collection System Master Plan prepared in 2009 identified a capital project to address the problem in a long term manner. It includes the expansion of an existing pump station (#4) and a 12-inch pipeline directly to the treatment plant. A proposed rate increase to capitalize this $5.5 million dollar project is currently before the ratepayers. If successful, this project will be constructed in 2011.

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[11] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, Ph: (707) 263-0119 F: (707) 263-3826, January 2008.

[12] Lake County Sanitation District, Ordinance No. 2923, An Urgency Measure Adopting an Interim Ordinance Establishing Temporary Restrictions upon Connections to the Southeast Regional Wastewater System April 6, 2010.

LACOSAN received a Cease and Desist (Order # R5-2003-0040) on the Northwest Regional Wastewater Treatment System on March 24, 2003 whereby the District's sewage collection system has historically experienced problems with inundation during periods of high groundwater or high Lake levels thereby causing a direct discharge of wastewater to Clear Lake.

Should spills occur in the collection or treatment system, the District is required to file a Spill Report with the Regional Board. District projects are also subject to the requirements of the California Environmental Quality Act (CEQA) and in some cases the National Environmental Policy Act (NEPA).

Below is a description of several problems that occurred in 2008:

> ***Sewage Spill, Lake County Sanitation District Southeast Regional Wastewater Treatment System, Lake County***
> *On 16 July 2008, the Lake County Sanitation District (Discharger) reported a raw sewage spill estimated at approximately 510 gallons. The spill occurred from an overflowing manhole located along Crawford Avenue and Old Highway 53 in Clearlake, and was contained to a dry creek bed. The spill resulted from a blockage in the sewer line and was caused by a combination of debris and grease within the sewer pipe downstream of the manhole. The Discharger is educating neighborhood residents located upstream of the sewer blockage on the proper handling and disposal of fats, oil, and grease. In addition, the Discharger is enforcing portions of the sewer use ordinance for the maintenance of the grease trap and installation of a backflow prevention device. On 13 August 2008, staff issued a Notice of Violation for the spill, requiring the Discharger to provide a written report showing that the grease traps and the backflow prevention device have been installed at the Elks Lodge, and that sewer maintenance is conducted on a routine basis. (GJC)*
>
> ***Sewage Spill, Lake County Sanitation District, Lake County***
> *On 15 September 2008, the Lake County Sanitation District (Discharger) reported a spill estimated at approximately 1,750 gallons from the Geyser Effluent Pipeline. The spill entered a dry stream bed located along a stretch of pipeline approximately 1,000 feet north of the Harris Creek Tank. Following the spill, the Discharger shut down the flow to the pipeline and replaced a section of the leaking pipe. The pipeline has since been put back into service. Regional Water Quality Control Board, Lake County Environmental Health Department (LCEHD), and the Office of Emergency Services were notified following the spill. Regional Water Board staff is evaluating appropriate enforcement action. (GJC)*
>
> ***Wastewater Spill, Lake County Sanitation District, Lake County***
> *On 1 October 2008, the Lake County Sanitation District reported a spill estimated at approximately 4,900 gallons from the Geyser Effluent Pipeline. The spill was located at Mackey Road and Robin Hill, north of the City of Lakeport. A leaking air release valve caused the spill. The spill was stopped by isolating and repairing the air release valve. The pipeline*

has since been put back into service. Central Valley Water Board, Lake County Environmental Health Department, and the Office of Emergency Services were notified following the spill. Central Valley Water Board staff is requesting an update on the pipeline maintenance plan. (GJC)

4.4 Inflow and Infiltration (I&I)

LACOSAN wastewater collection facilities are designed to carry the peak flows that would be expected to occur over the lifetime of the facilities. Unwanted water from Inflow and Infiltration (I&I) produces greater than desired flow volumes, resulting in excessive demand on the collection system, higher energy usage and less than optimum efficiency.

LACOSAN has implemented a series of source detection programs and rehabilitation methods to control Inflow and Infiltration. These programs and methods include an aggressive inspection and repair program for manholes, inspection and repair of gravity lines, smoke testing, and flow measurement. Source detection programs include seasonally locating, isolating, and repairing source defects during the early morning hours or during storm events.

Pipeline rehabilitation methods include slip-lining, grout sealing, replacement of segments or total pipeline replacement, manhole grouting, and manhole replacement. Pipe bursting with slip lining has been used in several projects. Persistent problems in the Northwest Regional Wastewater Treatment system due to excessive I&I have led to the issuance of a Cease and Desist Order as discussed above.

4.5 Northwest Regional Wastewater Treatment Plant

4.5.1 Northwest Regional Wastewater Treatment Plant Background

The Northwest Region Wastewater Treatment Plant is located approximately four miles north of the City of Lakeport and west of State Route 29.

History of Northwest Regional Wastewater Treatment Plant

The Northwest (NW) wastewater collection system serves the communities of North Lakeport, Upper Lake, Nice, Lucerne, Kono Tayee and Paradise Valley. Many portions of the collection system were constructed 25-30 years ago when inspections were not as comprehensive as they are today. Due to the age of the collection system, the close proximity to the lake, and seasonal high lake levels, Inflow and Infiltration (I&I) is common, and contributes a large percentage to winter flows.

The high seasonal flows force lift stations to operate for extended periods of time and almost continuously during multi-day storm events. During these same periods, the District frequently hires emergency pumper trucks and crews to avoid or minimize reportable spills in compliance with regulatory requirements. Treated wastewater is recycled at the Geysers steamfield for electricity production.

Status of Northwest Regional Wastewater Treatment Plant

Many areas within the collection system were originally constructed 30 years ago for much smaller communities and typically before substantial development occurred. Several sections of collection systems within several Nice/Lucerne hillside neighborhoods have been cut off from access for routine collection system maintenance and cleaning by development. Expansion and growth have also resulted in capacity challenges (both collection and pumping) in several key locations within the NW system. The 12-month averaged increase (2008) in the NW customer base is 1.3%. In March of 2003, The Regional Water Quality Control Board issued a Cease and Desist Order for the NW system. The Order covers six requirements which must be implemented over a ten-year period. The District is working diligently to fully comply with that Order while continuing to serve all customers.

Outlook for Northwest Regional Wastewater Treatment Plant

The District is moving forward with aggressive I&I mitigation and Hydraulic Modeling for evaluating structure and capacity within the NW collection system. The model evaluates storage capacity and flow within the main sections of the trunk line serving the collection system. The model can be expanded into additional locations within the service area for evaluating impacts associated with new development. According to the Master Plan (December 2005), the service area had a potential capacity for 7,379 connections. All projects greater in size than 3 Single Family Dwelling Equivalents (SFDs) are required to utilize the NW model. The model identifies the areas within the collection system where infrastructure improvements are necessary to accommodate the development and capacity mitigation and costs.

Customer Statistics and Infrastructure for Northwest Regional Wastewater Treatment Plant

The Northwest Regional Wastewater Collection and Treatment System currently includes the following:

- *4,670 Connections (5,984 Single Family Dwelling (SFD) equivalents including about 800 Residential Unit Equivalents (RUEs) from the City of Lakeport (added in 2001).*
- *Over fifteen hundred manholes and 90 miles of pipe within the gravity collection system.*
- *23 lift stations and over 15 miles of force main piping conveying wastewater to the NW Treatment Plant.*

The Northwest Regional Wastewater Treatment Plant includes aerated lagoons serving 5,984 single-family dwelling units (SFD)[13] with an average annual flow of 1.66 to 4.1

[13] Lake County Sanitation District, http://www.co.lake.ca.us/Government/Directory/Special_Districts/Wastewater_Systems/Northwest_Regional_Wastewater_System.htm.

mgd. The treatment plant has a design capacity of 8.5 mgd wet weather flow. SFD equivalent flow is approximately 210 gallons per day. In 2010, this plant served a population of approximately 9,937 people[14] with 23 pump stations situated around the northern end of Clear Lake and an 800 acre-foot effluent storage reservoir.

4.5.2 Northwest Regional Wastewater Treatment Plant service to Lakeport

The North Lakeport area was added to the Northwest Regional Wastewater System under a service contract with the City of Lakeport in 1977. The City pays Northwest Regional Wastewater System for the operation, maintenance, and future upkeep of the sewer service.

The City of Lakeport provides the remainder of wastewater treatment and disposal services to residents within the City Limits south of 16th Street. Treated effluent from the NWRWTP reservoir, once used for pasture irrigation, is now piped to the Geysers for injection into the steamfields.

4.5.3 Northwest Regional Wastewater Treatment Plant Requirements

This treatment facility is regulated by CVRWQCB Order No. 5-011-111 and Monitoring Program both issued on May 11, 2001. This order prescribes requirements for secondary treatment of 2.0 million gallons per day (mgd) of domestic wastewater with discharge to an 865-acre-foot effluent storage reservoir. From the reservoir, effluent may be recycled through spray irrigation as a backup disposal method, discharged to a constructed wetland; under normal operations discharges are primarily removed by an effluent pipeline for delivery to the Southeast Geysers Pipeline.

Revised Waste Discharge Requirements (WDRs) were issued by the CVRWQCB to facilitate improved wastewater collection, treatment, and for additional water conveyance and recycling process through the implementation of the Full Circle Project. Documented overflows from the effluent storage reservoir during periods of above-average rainfall exceeded effluent limitations for water quality A Cease and Desist order (Order # R5-2003-0040) was issued by the CVRWQCB on March 14, 2003. Discharges from the storage reservoir no longer occur.

4.5.4 Northwest Regional Wastewater Treatment Plant Collection System

Wastewater is transported through a series of sanitary sewer main pipelines within subdivision streets, secondary outfall pipelines (large diameter pipelines), major outfalls (large diameter pipelines), and force mains (pressure pipelines associated with pump stations). These outfall pipelines convey wastewater to the Northwest Regional Wastewater Treatment Plant.

The collection system primarily serves residential customers. Small businesses and restaurants comprise a small percentage of total wastewater flow. The Northwest Regional Wastewater Treatment Plant does not service any heavy industrial customers. The system includes 23 pump stations, 110 miles of collection pipe, and 2,000 manholes. These facilities convey wastewater to the NWRTP.

[14] Lake County Special Districts Administration, "Current Operations by Utility Area", 2010.

4.5.5 Northwest Regional Wastewater Treatment Plant Facility

The treatment process starts with the headworks, consisting of a bar screen, followed by three lagoon cells (Numbers 1, 2, and 3) completely mixed with surface aerators, two lagoon cells (Numbers 4 and 5) partially mixed with surface aerators, a chlorine contact pipeline, and the NWRWTP effluent reservoir.

The treatment facility of headworks, distribution boxes, lagoons weirs, and pipelines has a design peak hour flow (PHF) of 10.0 mgd. The limiting component for hydraulic capacity in the treatment system is the lagoons. Other design flows are 1.6 mgd average dry weather flow (ADWF), 5.6 mgd peak month flow (PMF) and 8.5 mgd peak day (or wet weather) flow (PDF).

The effluent from the NWRWTP effluent reservoir is conveyed to the Southeast Regional Wastewater Plant effluent reservoir where it combines with effluent from the SERWTP and the Clearlake Oaks WTP. The reservoir discharges to the Southeast Geysers Effluent Pipeline. This pipeline runs approximately 26 miles southwest of the SERWTP to convey effluent to injection wells in The Geysers steamfield.

4.5.6 Northwest Regional Wastewater Treatment Service Build-out

The Northwest Regional Wastewater Treatment Plant has a capacity of 9,534 connections, which is adequate to serve anticipated build-out of 9,031 connections. There were 4,670 connections on 2010.[15] The Northwest Regional Wastewater Treatment Plant serves six areas. The "Build-out Analysis" shows the following for these areas:

A. *Kono Tayee Wastewater Service*

The Kono Tayee Wastewater Service Area has 99 vacant acres with 148 vacant unserviced parcels. The zoning for this area would allow 249 future dwelling units with 543 future residents.[16] The total build-out connections for this area would be 377 compared with 126 existing connections.[17] August 2010 data shows 132 active residential connections, 1 commercial connection and 4 standby connections for a total of 132 connections serving 132 single-family dwelling equivalents.[18] In 2010 LACOSAN reported 132 connections serving a population of 277.[19]

[15] County Special Districts, 2010
[16] County Special Districts, "2010
[17] County Special Districts, 2010
[18] Lake County Special Districts Administration, "Current Operations by Utility Area 2010.
[19] Lake County Sanitation District, "Current Operations by Utility Area," 1/1/10.

B. Lucerne Wastewater Service

The Lucerne Wastewater Service Area has 87 vacant acres with 510 vacant unserviced parcels. The various zoning designations[20] for this area would allow 538 additional dwelling units with an additional population of 1,168.[21] The number of connections at total build-out would be 2,084 compared with 1,359 existing connections.[22] August 2010 data show that Lucerne has 1,823 active residential connections, 38 commercial connections, and 21 standby connections for 1,491 total connections serving 1,861 single-family dwelling equivalents.

C. Nice Wastewater Service

The Nice Area has 152 vacant acres zoned for development with 854 vacant unserviced parcels. This would allow 1,012 additional dwelling units and 2,228 additional residents. The number of connections at total build-out would be 2,344 compared to 1,203 existing connections.[23] August 2010 data show 1,671 active residential connections, 35 commercial connections, and 15 standby connections for a total of 1,671 connections or 1,706 single-family dwelling equivalents.[24]

D. North Lakeport Wastewater Service Area

The North Lakeport Wastewater Service area has 233 vacant acres zoned for development and 229 vacant parcels. This would allow 1,172 future dwelling units and 2,540 future residents. There would be 3,366 total wastewater connections at total build-out compared to 902 existing wastewater connections for this area.[25]

The area total shows 1,613 active residential equivalent connections, 23 commercial connections, and 23 standby connections for a total of 1,149 connections and 1,636 single-family dwelling equivalents in August 2010.[26]

E. Paradise Valley Wastewater Service Area

The Paradise Valley Wastewater Service Area is small compared to other service areas. This area has 7 vacant acres with 19 vacant parcels all zoned R-1 (Single-Family Residential). This zoning would allow 22 additional dwelling units and 43 additional residents. There is also a Planned Development (PD) area that would allow an additional 97 dwelling units with 189 residents. The number of connections at total build-out would be 109 compared to the existing 72 connections.[27]

F. Upper Lake Wastewater Service Area

The Upper Lake Wastewater Service Area has 23 vacant acres with 49 unserviced parcels. This would allow 105 additional dwelling units with and additional population of 270. The number of connections at total build-out would be 669 compared with 577

[20] The number of parcels allowed by zoning may be greater than the number that can actually be created by the parcel map or subdivision map process.
[21] County Special Districts, 2010
[22] County Special Districts, "2010
[23] County Special Districts, "2010
[24] Lake County Special Districts Administration, "Current Operations by Utility Area", August 6, 2010
[25] County Special Districts, 2010
[26] Lake County Special Districts Administration, "Current Operations by Utility Area", 2010
[27] County Special Districts, "Build-out Analysis of Lake County Water and Wastewater Systems" Prepared by Criterion Planners, www.crit.com, April 2006, p296-297.

existing connections in 2010, serving a population of 1,126.[28] August 2010 data show 556 active residential connections, 21 commercial connections, and 2 standby connections for a total of 461 connections and 577 single-family dwelling equivalents.[29]

4.6 Southeast Regional Treatment Plant

4.6.1 Southeast Regional Wastewater Treatment Plant Background

The Southeast Regional Treatment Plant is located approximately one mile north of the City of Clearlake. According to the Special Districts website[30] the following information is provided regarding the Southeast Regional Wastewater Treatment Plant:

History of Southeast Regional Wastewater Treatment Plant

> *The Southeast (SE) system collects and treats wastewater in the Clearlake area. The collection system extends from Pirates Cove to Lower Lake and includes the City of Clearlake. Portions of the collection system were constructed over 30 years ago when materials, construction techniques and inspections were not as advanced and comprehensive as they are today. Due to the proximity to the lake and seasonal high water table, a significant amount of groundwater intrusion occurs within the collection system during the winter. Seasonal high lake levels and winter rains also contribute to Inflow and Infiltration (I&I) which makes up a large percentage of winter flows. The increased flows in the winter requires the lift stations to operate more frequently, and almost continuously during multi-day storm events. During more intensive storm events, the District typically has to hire emergency pumper truck services to maintain collection system operations, and avoid or minimize reportable spill events. All treated wastewater is recycled at the Geysers.*

Customer Statistics and Infrastructure for Southeast Regional Wastewater Treatment Plant

> *The Southeast Regional Wastewater Collection and Treatment System currently includes the following:*
> - *6,707 service connections (8,471 Single Family Dwellings (SFDs) serving a population of 15,226 residents.*
> - *Over nineteen hundred manholes and over 90 miles of collection system piping within the collection system.*
> - *23 Lift Stations and over 10 miles of force main piping conveying wastewater flows to the SE Treatment Plant.*

[28]. Lake County Sanitation District, http://www.co.lake.ca.us/Government/Directory/Special_Districts/Wastewater_Systems/Northwest_Regional_Wastewater_System.htm.
[29] Lake County Special Districts Administration, "Current Operations by Utility Area", 10/18/2007
[30] Lake County Sanitation District, http://www.co.lake.ca.us/Government/Directory/Special_Districts/Wastewater_Systems/Northwest_Regional_Wastewater_System.htm

Status of Southeast Regional Wastewater Treatment Plant

> *Community growth is resulting in capacity challenges (both collection and pumping) in several key locations within the system. The 12-month averaged increase (2008) in the customer base in the SE service area is 2.4%, with the most construction occurring within the AD 1-6 area of the collection system, east of Highway 53. In February of 2005, the Regional Water Quality Control Board issued a Cleanup and Abatement Order for the SE system. On March 7, 2010 a Notice of Violation was issued primarily for spills in the Highlands Harbor/Meadowbrook areas. The District is working diligently to fully comply with that Order while continuing to serve all customers as previously discussed.*

Outlook for Southeast Regional Wastewater Treatment Plant

> *The District is moving forward with aggressive I&I mitigation and Hydraulic Modeling for evaluating structure and capacity within the SE collection system. The model evaluates storage capacity and flow within the main sections of the trunk line serving the collection system. The model can be expanded into additional locations within the service area for evaluating impacts associated with new development. According to the Master Plan December 2005, the service area has a potential capacity of 13,405 connections. All projects greater in size than 20 Single Family Dwelling Equivalents (SFDs) are required to utilize the SE model. The model identifies the areas within the collection system where infrastructure improvements are necessary.*

In April 2010, the LACOSAN Board of Directors approved a system capacity fee for the collection system. This brings the total fee for a new sewer connection to nearly $10,000 per SFD equivalent.

The SERWTP has aerated lagoons and serves 8,471 SFD equivalents with a 2010 population of 15,226.[31] The SERWTP has an average dry weather flow of 0.90 mgd and a monthly average wet weather flow of 2.30 mgd. SFD equivalent flow is 210 gallons per day. This treatment facility provides treatment for seven sewer billing areas including six in the City of Clearlake and one in Lower Lake. Average flow per connection within the SERWTP service area is 210 gpd per connection or 210 gpd per SFD equivalent.

4.6.2 Southeast Regional Wastewater Treatment Plant Requirements

The SERWTP is subject to RWQCB Board Order #96-166 including Waste Discharge Requirements and a Monitoring and Reporting Program issued on June 21, 1996. According to this order, the monthly average wet weather effluent flow shall not exceed 6.1 mgd and the plant's hydraulic capacity shall not exceed 8.5 mgd of secondary treated wastewater.

[31] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, January 2010, "Lake County Special Districts Administration Current Operations by Utility Area".

As of 1997, treated wastewater is transported to the Geysers for injection into the steamfield. Board Order #96-166 does not specify a requirement for ADWF. The AWWF effluent flow is required not to exceed a monthly average of 6.1 mgd and not exceed the plant hydraulic capacity of 8.5 mgd.

Multiple spills occurred between May and August 2003, in violation of Board Order # 96-166; a notice of violation was issued on August 21, 2003. LACOSAN was ordered to submit a Sanitary Sewer System Operation, Maintenance, Overflow Prevention, and Response Plan by November 1, 2003. That plan was completed. An enforcement action was taken by the Regional Water Quality Control Board regarding the Southeast Regional Collection system. Between 2002 and 2004, 26 spills occurred. As a result, sewage hauling has been required at a substantial cost to LACOSAN. The California Regional Water Quality Control Board Central Valley Region issued a Cleanup and Abatement Order No.R5-2005-0704 for the Lake County Sanitation District Southeast Regional Wastewater System on February 5, 2005. The problems were with the collection system for the Plant. LACOSAN has completed all of the required actions from this Order. However, on March 7, 2010 a Notice of Violation was issued for spills in the Highlands Harbor/Meadowlark area within the City of Clearlake. As a result of this spill, the district is in the process of implementing several short-term and long-term measures as previously discussed. The treatment plant has adequate capacity.[32]

4.6.3 Southeast Regional Wastewater Treatment Plant Collection System

Wastewater is transported through a series of sanitary sewer main pipelines within subdivision streets, secondary outfall pipelines (large diameter pipelines), major outfalls (large diameter pipelines), and force mains (pressure pipelines associated with pump stations).

The collection system includes 23 pump stations, 1,900 manholes and 90 miles of collection pipe. These outfall pipelines convey wastewater to the Southeast Regional outfall sewer pipeline, which leads to the Geysers injection area.

According to the Master Plan, "The Southeast Regional Wastewater Treatment Plant can hydraulically pass 7.8 mgd. This capacity compares to the permitted peak month flow of 6.1 mgd through the plant."

The collection system primarily serves residential customers. Small businesses and restaurants comprise a small percentage of total wastewater flow. The Southeast Regional System does not service any heavy industrial customers.

[32] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, Ph: (707) 263-0119 F: (707) 263-3826, January 2008.

4.6.4 Southeast Regional Wastewater Treatment Plant Facility

According to the Master Plan,

> *A conventional activated sludge plant was decommissioned in 1998 when a new treatment system was put into service. The SERWTP now consists of headworks with a mechanical bar screen and bypass channel. Two slide gates split flow to the north and south treatment lagoons. Each lagoon is divided by baffled curtains into one fully mixed cell and two partially mixed cells. Four surface aerators provide mixing in each cell.*
>
> *Pond effluent enters the chlorine contact channel through a rapid mix structure containing a mixer where sodium hypochlorite is injected for disinfection. The flow through the chlorine contact channel is controlled by an inlet weir and an outlet gate. From this point, the flow is channeled to the effluent reservoir.*[33]

4.6.5 Southeast Regional Wastewater Treatment Area Build-out

Based on the 2006 "Build-out Analysis," the Southeast Regional Wastewater Treatment Plant had 6,009 service connections and a total capacity of 13,405 service connections.

The City of Clearlake and the community of Lower Lake have 1,042 vacant acres divided into 6,201 vacant, unserviced parcels. This would allow 6,455 additional dwelling units with an estimated additional population of 15,686.[34] This shows the WTP has significant wastewater treatment capacity available to accommodate future growth in the City of Clearlake and Lower Lake area.

A. City of Clearlake

The Lake County Special Districts Administration divides Clearlake into six improvement districts. The January 1, 2010 total for Clearlake is 6,113 active residential connections, 159 commercial connections, and 171 standby connections for a total of 6,443 connections and 7,925 single-family dwelling equivalents.[35] The 2010 estimated population served is 14,334.[36]

B. Lower Lake

In October 2007 Lower Lake had 367 active residential connections, 15 commercial connections, 4 standby connections for a total of 386 connections and 628 single-family dwelling equivalents. The 2010 estimated population served is 892[37]

[33] Lake County Sanitation District, "Southeast Regional Wastewater Treatment Plant Master Plan, December 2005, CH2MHILL,2525 Airpark Drive, Redding, CA 96001.
[34] County Special Districts, "Build-out Analysis of Lake County Water and Wastewater Systems" Prepared by Criterion Planners, www.crit.com, April 2006, p.26.
[35] Lake County Special Districts Administration, 2010
[36] Lake County Sanitation District, "Current Operations by Utility Area," 1/1/10.
[37] Lake County Special Districts Administration, 2010

4.7 Middletown Wastewater Treatment Plant

4.7.1 Middletown Wastewater Treatment Plant Background

Middletown Wastewater Treatment Plant is the smallest wastewater treatment plant considered in this study according to the Special Districts website.[38]

History of Middletown Wastewater Treatment Plant

Based on the results of a 1987 study sponsored by the Lake County Environmental Health Department, the Board of Supervisors adopted a moratorium on new septic systems and Assessment District 2-2 (AD 2-2) was established for the purposes of constructing a wastewater collection and treatment facility. The Middletown wastewater collection and treatment facility was constructed and started serving the downtown and surrounding residential areas of Middletown in 1992. In 1999 metered wastewater metered service to Harbin Hot Springs was added to the system.

Customer Statistics and Infrastructure for Middletown Wastewater Treatment Plant

The Middletown Wastewater Collection and Treatment System currently includes:

- *733 Connections (699 Single Family Dwelling (SFD) equivalents). The system also accepts flow from the Harbin Hot Springs area.*
- *Over 225 manholes and over 10 miles of pipe within the gravity collection system.*
- *3 Lift Stations and over 3 miles of force main piping conveying wastewater flows to the Middletown Wastewater Treatment Plant.*

Status of Middletown Wastewater Treatment Plant

The Middletown facility was originally constructed 19 years ago for a much smaller community. Over the years, the number of customers has grown, and the treatment plant and facilities are currently operating near capacity. The 12-month averaged increase (2008) in the Middletown customer base is 3.1%. The Twin Pine Casino Expansion came into the collection system in 2008.

Outlook for Middletown Wastewater Treatment Plant

Expansion of the treatment capabilities are one of the focuses for the system. Construction of a chlorination facility, other "efficiency improvements," and treatment refinements are being looked at to safely accommodate flows into the system for the existing customer base and reasonable future growth. The Master Plan for the Treatment Plant was completed in September of 2005. A new facilities plan and project definition report will be completed in 2010. This will become the basis for system improvements. A capital project will be initiated and will require a rate increase and a system capacity fee increase.

[38] Lake County Sanitation District, 2010, www.co.lake.ca.us/Government/Directory/Special_Districts.htm

The District is moving forward toward the development of a Network Hydraulic Model for the area. The model will provide a tool to better evaluate structure, capacity and flows within the collection system. The model will identify the areas within the collection system where infrastructure improvements are necessary including:

1) Improvements to lift stations and force mains to safely convey additional flows, contribute to the capital improvement program (CIP) based on the development's percentage of use.

2) Improvements to collection system piping and manholes to safely accommodate flows, contribute to CIP based on the development's percentage of use.

3) Mitigate I&I to offset the additional flow impacts within key areas of the system.

The Middletown Wastewater Treatment Plant is a facultative pond facility with an ADWF of 0.12 mgd and AWWF of 0.37 mgd located approximately 2 miles northeast of the community of Middletown. This WTP serves 733 connections at 812 SFD equivalents with a population of 1,822.[39] Average flow per connection within the WTP service area is 210 gpd per connection or 210 gpd per SFD equivalent.

The Middletown Wastewater Service Area (AD2-2) does not coincide with the Middletown Planning Area as described in the Middletown Area Plan.

The Middletown Wastewater Service Area coincides more closely with the Middletown Community Area. The entire Middletown Planning Area (including Middletown Community Area) has experienced numerous problems with individual septic systems since Middletown became a Community Area.

The development of the Middletown Wastewater System by LACOSAN has helped to reduce the contamination of groundwater in this area but there still are numerous septic systems in the rural lands around the Middletown Community Area.

4.7.2 Middletown Wastewater Treatment Plant Requirements

The Middletown WTP is subject to the requirements contained in RWQCB Board Order 97-249 and monitoring and reporting program adopted on December 5, 1997. These requirements call for the treatment of 0.15 mgd average daily dry weather flow and a peak wet weather flow of approximately 0.5 mgd of domestic sewage from the community with treatment ponds.

Treated effluent is disposed of primarily through the Geysers effluent pipeline by injection into the Southeast Geysers steamfield. An existing spray irrigation system is available for effluent disposal by irrigating fodder crops on a backup basis.

The Middletown WTP is currently operating at approximately 85% of permitted capacity, assuming a monthly average of 0.15 mgd of wastewater treated. Based on the average flow per SFD equivalent, an additional 107 SFD equivalents could be permitted before the WWTP is at full permitted capacity.

[39] Lake County Sanitation District, 2010

According to the 2005 Master Plan, the service area has 204 non-connected single-family dwellings. Wastewater from an estimated 115 potential connections within the service area cannot be treated at the current permitted capacity. Improvement planning for phased treatment plant expansion has recently been initiated.[40] (This Master Plan is in the process of being updated).

4.7.3 Middletown Wastewater Treatment Plant Collection System

Wastewater is transported through a series of sanitary sewer main pipelines within the community of Middletown, secondary outfall pipelines (large diameter pipelines), major outfalls (large diameter pipelines), and force mains (pressure pipelines associated with pump stations).

The Collection system includes three pump stations, 224 manholes, and 19 miles of collection pipe.[41] These outfall pipelines convey wastewater to the Middletown WTP outfall to its facultative pond area to the reuse pipeline, which leads to the Geysers injection area.

The collection system primarily serves residential customers. Small businesses and restaurants comprise a small percentage of total wastewater flow. The Middletown WWTP does not service any heavy industrial customers.

4.7.4. Middletown Wastewater Treatment Plant Facility

According to the 2005 Master Plan, The Middletown Wastewater Treatment Plant consists of a facultative pond system consisting of a primary pond, three secondary ponds, a sodium hypochlorite feed system and contact basin, an effluent storage reservoir, an effluent pump station, and a spray irrigation system. The effluent is pumped through the effluent pump station and is disposed of through the conveyance and injection of the effluent into the Southeast Geysers Effluent Pipeline (SEGEP) for reuse of the effluent in steam generation at the Geysers geothermal steamfield. The existing spray irrigation system is used for effluent disposal by irrigating fodder crops only on an emergency basis. (This Master Plan is currently in the process of being updated)

4.7.4 Middletown Wastewater Service Area Build-out

According to the "Build-out Analysis" (prepared in 2006) the Middletown Wastewater Service Area has 446 connections. The capacity for wastewater treatment is 933 connections but at total build-out there could be 1,158 connections.[42] There are 110 vacant unserviced acres with 107 parcels. Notwithstanding zoning requirements and the potential for future land divisions, there could be 106 future dwelling units with a population of 274 in addition to those now served.[43]

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[40] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, 2010
[41] Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, 2010
[42] County Special Districts, "Build-out Analysis of Lake County Water and Wastewater Systems" Prepared by Criterion Planners, www.crit.com, April 2006, p.40-41
[43] County Special Districts, "Build-out Analysis of Lake County Water and Wastewater Systems" Prepared by Criterion Planners, www.crit.com, April 2006, p.40-41

In August 2010 there were 629 active residential connections, 34 commercial connections and 1 standby connection for a total of 733 connections or 811 single-family dwelling equivalents.[44]

Due to chronic wastewater pollution problems in the Anderson springs area; the County of Lake is in the process of preparing an Environmental Impact Report for a proposed Anderson Springs Wastewater Collection Project. Anderson Springs is located approximately 4.5 miles northwest of Middletown. The proposed Anderson Springs service area consists of approximately 0.75 square miles and serves a year-round population of 460 and a seasonal population of 1,100. This proposal would be to convey wastewater via a pipeline to the Middletown Wastewater Treatment Plant.

The recommended alternative for collection and conveyance of the wastewater from the Anderson Springs community would be through the use of a Septic Tank Effluent Pump (STEP) system. STEP systems are a hybrid of an on-site treatment and disposal system and a community gravity sewer. STEP systems continue to use on-site septic tanks to remove grit and solids and provide initial biological treatment for the wastewater. Rather than use on-site disposal of the septic tank effluent, however, each septic tank is fitted with a small horsepower effluent pump.

Septic tank effluent would be pumped through a 2-inch effluent lateral to 4-inch effluent mains, then to the Middletown Wastewater Treatment Plant.

4.8 Konocti Harbor Resort

Konocti Harbor Resort owns and operates its own wastewater treatment system for its 120 acre site. The resort can provide accommodations for up to 1,500 people. The facilities also include a 5,000-seat amphitheater and 1000-person concert hall. This facility is temporarily closed.

[44] Lake County Special Districts Administration, "Current Operations by Utility Area", August 2010

5 FINANCIAL REVIEW OF LACOSAN

Each year a preliminary budget for LACOSAN is prepared and submitted to the LACOSAN Board of Directors by the Lake County Special Districts Department. This budget is based on historical data and projected needs. The final budget is normally adopted around September 1st.

After budget approval by the Board of Directors, if there is any increase for health and safety reasons the Special District Department makes a request for the funds at a regular agenda. Small changes to the budget require approval of the County Administrator. The Lake County Auditor's office compiles budget data for Lake County Special Districts Administration which manages the LACOSAN.

Financing mechanisms are an area of concern when local governments finance large capital facilities and depend upon fees and (or) taxes for financing. Appendix B in part provides an enumeration of legislation and voters initiatives to modify the method by which public facilities may be financed. A potential issue of having major problems with an individual plant is that the willingness of the landowners to pay for the huge jump in cost may be exceeded. This has happened in other counties and resulted in the County taxpayer's or other ratepayers being forced to cover the cost. Unfortunately, there is not much LACOSAN can do about a voter initiative to lower wastewater treatment costs and fees except to have adequate reserves to cover major capital expenses.

In the event a Cease and Desist Order, the Order is placed on the entire system and in the event any fine is levied that fine will be charged to a specific system (for example, the Southeast Regional System) and is charged to that system under "operations and compliance." Likewise, if a spill occurs in the Northwest Regional System, for example, associated costs will be charged to that system under "operations and compliance."

5.1 Budgets

5.1.1 Budget Unit 8350

LACOSAN (Clearlake, Lower Lake, North Lakeport to Paradise Cove) 2010-2011 budget of $5,682,976 includes revenue estimates of $5,158,299 and carry-over of $524,677.[45] The prior year's budget (2009-10) was $6,471,196.00.

According to the 2010-2011 budget, "Significant appropriations include general system maintenance, utilities, and professional services." The 2010-2011 budget was decreased from $6,471,196 to $5,682,976 for Budget Unit 8350.[46]

[45] Lake County, 2010-2011 Budget
[46] Lake County, 2009-2010 and 2010-2011 Budget MISSING FOOTNOTE Numbers "67" and "68"

1.2. Budget Unit 8353 (Middletown)

Wastewater collection for the Middletown area has a 2010-2011 budget of $194,211 (including estimated revenue of $149,269 and carry-over of $40,142).[47] The 2010-2011 budget was decreased by $138,022 (from $332,233 in the prior year).[48]

According to the 2009-2010 budget, "Notable appropriations include maintenance of the collection system and equipment and utilities. [49]

Using the adopted 2010-2011 budget, LACOSAN's estimated operations budget is $5,877,187. Major expenses are salaries and wages, employee benefits, professional services, utilities, and general maintenance and equipment. Income generated comes from permit and hook-up fees, and interest. Administration for LACOSAN is in an Internal Service Fund for the Special District's Department along with several other dependent districts managed by the department.

The County performs many direct in-house services as well as indirect services billed through the County's A-87 process. The District's operational budget and revenues have decreased over the past few years due to weakening economic conditions (County of Lake, Final Budget 2010-2011).

LACOSAN has a CIP Reserves fund for capital projects. The District budgets for improvements as required in accordance with its approved facilities plans for its treatment and collection and outfall facilities. LACOSAN's main revenue sources are new connection fees, and monthly service fees; LACOSAN receives no share of the County's property tax revenues. Outstanding debts are through the State Revolving Loan Fund (SRF).

5.2 Sewer System Rates

5.2.1 Rate Classes

The Foresight Study Tables are found in Appendix A at the end of this report. The Foresight Consulting Study makes the following comments regarding the sewer customer classes:[50]

> *Sewer customer classifications are far more detailed than necessary and individual districts are unnecessarily dissimilar; we have recommended changes that bring those classifications more in line with industry standards and those of other communities in the region. The recommended customer classes are also more consistent with the cost-of-service principles embodied in this overall rate study.*

Figure 2-1 in the Study provides an example from the Southeast District's current 18 classes compared to the recommended 4 customer classes shown in Figure 2-2 of the study.

[47] Lake County, 2010-2011 Budget
[48] Lake County 2008-2009 Budget, p145.
[49] Lake County, 2007-2008 Budget, p123.
[50] Foresight Consulting, "Water and Sewer Rate Study Report", page 5, July 22, 2008.

As shown in Figure 2-1 of the study, the rate coding and the classifications are unique and functional. Unfortunately, they are quite different from district to district. This makes consistency in rate calculations, administration, customer service, and accounting practices more difficult and often confusing to customers and staff. Additionally, it is not clear how these classifications are applied to individual customers, but previously rates were based solely on flow and charged as a flat rate. Figure 2-2 of the study shows the recommended 4 customer classes. These would be applied to all sewer districts, thereby creating uniformity between the districts.

5.2.2 Sewer Service Rate Increases

The sewer rate cost-of-service methodology used by the Foresight Consulting Study is explained as follows:[51]

> *This rate study followed AWWA and industry standard cost-of-service methodology for sewer rates. This analysis essentially determines the revenue needed from rates and how those revenues should be recovered from customers.*
>
> *The revenue requirements are functionalized by wastewater loading parameters (flow, BOD and TSS) and divided by the total units of each to calculate the unit costs. Those unit costs are then allocated to each customer class based on their total flow, BOD and TSS, thereby determining the revenue requirements for each customer class.*
>
> *Non-residential customer rates for sewer customers are determined using the State guidelines for wastewater strength (i.e., flow, BOD and TSS) and determining the percentage of residential strength wastewater for each of these constituents. Using that percentage, the costs for each parameter (flow, BOD, TSS) are calculated for an equivalent dwelling unit (EDU) of flow. By totaling these three costs, the unit cost per EDU for each customer class is calculated. Each non-residential customer should then be charges a rate based on the number of EDU's of flow times that unit cost.*

A Foresight Study table shows projected rate increases[52] which are substantial. The Financial Plan shows that the rate increases will be larger in the first part of the five-year plan and by the end of the five-year plan (2013) the rate increases will be no higher than 14%. A comparison of the current and the new bi-monthly residential sewer rates is also shown in the Study.[53] Even though the percentage increase in the sewer rates sounds large the actual monetary amounts are not that high compared to other jurisdictions. In fact, the residential rates are lower than those many other northern California communities.

The Foresight Consulting Study explains these rate increases as follows:

[51] Foresight Consulting, "Water and Sewer Rate Study Report", page 15, July 22, 2008.
[52] Foresight Consulting, "Water and Sewer Rate Study Report", page 17, July 22, 2008
[53] Foresight Consulting, "Water and Sewer Rate Study Report", page 20, July 22, 2008

To a large extent, these rate increases reflect the need to begin funding new debt service payments and meeting the bond coverage requirements imposed by new revenue bonds.[54] Also, as mentioned above, the individual rates do not necessarily have the same percentage increases as the overall rate increases due to the cost-of-service and financial plan adjustments.

5.3 Sewer System Revenue Requirements

A table from the Foresight Consulting Study compares the sewer system budgets with the revenue requirements.[55] The study finds that the revenue requirements will increase substantially because the study recommends a bond to pay for improvements and the budgets will then include debt service which could exceed 15% of the budget in some years.

For each system, the revenue requirements exceed the budget. The total budget costs and needs mean little to the average home-owner. The typical rate-payer only wants to know what it will cost him. However, if the wastewater collection and treatment system is not operated correctly, the costs will be much higher. Therefore, it is important to provide adequate revenue to operate the systems in a timely manner.

The Foresight Study explains how these revenue requirements were determined as follows:[56]

The sewer district projections include the cost of new debt service to fund capital improvement costs. The sewer systems have a total debt service of $0.82 million in FY'09-10 but, due to the revenue requirements of $6.6 million, this is only 12.5% of annual revenue requirements.

These projections are Foresight's best estimate of the future revenue needed from sewer rates based on currently available information. In particular, they reflect the expected costs of the capital improvements to remedy existing deficiencies and fund regulatory-driven improvements. The District's staff and engineering consultants are the primary source of the capital cost estimates, while district budgets are the basis for operating costs.

A Foresight Study table summarizes the difference between current revenue, revenue requirements and the revenue generated by the new rates for sewer service.[57] According to the study, even with a substantial rate increase the revenue would not meet the revenue requirements.

[54] *Coverage requirements are a ratio of year-end reserve funds to the annual debt service imposed by bond covenants for the purpose of providing security to bond holders that the borrowing agencies will be able to make their annual debt service payments and repay the bond holders.*
[55] Foresight Consulting, "Water and Sewer Rate Study Report", page 8, July 22, 2008
[56] Foresight Consulting, "Water and Sewer Rate Study Report", page 9, July 22, 2008
[57] Foresight Consulting, "Water and Sewer Rate Study Report", page 10, July 22, 2008

The Foresight Consulting Study notes that:

> *First year rate increases range from 12% to 50% for sewer districts. Because of the factors and the multi-year outlook considered in the financial plan, the revenue from new rates will be different from the revenue requirements, but over the five-year planning period the rate increases and revenue they generate will meet the financial needs of the districts.*[58]

The Foresight Study shows the projected revenue from the recommend rate increases by sewer system in a table.[59] With the most connections, the Southeast System needs the largest revenue.

5.4 Sewer System Capital Costs

A summary of sewer system capital improvement costs is shown in the Foresight Study.[60] The Study divides the costs between rehabilitation and plant improvements for each system for each year. The Foresight Consulting Study explains the table as follows:[61]

> *The capital costs shown include sewer system master plan (SSMP) projects to correct collection system deficiencies, but by far the most significant costs are treatment-related improvements. The Special Districts Administration agrees with Foresight's recommendation that the best approach for funding capital improvements is to take out two long-term loans,*[62] *with each district paying its own share of the costs of the resulting annual debt service. This approach minimizes the issuance and financing costs of securing this funding and, more importantly, provides money upfront for necessary projects. Otherwise, rate increases would be prohibitively high or there would not be sufficient funding to do the necessary improvements.*

The Foresight Study includes two tables which summarize the financed CIP costs and the annual debt service payments. One table recommends that 100% of the sewer district capital projects are funded by new debt.[63] The second table shows that for the Southeast Plant the debt services costs could be over $2,000,000 in a five year period. The percent of new residential sewer rates used for Capital Improvement Costs is shown in a separate table.[64] For the Southeast Regional System 26% of the rate revenue would be used for capital improvement costs.

LACOSAN recently completed a Proposition 218 process in the Collection System in the Clearlake area whereby fees would be increased to capitalize a proposed $5.4 million

[58] Foresight Consulting, "Water and Sewer Rate Study Report", page 10, July 22, 2008
[59] Foresight Consulting, "Water and Sewer Rate Study Report", page 17, July 22, 2008
[60] Foresight Consulting, "Water and Sewer Rate Study Report", page 11, July 22, 2008
[61] Foresight Consulting, "Water and Sewer Rate Study Report", page 11, July 22, 2008
[62] *This funding will most likely be in the form of revenue bonds. Based on discussions with Northcross, Hill & Ach, Financial Advisors, we have assumed one issuance for water and one for sewer districts. A 30-year repayment period and a 5.5% interest rate were used in calculating estimated annual debt service payments.*
[63] Foresight Consulting, "Water and Sewer Rate Study Report", page 12, July 22, 2008
[64] Foresight Consulting, "Water and Sewer Rate Study Report", page 18, July 22, 2008

project to solve a chronic infill and infiltration problem. This includes a 40% increase and implements approximately one half of the Capital Improvements Plan for the Southeast system. The recommended increase by the Foresight Study would have required a doubling of rates.

5.5 Sewer System Capacity Fees

5.5.1 System Capacity Fees Introduction

The Foresight Consulting Study explains the Capacity Fees as follows:[65]

> *Capacity fees[66] are typically calculated with the intent of removing any financial benefit new customers might receive when they connect to the sewer services. That is, they should be required to "buy-in" to their fair share of capital facilities paid for by previous customers, as well as pay for any new facilities required to serve them, which are referred to as "incremental" costs. Once they are on equal footing from a financial perspective, all customers (new and existing) should then pay the same service charges.*
>
> *The current sewer "cap fees" or system capacity fees (SCFs) managed by the Special Districts Administration were set based on fees published in annual state-wide survey reports prepared by the State Water Resources Control Board and the Black & Veatch Corporation. These data were also compared to fees charged within other jurisdictions in the County and rural areas of northern California.*

5.5.2 System Capacity Fees Calculation

The Foresight Consulting Study explains the determination of capacity fees as follows:[67]

> *Calculating system capacity fees includes evaluating both the buy-in and incremental capital facilities for each district. The buy-in related assets would include all existing assets with remaining useful life from an accounting standpoint; that is, those not fully depreciated. The incremental portion of the fee includes all planned capital improvements, especially those specifically required to serve new development.*
>
> *The amount of remaining capacity in the water and sewer systems of each district is generally the total capacity in equivalent dwelling units (or EDU's) minus the amount of capacity currently used by existing customers. System capacity fees are then calculated by dividing the value of the existing and planned capital assets allocated to future customers (or "growth") by the total capacity available to new customers.*
>
> *The value of outstanding principal on debt and grant-funded facilities must be excluded from the SCF calculations as explained below:*

[65] Foresight Consulting, "Water and Sewer Rate Study Report", page 21, July 22, 2008
[66] *The Special Districts Administration and water/sewer systems use the term "cap fees" when discussing what are more accurately call "system capacity fees". This fee should be distinguished from "connection fees" that refer to the costs of installing a service connection, also referred to as "hook-up fees."*
[67] Foresight Consulting, "Water and Sewer Rate Study Report", page 22, July 22, 2008

Outstanding Principal on Debt – Including outstanding principal would likely result in double-charging new customers if this cost was included in the SCF and then also included as debt service payments in the service charges.[68]

Grant Funds – Including grant-funded facilities is not appropriate since grant funds were essentially free to the district; in other words, SCF's cannot include costs the district did not incur to serve future customers.

5.5.3 System Capacity Fees Summary

The Sewer System Capacity Fees developed by Foresight Consulting show that the fee for the Southeast area could be lowered[69] but the fees adopted by the Lake County Board of Supervisors acting as the Board of Directors for the Lake County Sanitation District in Ordinance No. 2924 were increased due to problems with the system. In April 2010 the LACOSAN Board of Directors approved a system Capacity Fee for the Southeast Collection system. The total fee for a new sewer connection in the Southeast area is nearly $10,000 per SFD equivalent.[70]

5.6 LACOSAN Area Financial Background

5.6.1 Northwest Regional Sewer System

The table prepared by Foresight Consulting summarizes budget projects for the Northwest Regional Sewer System along with the net revenue requirements, which must be funded through rates each year in order to achieve a balanced budget. (As a result of the financial plan, actual rate revenue in any year may be less than net revenue requirements for that year.)[71]

Two tables, prepared by Foresight Consulting, summarize the financial plan and project rate increases for the Northwest Regional Sewer System. (The rate increases shown are the percent increase in current rate revenue, not individual rates, which are determined through the cost-of-service rate analysis.)[72] The rate increases are of greater interest to the individual rate payer.

Financial plans take a longer-term perspective in selecting rate increases, and attempt to smooth out the increases, meet necessary reserve fund levels, and satisfy the coverage ratio requirements of new debt issued. The figure prepared by Foresight Consulting shows that the total year-end fund balance for the Northwest Regional Sewer System[73] would decrease only slightly with rate increases but would decrease substantially (by over two million dollars) with no rate increases.

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[68] *However, including outstanding principal is acceptable if repayment is clearly from future SCF revenues.*
[69] Foresight Consulting, "Water and Sewer Rate Study Report", page 23, July 22, 2008
[70] Lake County Sanitation District, Ordinance 2924 An Ordinance Amending Section 706B of The Sewer Use Ordinance Pertaining to Inflationary Adjustment Determined by the Engineering News Record-Construction Cost Index, April 13, 2010.
[71] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 51, July 22, 2008
[72] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", pages 51 and 52, July 22, 2008
[73] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 52, July 22, 2008

The table prepared by Foresight Consulting summarizes the cost allocation process whereby revenue requirements are allocated to functional categories, and totaled as the costs allocated to both fixed and variable costs.[74] This is a technical division of costs which is of interest to the Special Districts Administration but of less importance to the average rate payer.

A table, prepared by Foresight Consulting, shows the calculation of unit costs for the function categories, including treatment parameters (flow, BOD, TSS). These unit costs are applied to each customer class in order to determine equitable rates.[75] The treatment parameters have the greatest costs.

The tables prepared by Foresight Consulting show how these unit costs are applied to each customer class, resulting in the total revenue requirement for each customer class. Non-residential customer rates for sewer customers are determined using the State Guidelines for wastewater strength (i.e., flow BOD and TSS) and determining the percentage of residential strength wastewater for each of these constituents. Using that percentage, the costs for each parameter (flow, BOD, TSS) are calculated for an equivalent dwelling unit (EDU) of flow. By totaling these three costs, the fixed rate per EDU for each customer class is calculated. Each non-residential customer should then be charged a rate based on the number of EDUs of flow times that fixed rate.[76]

Septage is the partially treated waste stored in a septic tank**.** It generally consists of all the household wastes that are disposed of through a home's plumbing system that do not drain out into the soil or are converted to gases by the special bacteria in the septic tank. Because of the higher treatment costs, septage waste charges should be based on the quantity of waste, such as per 1,000 gallons and should assume the septage is delivered to the treatment plant by a pumper truck. (An informal survey of septage charges revealed a wide range of charges by the disposal site, with charges ranging from less than $10.00 per 1,000 gallons to over $380 per 1,000 gallons. For example, El Dorado County charges $300 per pump for septage disposal.)

This makes it difficult to apply these charges to septage dumping stations, such as RV parks or campgrounds, which usually don't track numbers of customers or the quantity of waste. (It is also difficult for the Special Districts Administration to track and monitor campgrounds or RV parks that may offer septage dumping services. This is an area where future field verification and further analysis of septage customers may be helpful. The minimum bi-monthly charge of $25.96 shown in the table is a minimum charge that only includes one 1,000 gallon discharge to the wastewater treatment plant. Additional discharges would be billed at the volume rate shown in the table.[77]

Additional figures compare the current and the new residential monthly bills and show the projected rates for the Northwest Area System for 2008-09 through 2012-13.[78]

5.6.2 Southeast Regional Sewer System

[74] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 53, July 22, 2008
[75] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 53, July 22, 2008
[76] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 53, July 22, 2008
[77] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 58, July 22, 2008
[78] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 58, July 22, 2008

Foresight Consulting summarize budget projections for the Southeast Regional Sewer System along with the net revenue requirements, which must be funded through rates each year in order to achieve a balanced budget.[79] The proposed budgets allow 22% for collection, 30.7% for treatment, 20.4% for disposal, and 20.9% for administration.

Additional tables summarize the financial plan and the projected rate increases for the Southeast Regional Sewer System.[80] The required annual increases range from 3% increase to 7.6% increase. The Sewer Reserve funds are divided into the Operations Fund (Cash), Capital Improvement Fund (CIP), and the Repair and Replacement Fund (R&R).

Financial plans take a longer-term perspective in selecting rate increases, and attempt to smooth out the increases, meet necessary reserve fund levels, and satisfy the coverage ration requirements of new debt issued. The figure showing the total year-end fund balance for the Southeast Regional System[81] shows that with the rate increases the balances would decline but at a much slower rate than if there were no rate increases.

A Foresight Consulting table summarizes the cost allocation process whereby revenue requirements are allocated to functional categories such as collection, treatment, disposal, and administration, and then totals the costs allocated to fixed and variable expenses.[82]

An additional table shows the calculation of unit costs for the function categories, including treatment parameters (flow, BOD and TSS). These unit costs are applied to each customer class in order to determine equitable rates.[83] The purpose of these tables is to determine fair rates for industrial and commercial customers that may have unique wastewater flows. Two larger tables show how these unit costs are applied to each customer class, resulting in the total revenue requirement for each customer class.[84]

Non-residential customer rates for sewer customers are determined using the State Guidelines for wastewater strength (i.e., flow BOD and TSS) and determining the percentage of residential strength wastewater for each of these constituents. Using that percentage, the costs for each parameter (flow, BOD, TSS) are calculated for an equivalent dwelling unit (EDU) of flow. By totaling these three costs, the fixed rate per EDU for each customer class is calculated. Each non-residential customer should then be charged a rate based on the number of EDUs of flow times that fixed rate.

Septage is the partially treated waste stored in a septic tank**.** It generally consists of all the household wastes that are disposed of through a home's plumbing system that do not drain out into the soil or are converted to gases by the special bacteria in the septic tank. Because of the higher treatment costs, septage waste charges should be based on the quantity of waste, such as per 1,000 gallons and should assume the septage is delivered to the treatment plan by a pumper truck. (An informal survey of septage

[79] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 42, July 22, 2008
[80] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 42, July 22, 2008
[81] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 43, July 22, 2008
[82] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 44, July 22, 2008
[83] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 44, July 22, 2008
[84] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 44, July 22, 2008

charges revealed a wide range of charges by the disposal site, with charges ranging from less than $10.00 per 1,000 gallons to over $380 per 1,000 gallons. For example, El Dorado County charges $300 per pump for septage disposal.)

This makes it difficult to apply these charges to septage dumping stations, such as RV parks or campgrounds, which usually don't track numbers of customers or the quantity of waste. (It is also difficult for the Special Districts Administration to track and monitor campgrounds or RV parks that may offer septage dumping services. This is an area where future field verification and further analysis of septage customers may be helpful. The bi-monthly charge of $33.41 shown in the table is a minimum charge that only includes one 1,000 gallon discharge to the wastewater treatment plant. Additional discharges would be billed at the volume rate of $29.95 per 1,000 gallons shown in the table.[85]

A separate figure compares the current and new residential monthly bills, and a table that shows the projected rates for the Southeast System for 2008-09 through 2012-13.[86] The current revenue falls far short of the costs.

5.6.3 Middletown Regional Sewer System

A table prepared by Foresight Consulting summarizes budget projections for the Middletown Sanitation District along with the net revenue requirements, which must be funded through rates each year in order to achieve a balanced budget.[87] The Budget is expected to decrease initially and then increase each year to a total of $368,595 in 2012-2013.

Two additional tables prepared by Foresight Consulting summarize the financial plan and the project rate increases for the Middletown Sanitation District.[88] The tables show that there is no way that the Middletown Sanitation District can meet the revenue requirements with the current revenues.

Financial plans take a longer-term perspective in selecting rate increases, and attempt to smooth out the increases, meet necessary reserve fund levels, and satisfy the coverage ratio requirements of new debt issued. A figure prepared by Foresight Consulting shows the total year-end fund balance for the Middletown Sanitation District.[89] The fund balance would be severely in debt without the rate increases.

A table prepared by Foresight Consulting summarizes the cost allocation process whereby revenue requirements are allocated to functional categories, and then totals the costs allocated to fixed and variable expenses for the Middletown Sanitation District.[90] Collection is the most expensive part of the cost, followed by treatment, administration, and disposal.
A table prepared by Foresight Consulting shows the calculation of unit costs for the function categories, including treatment parameters (flow, BOD and TSS). These unit

[85] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 49, July 22, 2008
[86] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 49, July 22, 2008
[87] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 73, July 22, 2008
[88] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 73, July 22, 2008
[89] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 74, July 22, 2008
[90] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 75, July 22, 2008

costs are applied to each customer class in order to determine equitable rates for the Middletown Sanitation District.[91] This is particularly important for determining the rates for commercial and industrial users. Larger tables prepared by Foresight Consulting show how these unit costs are applied to each customer class, resulting in the total revenue requirement for each customer class.[92] Businesses are listed by type with the appropriate fee for each.

A figure prepared by Foresight Consulting compares the current and new residential monthly bills, and a larger table shows the projected rates for the Middletown District for 2008-09 through 2012-13.[93] The fees did not cover the costs at the time of the Study. The final table prepared by Foresight Consulting is a summary of the recommended sewer rates for the Middletown Regional System.

[91] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 75, July 22, 2008
[92] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 75, July 22, 2008
[93] Foresight Consulting, "Water and Sewer Rate Study Report Appendix ", page 80, July 22, 2008

6 POPULATION AND CONSISTENCY WITH ADOPTED PLANS

6.1 Lake County Population

Permanent population in Lake County in 2010 was 64,053.[94] The number of housing units in 2005 was estimated to be 34,645.[95] Population characteristics throughout the study area (Lake County) are substantially affected by seasonal variations, distinct user groups and the abundance of second homes. According to the 2000 census there are 8,884 unoccupied units representing a 26.30% vacancy rate, which is consistent with 2010 figures from the State Department of Finance showing a vacancy rate of 26.32%.

In order to plan for peak demand periods, part-time residents must to be factored into population projections. The seasonal day user also creates a significant portion of peak demand on urban services, including wastewater collection and treatment.

Assuming the same number of persons per household (2.387) for seasonal as well as year-around units, a total additional population of 20,418 persons could potentially reside in Lake County on a seasonal basis. This figure does not include population increases resulting from the hotel or resort industry.

Therefore, a seasonal population in Lake County could be as much as 78,727 especially in light of the fact the Census is conducted on April 1st, which is not considered the peak season in Lake County. Population projections for wastewater system design may come from County and City General Plans; however it is not uncommon for Facility Master Plans to be based upon unique assumptions. Based on the assumptions and according to the State Department of Finance (Interim Population Projections, Report P1, June 2001), Lake County is forecast to have over a 50% increase in population during the period 2000-2020.

California Department of Finance Population Projections for Lake County with and without occupancy of seasonal units

Year	2000	2005	2010	2015	2020
Lake County	**59,100**	**69,200**	**77,620**	**84,400**	**93,000**
Lake County Peak	**79,518**	**89,618**	**98,038**	**104,818**	**113,418**
(Assumes that the existing number of vacant units will be seasonally occupied.)					

Source: California Department of Finance, 2001.

To illustrate the effect part-time residents have on the study area, projections are provided for the County with and without inclusion of part-time residents. With inclusion of part-time residents, population and commensurate demand on wastewater collection, treatment and disposal infrastructure increases approximately 26% above the figures used by the State Department of Finance.

Using the State Department of Finance figures without accounting for vacant units, population projections for Lake County would reflect an annual +2.76% change in population between the years 2000 and 2010 and an annual +1.83% change in

[94] www.fedstats.gov/
[95] www.fedstats.gov/

population between the years 2010 and 2020. Assuming this amount is realized, the population of Lake County will increase by 31.3% between 2000 and 2010 and by another 19.8% between 2010 and 2020. It should be taken into account that areas of the County are growing at different rates.

6.2 Consistency with Adopted Plans

Land use and future development in the Municipal Service Review study area is governed by several adopted plans: the Lake County General Plan, the City of Clearlake General Plan, and the City of Lakeport General Plan. Relevant policies and land use designations for each plan are summarized below.

6.2.1 Lake County General Plan

A. Lake County General Plan-Services

The Lake County General Plan 2008 includes the following Goal and Policies regarding Wastewater:[96]

Goal PFS-3: To ensure the provision of adequate wastewater collection and treatment within the County.

Policy PFS-3.1: Adequate On-site Disposal Standards
The County shall develop, periodically review, and enforce adequate standards for septic tanks to protect water quality and public health. Use of individual septic systems shall be discouraged for larger residential and commercial developments and also for smaller developments where a public wastewater treatment facility is reasonable available. Larger developments should only occur where public wastewater treatment facilities with adequate capacity are available to serve the development.

Policy PFS-3.2: Maintenance of Septic Systems
The County should promote and support programs to educate homeowners on the care and maintenance of septic systems.

Policy PFS-3.3: Alternative Rural Wastewater Systems
The County should investigate alternative rural wastewater systems before investing in a costly conventional sewage system. For individual homes, such systems include elevated leach fields, sand filtration systems, evapotranspiration beds, osmosis units and holding tanks. In addition, composting toilets should be considered by the County for some situations, if determined to be appropriate and found not to pose a health risk. For clusters of homes, alternative systems include communal septic tank/leach field systems, package treatment plants, lagoon systems, and land treatment.

Policy PFS-3.4: Developer Requirements
The County shall require that developers meet all County wastewater requirements for adequate collection, treatment, and disposal prior to breaking ground for construction.

[96] Lake County General Plan 2008, page 5-5 to 5-6.

Policy PFS3.5: Water Conservation
The County shall minimize wastewater flows through water conservation efforts. Consideration should be given to allow use of gray water for landscape irrigation.

Policy PFS-3.6: Sanitary Sewer Connections
The County will promote the development of sewer systems and connection of land uses to sanitary sewer systems where (a) failing septic tanks, leachfield, and package systems constitute a threat to water quality and public health that cannot be remedied otherwise; or (b) future development will exceed acceptable standard for septic tanks (such as density or flow of effluent into the groundwater).

Policy PFS-3.7: Reduce Density/Intensity near Sewer Plants
The County shall reduce the potential for future land use conflicts near sewer treatment facilities by minimizing development potential on surrounding parcels through zoning and land use designations that limit residential density and/or commercial intensity. Proposals for land division adjacent to sewer treatment facilities should not be approved unless large parcels can be provided with adequate, on-site buffers.

B. Lake County General Plan-Communities

The General Plan calls for more detailed plans to be prepared for the County's unincorporated communities. These plans take the form of area plans, which can then be adopted as part of the General Plan.

Within community regions the interrelationship of land use and circulation and target areas for housing rehabilitation or preservation are encouraged. Community areas are to be used to promote compact growth where development can be served most efficiently and effectively with necessary urban services and facilities.

Community areas are defined by Community Boundaries generally based upon the following criteria:

- Existing development patterns reflecting higher intensity and density of use and need to provide land area to accommodate a balanced pattern of development in the County;

- Existing and potential service areas for major services such as public sewer and water;

- Location of major topographic patterns and features;

- Major transportation corridors and travel patterns;

- Ability to provide and maintain appropriate transitions at Community Boundaries.

The levels of service and provision of public facilities in community areas is to be based upon improving the capacity of public facilities to serve higher levels of development directed to defined communities.

The levels of service and provision of public facilities in rural areas is to be based on limiting the amount of development to ensure that adequate facilities are available. Planning for future public facilities and services in community areas assumes public wastewater collection and treatment systems, while rural regions may rely on public or private on-site wastewater collection and treatment systems.

The land use pattern reflected on the Lake County General Plan Land Use Map is correlated with the future provision of public facilities to ensure adequate service of land uses, based upon the service criteria and levels of service for the identified areas.

All General Plan amendments must show that the public facilities and services necessary to serve the proposed development are also correlated with the future provision of facilities and services according to the same criteria.

To enable public services to be provided with the greatest degree of efficiency and cost-effectiveness, development within community areas is encouraged to be at the maximum density under the respective land use designations shown on the General Plan Land Use maps, consistent with environmental, infrastructure, and other site constraints.

6.2.2 City of Clearlake General Plan

The City of Clearlake General Plan was adopted in 1983 and amended several times. The most significant amendment in relation to this wastewater service review was in 1988 when the City added goals, objectives, policies, and implementation measures on a variety of items including "Solid and Liquid Waste Disposal Facilities." When the City was incorporated, much of its territory was not served by a wastewater collection and treatment system.

A. City of Clearlake-Population

According to Federal 2000 Census data, Clearlake is well below Lake County averages for median household, family, and per capita income levels. Current Federal Census information indicates that there are 13,142 people residing in the City of Clearlake with a total of 5,532 households.

Median income for Clearlake households is approximately $19,863 (less than the County average at $29,627) with family income a bit higher at $25,504 (less than the County average of $35,818). Per capita income for the city is $12,538 (lower than the County average at $16,825), which means approximately 28.6% of the population of Clearlake is below the poverty line (higher than the County average at 17.6%).

The City of Clearlake Parks Master Plan has projected that the population of the City will be 17,216 by the year 2010. Much of the City's growth can be attributed to lake-generated recreation and tourism.

B. City of Clearlake-Services

The original City of Clearlake General Plan contained Policy 2.09 that said: "All new commercial and industrial development should be connected to sewers or meet City standards for septic systems. All new multi-unit residential development and single-family residential subdivisions on lots less than 12,000 square feet should be connected to sewers."

This City of Clearlake General Plan contained language that promoted improvement of the water quality of Clear Lake by monitoring pollution generated by a variety of sources including septic systems. In 1988, the City adopted Resolution 88-51 that repealed original Policy 2.09 and added the following new policies regarding sewers and septic systems respectively:

> *The city shall continue to support the expansion of the sanitary sewer system within the City and to require the connection of new development to the system when such service is within a reasonable distance, except as otherwise permitted by other adopted regulations and policies of the Lake County Environmental Health Department and Lake County Special Districts. All new multi-unit residential development and single-family residential subdivisions on lots of less than 15,000 square feet shall be connected to sewers.*
>
> *The city shall continue to cooperate with the County to ensure that on-site sewage disposal facilities are regulated, designed and maintained so as to protect the public's health and safety.*

6.2.3 City of Lakeport General Plan

The City of Lakeport was incorporated as a General Law City in 1888. The most recent General Plan was prepared in 2008[97] and approved by City Council March 2009.

A. City of Lakeport-Population

The following table from the City of Lakeport General Plan 2025 shows the projected population growth for the City:[98]

Population and Household Projections, 2000 to 2025* – City of Lakeport

	2000*	2005*	2010*	2015*	2020*	2025*
Total Population*	4,820	5,150	5,521	5,935	6,380	6,859
Households*	1,967	2,148	2,339	2,515	2,703	2,906
Average Household Size	2.36	2.36	2.36	2.36	2.36	2.36

* DOF Lake County growth rates used for the City of Lakeport through 2025.
**Assumes 2000 Lakeport avg. household size of 2.36 remains constant.
Source: 2000 U.S. Census, Department of Finance.

For the three-year period 2000-2002, 26 new residential building permits were issued in the City; in 1990-1992 a total of 630 were issued. Most of the building permit activity during 2000-2002 involved miscellaneous residential and commercial permits not involving new construction.

[97] City of Lakeport, General Plan 2025.
[98] City of Lakeport, General Plan Update 2025, Urban Boundary Element, Page III-4.

Municipal services in the City are affected by an influx of visitors seeking recreation opportunities, especially in the summer. This is an annual occurrence, and is taken into account by the City in its planning activities.

B. City of Lakeport-Sphere of Influence

Regarding annexations and Lakeport's Sphere of Influence, the General Plan 2025 includes an Urban Boundary Element to provide guidance related to future annexation of land from the City's Sphere of Influence. The Plan includes the following Annexation Priorities:[99]

> *The City should pursue annexations based on the following priority system:*
> *1. Commercial and industrial land along South Main Street and Soda Bay Road.*
> *2. Land designated as Specific Plan Area*
> *3. Land within the southern, southwestern and western Sphere of Influence.*

The area north of the new Sphere of Influence line is already part of a joint City/County sewer district served by LACOSAN, thereby reducing the need to annex to Lakeport in order to obtain municipal services.

Although the County has jurisdiction over the unincorporated areas within the City's Sphere of Influence, the policies and land use designations established by the City's General Plan for this area become effective at the time a request for annexation to the City is made. Close coordination between City and county planning policies is required to promote harmonious annexation and development of this area.

6.2.4 Master Plans

Each of the wastewater treatment plant master plans has individual population estimates and analysis of different growth scenarios. The analysis is used to make recommendations for improvements to the treatment plants. The master plans agree that Lake County will continue to experience a significant amount of population growth and that most of the growth will be permanent residents rather than seasonal residents.

[99] City of Lakeport, General Plan 2025, Page III-5.

7 WASTEWATER TREATMENT MUNICIPAL SERVICE REVIEW

The Cortese-Knox-Hertzberg Act as amended identifies five factors to be addressed in a Municipal Service Review. For each factor, information is gathered and analyzed, with determinations prepared for LAFCO's consideration. Lake LAFCO is responsible for determining that an agency is reasonably capable of providing needed resources and basic infrastructure to serve areas within its boundaries and later in the Sphere of Influence. It is important that such determinations of infrastructure availability occur when revisions to a Sphere of Influence and annexations occur.

In this Municipal Service Review, LAFCO will do the following:

1) Evaluate the present and long-term infrastructure demands and resources available to LACOSAN.

2) Analyze whether resources and services are or will be available at needed levels.

3) Determine whether orderly maintenance and expansion of such resources and services are planned to occur in line with increasing demands.

7.1 Growth and Population Projections

Purpose: To evaluate service needs based on existing and anticipated growth patterns and population projections.

7.1.1 Lake County Growth and Population

Permanent population in Lake County (as estimated by the California Department of Finance) was 64,053 on July 1, 2010. There were 34,645 housing units in Lake County on July 1, 2010 with a vacancy rate of 26.32% according to the State Department of Finance City/County Population and Housing Estimates.

7.1.2 MSR Determinations on Growth and Population for LACOSAN

1-1) The LACOSAN service areas were experiencing a high growth rate until the economic downturn. Between 2009 and 2010 the population remained the same with no growth, compared to previous years where the Lake County Population growth rate was among the highest in California.

1-2) Growth projections in Lake County project a 2020 population of 77,912. The continuation of the economic downturn will lower state population estimates since those estimates are based on pre-recession data.

1-3) The Southeast Regional Wastewater System and the Northwest Regional Wastewater System will be upgraded to reflect the Master Plans and growth trends beyond 2020.

1-4) A new facilities plan for the Middletown Wastewater Treatment Plant (MWTP) (operating at 85% of capacity) was completed in August 2010, and will be the basis for improvements. It is expected that rate increases will be needed and connections from Anderson Springs will contribute to wastewater flows at the MWTP.

7.2 Capacity and Infrastructure

Purpose: To evaluate the infrastructure needs and deficiencies in terms of supply, capacity, condition of facilities and service quality.

7.2.1 Infrastructure Background

As described in the preceding sections, the wastewater treatment and collection service provider in the Municipal Service Review study area is the Lake County Sanitation District (LACOSAN). The Hidden Valley Lakes CSD (HVLCSD), Clearlake Oaks County Water District, and Kelseyville County Waterworks District #3 sewer services (the latter of which is currently being upgraded) are reviewed in separate reports.

The City of Lakeport Municipal Sewer District (CLMSD) provides wastewater collection and treatment service within the Lakeport City Limits. Some parcels north of the City limits have flow to the Lake County Sanitation District (LACOSAN) system, and some parcels in the LACOSAN service area south of town are accepted in the City's system. These flows come from the Land's End/Holiday Cove area and portions of the Big Valley Rancheria on Rancheria Drive that are served by Sewer Assessment District 9-1.

City of Lakeport wastewater flows from 16th Street to the northern City Limits are received and treated at the Northwest Regional Wastewater Treatment Plant (NRWTP). The NRWTP has resolved one Cease and Desist Order (CDO) from the RWQCB relating to storage capacity. A second CDO is in effect which addresses improvement needs in the collection system but does not contain a restriction on new service connections.

As the lead agency, Lake County's planning documents are particularly important for smart and efficient planning of wastewater infrastructure for LACOSAN.

LACOSAN is operated by the Lake County Special Districts Administration which manages three LACOSAN wastewater treatment plants along with the Kelseyville Waterworks District #3 wastewater treatment plant. All plants operate at a secondary level of treatment. The Northwest, Southeast, and Middletown Wastewater Treatment facilities transport treated effluent to the Geysers for injection.

LACOSAN has a preventive maintenance program including systematic inspection, cleaning, exercising, lubricating, adjusting, and testing components of the wastewater collection and treatment system. Various routine maintenance activities include pump station testing, smoke testing, inspection/cleaning easements, manhole monitoring, root control, mainline cleaning, valve exercising, wet well cleaning, auxiliary generators, alarm testing, by-pass equipment testing, and grease and odor control.

Corrective maintenance involves the immediate repair of system defects as their presence becomes known. Corrective maintenance scheduling is dependent upon the severity of the defect.

Customer-related issues and issues threatening the environment are of the highest priority and are scheduled immediately. Since repair of system failures cannot, by

definition, be scheduled, planning for corrective maintenance involves budgeting adequate funds for system repair, based on historical costs.

Repairs and upgrades to collection infrastructure within LACOSAN are performed on an as needed basis and as required by the Regional Water Quality Control Board. LACOSAN has recently made improvements to its wastewater collection and treatment system (Northwest System), including the replacement of Pump Stations No. 1 and No. 2, a new force main from Pump No. 2 to the treatment plant (capacity of 6.4 mgd), and installation of the Supervisory Control and Data Acquisition system (SCADA) which covers all 22 pump stations in the collection system.

The force main improvement between Pump Station No. 1 and the treatment plant replaced the original force main that was associated with several failures during 2002.

7.2.2 MSR Determinations on Infrastructure for LACOSAN

2-1) LACOSAN has Master Facility Plans for each wastewater treatment plant.

2-2) Master Plans for the Northwest and Southeast collection systems have been updated and are being implemented.

2-3) The LACOSAN wastewater collection and treatment system has historically experienced numerous problems with inundation (I&I) during periods of high groundwater or high Clear Lake water levels.

2-4) The inflow and infiltration (I&I) into the collection system results in substantial increases in flow to the treatment plant and disposal systems and has lead to the issuance of a Cease and Desist Order and a Cleanup and Abatement Order from the Regional Water Quality Control Board.

2-5) LACOSAN should continue to submit Semi-Annual Progress Reports to the RWQCB regarding improvements to their collection system to reduce I&I flows.

2-6) LACOSAN has completed (and is in the process of updating) wastewater collection system Master Plans to determine overall integrity and define the nature and extent of I&I during dry and wet weather as required by various Regional Water Quality Control Board orders.

2-7) The LACOSAN collection systems (Northwest Regional Wastewater System, Southeast Regional Wastewater System, and Middletown Wastewater Treatment Facility) appear to be marginally adequate to effectively transfer the wastewater flow from the approximate 26,985[100] residents in the District's boundaries to the wastewater treatment plants.

2-8) Treated effluent is disposed of primarily through the Geysers effluent pipeline by injection into the Southeast Geysers steamfield. Existing spray irrigation systems will be used for effluent disposal by irrigating fodder crops when required as a backup.

2-9) In the event the District fails to comply with the provisions of Cease and Desist Order No. R5-2005-0007, the matter may be referred to the Attorney General for judicial enforcement or the Regional Water Quality Control Board may issue a penalty for administrative civil liability to LACOSAN.

2-10) Seasonal variations, distinct user groups, and the abundance of second homes significantly influence available capacity in the LACOSAN collection and treatment system. LACOSAN can usually expect a slight jump in average dry weather flow during the summer vacation months. Master plans and facility improvement plans have considered the effects of seasonal variations.

2-11) Treatment capacity and collection system needs could increase as conversion from secondary (vacation) to primary (year-round) residences occurs.

2-12) LACOSAN should update facility plans for the treatment plants every five years and should continue to maintain and update the capital improvement program budget annually.

2-13) Total existing connections and connection capacity (based on current information) is as follows: The Northwest RWTP has 4,670 existing connections[101] and a total service capacity of 9,534 connections. The Southwest RWTP has 6,707 existing connections[102] and has a total service capacity of 13,405 connections.

2-14) The Middletown WTP has 733 existing connections[103] and has a total service capacity of 933 connections. LACOSAN is in the initial stages of increasing service capacity of the Middletown WTP including a collection system in the Anderson Springs area.

[100] Lake County Special Districts Administration, "Current Operations by Utility Area", 8/6/2010.
[101] Lake County Special Districts Administration, "Current Operations by Utility Area", 8/6/2010.
[102] Lake County Special Districts Administration, "Current Operations by Utility Area", 8/6/2010.
[103] Lake County Special Districts Administration, "Current Operations by Utility Area", 8/6/2010.

7.3 Financial Ability of LACOSAN

Purpose: To evaluate factors that affect the financing of needed improvements and to identify practices or opportunities that may help eliminate unnecessary costs without decreasing service levels

LAFCO should consider the ability of a district to pay for improvements or services associated with annexed sites. This planning can begin at the SOI stage by identifying infrastructure and maintenance needs associated with future annexation and development, and identifying limitations on financing such improvements.

7.3.1 Financial Background

In the past, LACOSAN has been held liable for numerous raw sewage spills and sewer overflows from the Southeast and Northwest Regional collection systems, resulting in direct discharges to Clear Lake and its tributaries (possibly including Molesworth Creek), in violation of RWQCB Waste Discharge Requirements (WDRs) (California Regional Water Quality Control Board, Notice of Violation, August 21, 2003).

Failure to meet compliance with WDRs has resulted in enforcement action by the RWQCB in the form of civil liabilities totaling $150,000 across years 2002-2003 (Cease and Desist Order No. R5-2003-0040). The Cleanup and Abatement Order for the Southeast WTP also has the potential for fines if the conditions are not met.

District personnel have been cross-trained to perform most duties in their respective utility areas. This provides for greater flexibility in both routine and emergency situations. Maintenance personnel receive training consistent with the California Water Pollution Control Association (CWPCA) guidelines for wastewater collection system workers.

All LACOSAN maintenance personnel currently hold the proper certification to run a wastewater system of this size and nature, including Treatment Plant Operators Certification (state), and Grade I, II, and III licenses.

LACOSAN has also developed a Water Conservation Ordinance originally adopted in 1995, and amended in 2004 (Ordinance 2291 adding Middletown, Land's End, Holiday Cove, Corinthian Bay, and South Lakeport) and 2005 (Ordinance 2291 adding Kelseyville). This Conservation Ordinance outlines an effective strategy to implement low water-use fixtures to aid in reducing water demand throughout the LACOSAN system.

LACOSAN has historically required a unique capacity analysis when accepting new connections serving 4 or more units. In the past, LACOSAN has required a capacity analysis by a third party engineer who independently determines any impacts to the respective treatment facility and recommends mitigation measures. The developer has historically been required to pay the cost of the engineer's analysis.

LACOSAN is now moving away from this practice, and is in the process of developing Hydraulic Models for their four treatment plants, with the Southeast Regional Treatment Plant Hydraulic Model already being used. LACOSAN still has a policy to have the developer pay the cost of running the Hydraulic Model, and to have the developer pay to

implement the mitigation measures, therefore passing 100% of the cost of the analysis onto the developer.

The fees imposed by LACOSAN for new connections and monthly service are based on a Consumer Price Index (CPI). LACOSAN uses a CPI to establish the rate structure to ensure that rates bear a reasonable nexus to the cost of providing wastewater collection and treatment services to the residents of Lake County. The Foresight Study was specific on needed rate increases. For each water and wastewater system, one has to review a series of tables and graphs to arrive at the total revenue needed to fully implement a 5-year Capital Improvement Program (CIP). In the current economic climate, it is nearly impossible to completely implement each system's CIP since full implementation of the Foresight Study would have required doubling of the rates.

The Special Districts Administration in Lake County bills every sewer district in advance, and mails user-fee statements every two months.

The Foresight Study has been noted in this report and will help LACOSAN to achieve a fair rate structure which will allow the necessary improvements to the system.

7.3.2 MSR Determinations on Financial Ability for LACOSAN

3-1) Based on the latest available information and notwithstanding unforeseen events, capacity expansion for LACOSAN facilities will be sufficiently funded through a combination of reserves, grants, loans, and system capacity fees.

3-2) Excepting the uncertainties of the funding authorization process, there appear to be no institutional or financial obstacles to funding necessary expansion of the respective systems.

3-3) Costs associated with new development are paid by private developers and are documented in the System Capacity Fees section of the Foresight Study.

3-4) Costs for infrastructure benefiting each facility are paid though service and connection fees.

3-5) Costs for emergency repairs are covered by the districts' operation and maintenance funds.

3-6) Operational costs for LACOSAN are covered by ratepayers based on the type of use.

3-7) LACOSAN should continue the policy that new development pays the entire cost of development of new infrastructure, including connection, expansion, and inspection fees to cover the costs for LACOSAN.

3-8) The budget process for LACOSAN provides a public forum for cutting unnecessary costs and placing resources where most needed.

3-9) LACOSAN should avoid violations of WDR requirements which carry costly penalties and fines.

3-10) Sludge (biosolids) are transported from the Northwest and Middletown Plants to the Southeast WTP for land application as required by the State Permit.

3-11) By keeping LACOSAN rates (monthly service fees, new connection fees) in line with the cost of providing county-wide wastewater collection and treatment services, the District is preventing excess costs to future customers.

3-12) The District is effectively reducing costs to the ratepayers in the long term by reducing the likelihood of encountering major system defects and catastrophic system failures.

3-13) LACOSAN and SDA will continue to explore potential efficiencies that could be achieved through shared facilities and other cost-sharing arrangements. Ideas that could be explored include shared corporation yards, equipment, and office space.

3-14) The cost of the employees cannot be significantly reduced.

3-15) Rates and fees for services have been established in accordance with the provisions in State Law.

3-16) LACOSAN's revenue sources include new connection fees and monthly user fees.

3-17) LACOSAN does not collect or benefit from any property tax revenue and receives no property tax revenue from the AB-8 allocation.

3-18) LACOSAN uses the Consumer Price Index (CPI) to annually adjust rates for its Northwest, Southeast, and Middletown treatment systems using the methodology included in the rate study. The district uses the Engineering News Record, Construction Cost Index to adjust system capacity fees for its Southeast system. Other systems will use this method in the future. All customers have an annual CPI adjustment made each February based on the previous year's inflation. If the number is "zero" or negative, the adjustment will be zero.

7.4 Shared Facilities

Purpose: To evaluate the opportunities for a jurisdiction to share facilities and resources to develop more efficient service delivery systems.

7.4.1 Shared Facilities Background

The Lake County Sanitation District (LACOSAN) is headquartered in Lakeport at the Lake County Special Districts Administration. Lake County Special Districts Administration is a County department funded by several dependent districts (districts whose board of directors is the Board of Supervisors). These districts provide water and wastewater services and vary in size, including several County Service Areas and the Kelseyville County Waterworks District #3. The District with the largest budget and most assets is LACOSAN.

The Special Districts Administration is able to share resources with other County departments for a variety of administrative, legal, and financial services. The district has 40 position allocations including administrative, financial, supervisory, and technical staff.

In addition to being a part of the Lake County Special Districts Administration, LACOSAN and various other partners are involved in an effluent recycling project at the Geysers geothermal steamfield which includes collecting wastewater and transporting it via a pipeline to the Northern California Power Association and Calpine geothermal power facilities.

LACOSAN follows the Lake County Emergency Contingency Plan, which involves a large number of local agencies located on the shores of Clear Lake and in the Lake County area in sewage spill emergency response planning.

Due to topography, the location of wastewater collection agencies, and the manner in which wastewater collection systems are designed, sharing facilities such as lift stations and wastewater collection infrastructure between service providers is difficult but is practiced as applicable. Sharing items such as specialized equipment, heavy machinery and vehicles is routine in the Lake County area.

7.4.2 MSR Determinations on Shared Facilities for LACOSAN

4-1) The Lake County Sanitation District (LACOSAN) is headquartered in Lakeport at the Lake County Special Districts Administration Office.

4-2) LACOSAN has a wastewater reuse program that involves conveying wastewater effluent via a 50-mile pipeline from its Wastewater Treatment plants to geothermal power plants in the Geysers.

4-3) A portion of the domestic sewage from the City of Lakeport (approximately 800 SFDs) is pumped to the Northwest WTP. In exchange, Lands End/South Lakeport wastewater flows (250 SFDs) go to the Lakeport Treatment Plant (CLMSD).

4-4) Additional opportunities for shared facilities between LACOSAN and individual municipal service providers are unlikely, since LACOSAN has expanded as far as the County operational limits and topography will allow.

4-5) Sharing facilities such as specialized equipment (i.e., specialized cleaning equipment, vehicles, etc.) is done in the Lake County area between LACOSAN and the other local wastewater collection and treatment providers as much as possible.

7.5 Government Structure and Accountability

Purpose: To consider the advantages and disadvantages of various government structures that could provide public services, to evaluate the management capabilities of the organization and to evaluate the accessibility and levels of public participation associated with the agency's decision-making and management processes.

LAFCO may consider the agency's record of local accountability in its management of community affairs as a measure of the ability to provide adequate services to the Sphere of Influence and proposed annexation areas.

7.5.1 Government Structure and Accountability Background

Based on the most recent budget information it appears that the provision of wastewater collection and treatment is managed in a cost-effective, efficient manner meeting the needs of the community. LACOSAN has accounting and finance departments, personnel regulations and ordinances. The Special Districts Administration has up-to-date audits in compliance with auditing standards for all Lake County Sanitation (LACOSAN) service and billing areas.

LACOSAN is governed by the five-member Lake County Board of Supervisors acting as the Board of Directors for the District. The District Board is responsible for setting policy and general administrative procedures for LACOSAN. The District has 40 employees. A sanitary district may provide garbage collection and disposal, wastewater treatment and disposal, water reclamation, and water recycling and distribution.

LACOSAN has developed and maintains numerous customer-oriented programs, including a mission statement (see below), various links on the Lake County website, a District Newsletter (that can be accessed on the website), and regular in-house safety and management training. LACOSAN staff-members are very well trained and possess the proper certifications for operating wastewater collection and treatment systems. The agencies are responsive to complaints and respond promptly to problems. If not during office hours, staff is available by pager and cell phone. Utility area staff are available 24 hours per day, 7 days per week.

LACOSAN is Lake County's public wastewater collection and treatment agency. County General Plan policies dictate that LACOSAN should coordinate programs of expansion with the County's proposed development patterns, so that they may provide these services more efficiently, and therefore avoid excess expense. LACOSAN has grown to include most of Lake County, and is not slated to expand any more. LACOSAN has, from time-to-time established Zones of Benefit under certain circumstances for various communities throughout the County.

LACOSAN follows the Lake County Mission Statement that reads as follows:

> *The County of Lake provides proactive public policy, superior public service, and courteous public contact, responsible exercise of authority and sound management of resources to enhance the quality of life for our citizens, now and in the future.*

The Lake County Board of Supervisors adjourns to meet as the Lake County Sanitation District Board of Directors. Regularly scheduled Board meetings are held on the first Tuesday of each month at the County Courthouse Board Chambers located in Lakeport. Agendas for Board Meetings are posted and notices provided consistent with public meeting requirements.

Lake County Special Districts Administration has developed a website found on the home page of the County of Lake website. This website offers information related to LACOSAN and Lake County wastewater treatment in general. This County website is a fine example of a government website, offering a wide variety of information that the average citizen can easily access.

7.5.2 MSR Determinations on Government Structure for LACOSAN

5-1) LACOSAN provides wastewater collection and treatment services, as described in detail in previous sections.

5-2) In most areas of the County, the Lake County Board of Supervisors has the authority to create Assessment Districts without LAFCO review.

5-3) LACOSAN functions well and is viable as a public County sanitation agency.

5-4) Merging or consolidating with other service providers or public agencies in the area would not be practicable or efficient.

5-5) The District has developed Facility Plans for its three wastewater treatment plants, and is in the process of preparing comprehensive Master Facilities Plans covering the collection systems of all four of the treatment plants.

5-6) Having one agency performing both collection and treatment services for a large portion of Lake County has resulted in an overall reduced cost of providing these services, with centralized maintenance and administration.

5-7) Centralized billing helps allocate costs based on zones of benefit, and efficiencies in maintenance personnel costs are realized.

5-8) LACOSAN has organizational charts that outline efficient service delivery functions. Personnel in various divisions are cross-trained to provide continuous service delivery.

5-9) LACOSAN has developed a Capital Improvements Plan for its wastewater treatment systems. Such a Plan will help significantly with funding infrastructure repairs and upgrades.

5-10) LACOSAN has been subject to regulatory action (including Cease and Desist Orders, a Cleanup and Abatement Order and an Executive Officer issued Administrative Civil Liability) over the last five to ten years.

5-11) To meet the legal requirements LACOSAN has made improvements to its wastewater collection system, including replacement of pump stations, installation of new force mains, and replacement of oxidation ditches with aerated lagoons (Cease and Desist Order No. R5-2003-0040).

5-12) While there is significant attendance by the general public at most Board of Supervisors meetings there is not much discussion and testimony regarding most items related to LACOSAN. The Board should schedule several meetings per year to examine the overall program and direction for LACOSAN in addition to the business items required.

5-13) LACOSAN complies with necessary regulations (i.e., the Brown Act) and has regularly scheduled meetings to which the public is invited.

5-14) Lake County maintains relationships with the local media and LACOSAN administration is accessible to ratepayers and the public.

5-15) LACOSAN budgets and rate changes are adopted at noticed public hearings to which the public is invited.

5-16) LACOSAN has made excellent use of its link to the Lake County website to foster public relations and participation and to information citizens on the District's activities.

5-17) The LACOSAN website contains information regarding Board meeting times and locations, agendas and rates, water conservation tips, and specific information about LACOSAN's four treatment plants. The website also includes a District Newsletter.

5-18) The Internet is a relatively low-cost yet powerful method of involving the general public/customers/ratepayers in agency affairs. Greater dissemination of information can lead to greater interest in attending Board meetings and participating in elections. It also allows the public, some of whom are not physically able to attend Board meetings, to follow District activities remotely from their home or business.

5-19) The website posts LACOSAN budget and fee information that is easily accessible to the public

5-20) The LACOSAN website offers links with information regarding smart water use, various methods to reduce water use throughout the home, and other water conservation tips. This site also contains an abundance of information about smart fat, oil, and grease (FOG) handling tips, as improper disposal of these household/commercial items has resulted in grease blockages causing raw sewage spills in the past.

Appendix A Foresight Study Tables

Current vs. New Bi-Monthly Residential Sewer Rates *(FY'08-09)*
Lake County Special Districts

	Current Bi-monthly Charges		Projected New Bi-Mo. Resid. Rates			
District	Basic Charge	Rate/Add'l.	% Incr. (a)	Basic Charge	Fixed Rate	Total
Southeast	$42.58	$42.58	18.0%	$3.46	$60.97	$64.44
Northwest	$44.20	$44.20	12.0%	$3.87	$64.61	$68.49
Kelseyville	$40.00	$40.00	30.0%	$3.82	$44.95	$48.77
Corinthian Bay	$24.62	$24.62	6.0%	$3.82	$40.46	$44.28
Middletown	$32.60	$32.60	20.0%	$5.08	$39.09	$44.18
South Lakeport/LE	$67.38	$67.38	4.0%	$9.35	$50.12	$59.47

a. % increase of total district rate revenue, not the residential rates shown here.

Summary - Projected Net Revenue Requirements by Sewer System
Lake County Special Districts

		Projected Revenue Requirements (a)				
Sewer System	Budget	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Southeast	$2,845,742	$2,931,358	$3,231,317	$3,474,990	$3,625,969	$3,783,477
Northwest	$2,089,490	$2,165,987	$2,399,865	$2,587,142	$2,698,136	$2,813,890
Kelseyville	$226,675	$355,362	$421,844	$466,055	$476,634	$487,074
Corinthian Bay	$30,143	$33,815	$46,973	$55,594	$56,660	$57,686
Middletown	$414,356	$287,858	$325,226	$351,079	$359,372	$368,595
South Lakeport/L.E.	$143,451	$132,385	$165,582	$179,879	$184,048	$188,177
Total Revenue	$5,749,857	$5,906,765	$6,590,807	$7,114,739	$7,400,819	$7,698,899
New Debt Service as a % of Total		*7.0%*	*12.5%*	*15.1%*	*14.6%*	*14.0%*

a. Revenues are from Appendix Tables SB-SE1 through SB-SL1.

Summary - Sewer Revenue Reqt's. & Rate Revenue by System *(FY'08-09)*
Lake County Special Districts

	(1)	(2)	(3)	(4)
	FY'08-09	Revenue -	**Revenue**	% Rate
District	Revenue Reqt's.	Current Rates	**New Rates**	Increase (a)
Southeast	$2,931,358	$1,787,000	**$2,108,660**	18.0%
Northwest	$2,165,987	$1,547,000	**$1,732,640**	12.0%
Kelseyville	$355,362	$212,900	**$276,770**	30.0%
Corinthian Bay	$33,815	$19,500	**$29,250**	50.0%
Middletown	$287,858	$125,000	**$150,000**	20.0%
South Lakeport/L.E.	$132,385	$100,000	**$112,000**	12.0%
Total Revenue	$5,906,765	$3,791,400	**$4,409,320**	16.3%

a. Increase from "Revenue - Current Rates" to "Revenue from New Rates." From the financial plans for each System.
b. Percent change from "FY'08-09 Revenue Requirements" to the "Revenue from New Rates."

Projected Revenue from Recommended Sewer Rate by Sewer System

Lake County Special Districts

Sewer System	Projected Revenue from Rate Increases (a)				
	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Southeast	*$2,108,660*	*$2,488,219*	*$2,936,098*	*$3,347,152*	*$3,547,981*
Northwest	*$1,732,640*	*$1,940,557*	*$2,134,612*	*$2,348,074*	*$2,582,881*
Kelseyville	*$276,770*	*$359,801*	*$467,741*	*$467,741*	*$467,741*
Corinthian Bay	*$29,250*	*$42,413*	*$59,378*	*$59,378*	*$59,378*
Middletown	*$150,000*	*$172,500*	*$198,375*	*$222,180*	*$244,398*
South Lakeport/L.E.	*$112,000*	*$125,440*	*$143,002*	*$163,022*	*$185,845*
Total Revenue	*$4,409,320*	*$5,128,929*	*$5,939,206*	*$6,607,546*	*$7,088,224*
% Year-to-Year Increase	*18.3%*	*16.3%*	*15.8%*	*11.3%*	*7.3%*

a. Revenues are from the financial plans for each district shown in the Appendix.

Summary of Sewer System CIP Costs *(FY'08-09 through FY'12-13)*

Lake County Special Districts

	Projected CIP Costs ($2008) (a)					
	2008-09	2009-10	2010-11	2011-12	2012-13	Total
Southeast						
SSMP & Other Rehab.	$130,000	$130,000	$130,000	$130,000	$130,000	$650,000
Plant Upgrades	$1,141,000	$1,141,000	$1,141,000	$1,141,000	$1,141,000	$5,705,000
Total	$1,271,000	$1,271,000	$1,271,000	$1,271,000	$1,271,000	$6,355,000
Northwest						
SSMP & Other Rehab.	$80,000	$80,000	$80,000	$80,000	$80,000	$400,000
Plant Upgrades	$960,000	$960,000	$960,000	$960,000	$960,000	$4,800,000
Total	$1,040,000	$1,040,000	$1,040,000	$1,040,000	$1,040,000	$5,200,000
Kelseyville						
SSMP & Other Rehab.	$56,800	$56,800	$56,800	$56,800	$56,800	$284,000
Plant Upgrades	$392,900	$392,900	$392,900	$392,900	$392,900	$1,964,500
Total	$449,700	$449,700	$449,700	$449,700	$449,700	$2,248,500
Corinthian Bay						
SSMP & Other Rehab.	$76,000	$76,000	$76,000	$76,000	$76,000	$380,000
Plant Upgrades	$22,100	$22,100	$22,100	$22,100	$22,100	$110,500
Total	$98,100	$98,100	$98,100	$98,100	$98,100	$490,500
Middletown						
SSMP & Other Rehab. *(b)*	$55,000	$55,000	$55,000	$55,000	$55,000	$275,000
Plant Upgrades	$173,000	$173,000	$173,000	$173,000	$173,000	$865,000
Total	$228,000	$228,000	$228,000	$228,000	$228,000	$1,140,000
South Lakeport/L.E.						
SSMP & Other Rehab.	$88,000	$88,000	$88,000	$88,000	$88,000	$440,000
Plant Upgrades	$43,500	$43,500	$43,500	$43,500	$43,500	$217,500
Total	$131,500	$131,500	$131,500	$131,500	$131,500	$657,500

a. Source: Special Districts Administration (4-29-08, 5-15-08 & 6-24-08), State Water Resources Control Board, Regional Water Quality Control Board, CH2M Hill, and Water Works Engineers.

Estimated Financed Portion of Recommended Sewer System CIP Costs

Lake County Special Districts

	% Debt-Funded (a)	% of Total Debt (b)	Recommended Debt-Funded CIP Costs					
			2008-09	2009-10	2010-11	2011-12	2012-13	Total
Southeast	*100%*	*39.5%*	$1,271,000	$1,271,000	$1,271,000	$1,271,000	$1,271,000	$6,355,000
Northwest	*100%*	*32.3%*	$1,040,000	$1,040,000	$1,040,000	$1,040,000	$1,040,000	$5,200,000
Kelseyville	*100%*	*14.0%*	$449,700	$449,700	$449,700	$449,700	$449,700	$2,248,500
Corinthian Bay	*100%*	*3.0%*	$98,100	$98,100	$98,100	$98,100	$98,100	$490,500
Middletown	*100%*	*7.1%*	$228,000	$228,000	$228,000	$228,000	$228,000	$1,140,000
South Lakeport/L.E.	*100%*	*4.1%*	$131,500	$131,500	$131,500	$131,500	$131,500	$657,500
Total	*100.0%*	*100.0%*	**$3,218,300**	**$3,218,300**	**$3,218,300**	**$3,218,300**	**$3,218,300**	**$16,091,500**

a. Percent of each system's CIP costs that are funded by debt.

b. Each sewer system's CIP costs as a percent of the total debt for all systems.

Estimated Debt Service Payments for Recommended Sewer System CIP Costs

Lake County Special Districts

	% Debt Funded (a)	Projected Debt Service for Recommended Debt-Funded CIP Costs (b)						
		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
Southeast	*39.5%*	$162,294	$324,587	$424,106	$425,741	$426,985	$427,838	$2,191,551
Northwest	*32.3%*	$132,797	$265,595	$347,026	$348,364	$349,382	$350,080	$1,793,244
Kelseyville	*14.0%*	$57,422	$114,844	$150,055	$150,634	$151,074	$151,376	$775,406
Corinthian Bay	*3.0%*	$12,526	$25,053	$32,734	$32,860	$32,956	$33,022	$169,151
Middletown	*7.1%*	$29,113	$58,226	$76,079	$76,372	$76,595	$76,748	$393,134
South Lakeport/L.E.	*4.1%*	$16,791	$33,582	$43,879	$44,048	$44,177	$44,265	$226,742
Total - Debt Service (c)	*100.0%*	**$410,944**	**$821,887**	**$1,073,879**	**$1,078,019**	**$1,081,169**	**$1,083,329**	**$5,549,228**

a. Represents each District's share of the total debt-funded CIP costs.

b. 30-year revenue bonds at 5.5%. Source: Northcross Hill & Ach analysis, March 17, 2008.

Percent of New Residential Sewer Rates Used for CIP Costs *(FY'08-09)*

Lake County Special Districts

Sewer System	*% of Rate Rev. Used for CIP (a)*
Southeast Regional System	**26%**
Northwest Regional System	**24%**
Kelseyville CWWD #3	**21%**
Corinthian Bay (AD 9-2)	**43%**
Middletown Sanitation District	**19%**
S. Lakeport/Lands End	**15%**

a. Estimated debt service divided by financial plan rate revenue.

Sewer System Capacity Fees (SCF's)

Lake County - Special Districts

District	Costs Allocated to Growth *(2008 $'s)* (a)	Number of New Dwelling Units *(EDU's)* (b)	Calculated SCF *($/EDU)* (c)	Current SCF *($/EDU)*	Difference: Calculated SCF less Current SCF
Southeast	$9,260,439	2,517	**$3,680**	$4,488	($808)
Northwest	$9,643,662	836	**$11,540**	$4,488	$7,052
Kelseyville	$9,659,260	552	**$17,510**	$4,388	$13,122
Middletown	$4,400,032	257	**$17,130**	$4,488	$12,642
South Lakeport/L.E.	$805,864	173	**$4,660**	NA	NA

a. From Appendix Table SCF-S3.

b. Available growth capacity over the next 20 years. From Appendix Table SCF-S2. Source: Criterion Planners, Build-Out Analysis, April 2006, revised to be consistent with the 2008 General Plan Update by Lake County Community Development Department.

c. Costs Allocated to Growth divided by Number of New Dwelling Units. SCF is rounded to the nearest $10.

Northwest

Table SFP-NW1
Sewer Utility Financial Plan - Northwest Regional System (LACOSAN #3)
Lake County Special Districts

	Estimated	Projected Rev. Reqt's., Rate Increases and Rate Revenue				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Net Revenue Requirements (a)	($2,089,490)	($2,165,987)	($2,399,865)	($2,587,142)	($2,698,136)	($2,813,890)
Annual % Increase over Previous Year	*16.7%*	*3.7%*	*10.8%*	*7.8%*	*4.3%*	*4.3%*
Base Case - Current Rates with No Increases						
Revenue from Current Rates (a)	$1,547,000	$1,547,000	$1,547,000	$1,547,000	$1,547,000	$1,547,000
less Net Revenue Reqt's.	($2,089,490)	($2,165,987)	($2,399,865)	($2,587,142)	($2,698,136)	($2,813,890)
Year-End Surplus (Deficit)	($542,490)	($618,987)	($852,865)	($1,040,142)	($1,151,136)	($1,266,890)
Proposed Financial Plan - Sewer Rate Increases						
Rate Increases		12%	12%	10%	10%	10%
Revenue from Current Rates (a)	$1,547,000	$1,547,000	$1,547,000	$1,547,000	$1,547,000	$1,547,000
Rate Revenue from Rate Increases:						
		$185,640	$185,640	$185,640	$185,640	$185,640
			$207,917	$207,917	$207,917	$207,917
				$194,056	$194,056	$194,056
					$213,461	$213,461
						$234,807
Revenue from Rate Increases	**$0**	**$185,640**	**$393,557**	**$587,612**	**$801,074**	**$1,035,881**
Projected Rate Revenue (w/ Rate Increases)	$1,547,000	$1,732,640	$1,940,557	$2,134,612	$2,348,074	$2,562,881
less Net Revenue Reqt's.	($2,089,490)	($2,165,987)	($2,399,865)	($2,587,142)	($2,698,136)	($2,813,890)
Year-End Surplus (Deficit)	($542,490)	($433,347)	($459,308)	($452,530)	($350,062)	($231,009)

a. From Table SB-NW1, Sewer System Budget Projections and Revenue Requirements - Northwest Regional System.

Table SFP-NW2
Summary of Projected Sewer Reserve Fund Levels - Northwest Regional System (LACOSAN #3)
Lake County Special Districts

	Estimated	Projected Reserve Funds				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Sewer Operations Fund (Cash)						
Beginning Fund Balance	$0	$770,383	$423,343	$229,035	$123,505	$121,443
Sewer Rate Revenue Surplus (Deficit) (a)	$0	($433,347)	($459,308)	($452,530)	($350,062)	($231,009)
Transfers from CIP Fund	$0	$0	$265,000	$347,000	$348,000	$350,000
Transfers to R&R Fund	$0	$0	$0	$0	$0	$0
Year-End Fund Balance (b)	**$0**	**$423,343**	**$229,035**	**$123,505**	**$121,443**	**$240,434**
Sewer Capital Improvement Fund (CIP)						
Beginning Fund Balance	$0	$0	$463,099	$416,599	$286,299	$149,799
Cap Fee Revenue	$0	$0	$200,000	$200,000	$200,000	$200,000
Transfer to Operations Fund	$0	$0	($265,000)	($347,000)	($348,000)	($350,000)
Investment Earnings	$0	$0	$18,500	$16,700	$11,500	$6,000
Year-End Fund Balance (b)	**$0**	**$463,099**	**$416,599**	**$286,299**	**$149,799**	**$5,799**
Sewer Repair & Replacement Fund (R&R)						
Beginning Fund Balance (a)	$0	$0	$165,917	$172,517	$179,417	$186,617
Transfer from Operations Fund	$0	$0	$0	$0	$0	$0
Investment Earnings	$0	$0	$6,600	$6,900	$7,200	$7,500
Year-End Fund Balance (b)	**$0**	**$165,917**	**$172,517**	**$179,417**	**$186,617**	**$194,117**
Combined Sewer Funds Balance	**$0**	**$1,052,359**	**$818,151**	**$589,221**	**$457,859**	**$440,350**
General Inflation Escalator	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Interest Earnings Rate	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*
Approx. Coverage Ratio (c)		*792%*	*305%*	*170%*	*131%*	*105%*

a. From Table SFP-NW1, Sewer Utility Financial Plan - Northwest Regional System (LACOSAN #1).
b. FY'08-09 year-end fund balance from County's Form 7 "Total Reserves Proposed for FY'08-09". Allocation between LACOSAN #1 and #3 is by % of operating expenses shown in Tables SB-SE1 and SB-NW1.
c. Planning-level coverage ratio calculation: total ending reserve funds divided by annual debt service for new revenue bonds.

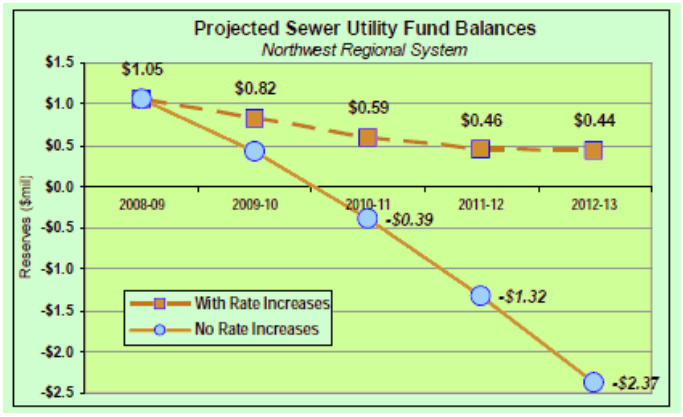


Table CA-NW1

Sewer Cost Allocations by Functional Component - Northwest Regional System (LACOSAN #3) (FY'08-09)

Lake County Special Districts

Sewer Operations Fund	2008-09 Budget (a)	Allocated Costs: Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related	Percent Allocations: Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related
Operating Expenditures											
Collection	$497,173	$0	$0	$497,173	$0	$0	0%	0%	100%	0%	0%
Treatment	$693,486	$0	$0	$485,440	$104,023	$104,023	0%	0%	70%	15%	15%
Disposal	$597,811	$0	$0	$538,030	$29,891	$29,891	0%	0%	90%	5%	5%
Admin	$473,759	$94,752	$47,376	$236,879	$47,376	$47,376	20%	10%	50%	10%	10%
Subtotals	$2,262,229	$94,752	$47,376	$1,757,522	$181,289	$181,289	4.2%	2.1%	77.7%	8.0%	8.0%
CIP Expenditures (b)											
Fixed Assets (Cash-Funded)	$279,020	$0	$0	$279,020	$0	$0	0%	0%	100%	0%	0%
Pay-As-You-Go (Cash Funded)	$0	$0	$0	$0	$0	$0	0%	0%	100%	0%	0%
Debt Funded (Debt Service)	$132,797	$0	$0	$92,958	$13,280	$26,559	0%	0%	70%	10%	20%
Subtotals	$411,817	$0	$0	$371,978	$13,280	$26,559	0.0%	0.0%	90.3%	3.2%	6.4%
Non-Rate Expenses											
less Other Revenue	($508,059)	($21,280)	($10,640)	($394,710)	($40,715)	($40,715)	4.2%	2.1%	77.7%	8.0%	8.0%
Subtotals	($508,059)	($21,280)	($10,640)	($394,710)	($40,715)	($40,715)	4%	2%	78%	8%	8%
Total System Revenue Reqt's.	**$2,165,987**	**$73,472**	**$36,736**	**$1,734,790**	**$153,855**	**$167,134**	**3.4%**	**1.7%**	**80.1%**	**7.1%**	**7.7%**
Fixed/Variable Allocations		*$110,208*			*$2,055,779*		*5.1%*			*94.9%*	

a. From Table SB-NW1, Sewer System Budget Projections and Revenue Requirements - Northwest Regional System.

b. Allocations are based on the CIP projects shown in the Final CIP Worksheet from Special District Administration staff, 12-7-07, with Foresight revisions.

Table COS-NW1

Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Northwest Regional System *(FY'08-09)*

Lake County Special Districts

	Fixed Costs: Customer	Other Fixed	Variable Costs: Flow (a)	BOD Costs	TSS Costs	Total Rev. Req't.
Allocated Rev. Reqt's (a)	$58,811	$29,405	$1,388,609	$123,153	$133,782	$1,733,760
Customers, Flow & Loadings (b)						
No. of Services	3,800	--	--	--	--	--
No. of Services	--	3,800	--	--	--	--
Flow *(hcf/yr)*	--	--	505,039	--	--	--
BOD *(lbs/yr)*	--	--	--	938,050	--	--
TSS *(lbs/yr)*	--	--	--	--	1,129,081	--
Unit Costs ($/year/unit) (c)	**$15.48/acct.**	**$7.74/acct.**	**$2.750/hcf**	**$0.1313/lb.**	**$0.1185/lb.**	--

a. From Table CA-NW1, Sewer Cost Allocations by Functional Component - Northwest Regional System (FY'08-09).

b. From Table L-NW1, Customer Accounts & Estimated Flow & Loadings - Northwest Regional System (FY'08-09).

c. Allocated revenue requirement divided by the units of the flow or loading parameter.

Table COS-NW2

Revenue Requirements & Monthly Rates by Customer Class - Northwest Regional System *(FY'08-09)*

Lake County Special Districts

Customer Classes	Customer Costs			Other Fixed Costs			Flow-Related Costs		
	Number of Accounts *(b)*	Unit Cost $/Acct./2 mo.*(c)*	Annual Rev. Req't.*(d)*	Number of Acct's (b)	Unit Cost $/Acct/2 mo.(c)	Annual Rev. Req't.*(d)*	Effluent (hcf/yr) *(e)*	Unit Cost ($/hcf) *(c)*	Annual Rev. Req't.*(d)*
Residential *(a)*	3,628	$2.5794	$56,149	3,628	$1.2897	$28,074	440,124	$2.750	$1,210,126
Low-Strength Commercial									
1 Professional Office	50	$2.579	$774	50.0	$0.64	$387	6,319	$2.750	$17,375
2 Car Wash	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
3 Schools w/o Cafeteria	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
4 Laundromat	9	$2.579	$139	9.0	$0.64	$70	6,190	$2.750	$17,019
5 Beauty Shop	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
6 Dept./Small Retail	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
7 Theaters	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
Medium-Strength Commercial									
8 Schools w/ Cafeteria	6	$2.579	$93	6.0	$0.64	$46	5,471	$2.750	$15,041
9 Service Stations	5	$2.579	$77	5.0	$0.64	$39	3,946	$2.750	$10,849
10 Bars w/o Dining	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
11 Church/Fraternal/Clubhouse	10	$2.579	$155	10.0	$0.64	$77	943	$2.750	$2,593
12 Hospital/Conval. Home	5	$2.579	$77	5.0	$0.64	$39	7,155	$2.750	$19,674
13 Hotel/Motel w/o Dining	11	$2.579	$170	11.0	$0.64	$85	1,631	$2.750	$4,483
14 Misc. Commercial	40	$2.579	$619	40.0	$0.64	$310	5,282	$2.750	$14,523
High-Strength Commercial									
15 Hotel/Motel w/ Dining	24	$2.579	$371	24.0	$0.64	$186	1,602	$2.750	$4,406
16 Markets w/o grinders	3	$2.579	$46	3.0	$0.64	$23	283	$2.750	$778
17 Markets w/ grinders	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
18 Short Order/Take-out	0	$2.579	$0	0.0	$0.00	$0	0	$2.750	$0
19 Restaurants	5	$2.579	$77	5.0	$0.64	$39	25,844	$2.750	$71,057
20 Septage Dump	4	$2.579	$62	4.0	$0.64	$31	249	$2.750	$685
Subtotal - Non-Resid.	172	--	$2,662	172.0	--	$1,331	64,914	--	$178,483
Total - Resid. & Non-Res.	3,800	--	$58,811	3,800.0	--	$29,405	505,039	--	$1,388,609

Table COS-NW2 (cont.)

Customer Classes	BOD-Related Costs			TSS-Related Costs			Summary of Costs		
	Units of BOD (lbs/yr) (e)	Unit Cost ($/lb) (c)	Annual Rev. Req't.(d)	Units of TSS (lbs/yr) (e)	Unit Cost ($/lb) (c)	Annual Rev. Req't.(d)	Cust. & Other Fixed (f)	Flow, BOD, & TSS (g)	**Total Rev. Reqt's.**
Residential (a)	679,652	$0.1313	$89,229	889,951	$0.1185	$105,448	$84,223	$1,404,803	$1,489,026
Low-Strength Commercial								*($/hcf)*	
1 Professional Office	6,041	$0.1313	$793	4,868	$0.1185	$577	$1,161	$18,745	$19,906
2 Car Wash	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
3 Schools w/o Cafeteria	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
4 Laundromat	6,827	$0.1313	$896	6,556	$0.1185	$777	$209	$18,692	$18,901
5 Beauty Shop	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
6 Dept./Small Retail	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
7 Theaters	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
Medium-Strength Commercial									
8 Schools w/ Cafeteria	6,839	$0.1313	$898	6,848	$0.1185	$811	$139	$16,751	$16,890
9 Service Stations	5,223	$0.1313	$686	10,638	$0.1185	$1,260	$116	$12,795	$12,911
10 Bars w/o Dining	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
11 Church/Fraternal/Clubhouse	1,457	$0.1313	$191	1,907	$0.1185	$226	$232	$3,011	$3,243
12 Hospital/Conval. Home	13,154	$0.1313	$1,727	6,890	$0.1185	$816	$116	$22,217	$22,333
13 Hotel/Motel w/o Dining	3,717	$0.1313	$488	1,884	$0.1185	$223	$255	$5,194	$5,450
14 Misc. Commercial	8,156	$0.1313	$1,071	10,680	$0.1185	$1,265	$929	$16,859	$17,788
High-Strength Commercial									
15 Hotel/Motel w/ Dining	5,891	$0.1313	$773	9,257	$0.1185	$1,097	$557	$6,276	$6,833
16 Markets w/o grinders	1,165	$0.1313	$153	1,526	$0.1185	$181	$70	$1,112	$1,181
17 Markets w/ grinders	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
18 Short Order/Take-out	0	$0.1313	$0	0	$0.1185	$0	$0	$0	$0
19 Restaurants	190,040	$0.1313	$24,950	149,305	$0.1185	$17,691	$116	$113,698	$113,814
20 Septage Dump	9,888	$0.1313	$1,298	28,771	$0.1185	$3,409	$93	$5,392	$5,485
Subtotal - Non-Resid.	258,398	--	$33,924	239,130	--	$28,334	$3,993	$240,741	$244,734
Total - Resid. & Non-Res.	938,050	--	$123,153	1,129,081	--	$133,782	$88,216	$1,645,544	$1,733,760

a. Represents all residential classes shown in Table COS-NW1, Customer Accounts & Estimated Flow & Loadings - Northwest Regional System (FY'08-09).
b. From Special District Administration's billing records (see Table L-NW1, Customer Accounts & Estimated Flow & Loadings - Northwest Regional System).
c. From Table COS-NW1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Northwest Regional System (FY'08-09).
d. Units times unit costs.
e. From Table L-NW1, Customer Accounts & Estimated Flow & Loadings - Northwest Regional System.
f. Total annual Customer Costs and Other Fixed Costs.
g. Total annual revenue requirements per customer class excluding Customer Costs and Other Fixed Costs.

Table COS-NW3

Summary of Monthly Rates by Customer Class - Northwest Regional System *(FY'08-09)*

Lake County Special Districts

	Basic Charge (a)	Bi-Mo. Fixed Rate (b)		Volume Rates			
Residential	($/acct./2 mo.)	EDU Factor (c)	($/EDU/2 mo.)	Rev. Regt. (d)	Water Use (e)	Vol. Rate (f)	Description
1 Single-Family	$3.87	100%	$64.54	--	--	--	
2 Duplex/Triplex/MH	$3.87	90%	$58.08	--	--	--	
3 Apartments	$3.87	70%	$45.17	--	--	--	
4 Trailer Space	$3.87	20%	$12.91	--	--	--	
5 Vacant	$3.87	100%	$64.54	--	--	--	
Low-Strength Commercial						($/hcf water use)	
1 Professional Office	$3.87	73%	$47.04	$18,745	9,028	$33.18	*1 EDU = 24 employees*
2 Car Wash	$3.87	73%	$46.99	$0	0	$3.85	*Based on Current EDU's*
3 Schools w/o Cafeteria	$3.87	74%	$47.50	$0	0	$3.89	*1 EDU = 40 students*
Schools w/o Cafeteria (per student)	--	--	$1.19	--	--	--	
4 Laundromat	$3.87	74%	$48.04	$18,692	8,927	$175.01	*1 machine = 1.25 EDU (or 1 EDU = 0.8 machines)*
5 Beauty Shop	$3.87	74%	$48.04	$0	0	$0.00	*1 EDU = 2 stations*
6 Dept./Small Retail	$3.87	76%	$48.96	$0	0	$4.01	*Based on Current EDU's*
7 Theaters	$3.87	76%	$48.96	$0	0	$4.01	*1 EDU = 100 seats*
Medium-Strength Commercial							
8 Schools w/ Cafeteria	$3.87	76%	$48.80	$16,751	7,815	$4.00	*1 EDU = 17 students*
Schools w/ Cafeteria (per student)	--	--	$1.95	--	--	--	
9 Service Stations	$3.87	81%	$52.41	$12,795	5,637	$2.58	*A 3-pump island = 1.67 EDU*
10 Bars w/o Dining	$3.87	79%	$50.87	$0	0	$4.17	*1 EDU = 15 seats*
11 Church/Fraternal/Clubhouse	$3.87	79%	$51.25	$3,011	1,347	$4.20	*1 EDU = 500 seats*
12 Hospital/Conval. Home	$3.87	76%	$49.32	$22,217	10,222	$6.06	*1 bed = 0.67 EDU*
13 Hotel/Motel w/o Dining	$3.87	79%	$50.69	$5,194	2,329	$9.97	*1 unit = 0.42 EDU's (or 1 EDU = 2.38 units)*
Hotel/Motel w/o Dining (per unit)	--	--	$21.29	--	--	--	
14 Misc. Commercial	$3.87	79%	$51.25	$16,859	7,546	$37.06	*Based on Current EDU's*
High-Strength Commercial							
15 Hotel/Motel w/ Dining	$3.87	100%	$64.65	$6,276	2,289	$15.90	*1 unit = 0.5 EDU's (or 1 EDU = 2.0 units)*
Hotel/Motel w/ Dining (per unit)	--	--	$21.33	--	--	--	
16 Markets w/o grinders	$3.87	100%	$64.64	$1,112	404	$5.30	*Based on Current EDU's*
17 Markets w/ grinders	$3.87	114%	$73.82	$0	0	$6.05	*Based on Current EDU's*
18 Short Order/Take-out	$3.87	98%	$63.53	$0	0	$0.00	*1 EDU = 70 seats*
Short Order/Take-out (per seat)	--	1.4%	$0.89	--	--	--	
19 Restaurants	$3.87	112%	$72.24	$113,698	36,919	$5.92	*1 EDU = 33 seats*
Restaurants (per seat over 33)	--	3%	$2.17	--	--	--	
20 Septage Dump	$3.87	--	--	--	--	--	
Septage Dump (per 1,000 gals.)	--	--	--	--	--	$22.10	

a. Basic Charges are applied to each account, but not additional EDU's, and include customer and other fixed costs.
b. Represents all revenue requirements not included in the Basic Charge, and is charged based on the number of EDU's.
c. Shows the percent of a full Single-Family (or EDU) rate based on the amount of effluent and the wastewater strength (BOD and TSS).
d. Revenue requirements for Flow, BOD and TSS from Table COS-NW2, Revenue Requirements & Monthly Rates by Customer Class - Northwest Regional System (FY'08-09).
e. From Table COS-NW1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Northwest Regional System (FY'08-09).
f. These are volume charges per hcf of water shown in Table L-NW1, Customer Accounts & Estimated Flow & Loadings - Northwest Regional System.

Table COS-NW4

Calculation of Commercial Bi-Monthly Fixed Rates Per EDU - Northwest Regional System *(FY'08-09)*

Lake County Special Districts

Customer Classes	EDU *(SFD's)*	Equivalent Treatment Factors *(a)*			Treatment Costs/EDU ($/2 mo.)*(b)*			Fixed Rate per EDU *(c)*
		Avg. hcf/EDU	BOD/EDU	TSS/EDU	Flow (hcf/yr)	BOD (lbs/yr)	TSS (lbs/yr)	
Residential	4,666	*100.0%*	*100.0%*	*100.0%*	*$43.22*	*$3.19*	*$4.84*	*$51.25*
Low-Strength Commercial	119.5							
1 Professional Office		100.0%	61.9%	38.1%	$43.222	$1.973	$1.845	$47.04
2 Car Wash		100.0%	9.5%	71.4%	$43.222	$0.304	$3.460	$46.99
3 Schools w/o Cafeteria		100.0%	61.9%	47.6%	$43.222	$1.973	$2.307	$47.50
Schools w/o Cafeteria (per student)		100.0%	61.9%	47.6%	$1.081	$0.049	$0.058	$1.19
4 Laundromat		100.0%	71.4%	52.4%	$43.222	$2.276	$2.537	$48.04
5 Beauty Shop		100.0%	71.4%	52.4%	$43.222	$2.276	$2.537	$48.04
6 Dept./Small Retail		100.0%	71.4%	71.4%	$43.222	$2.276	$3.460	$48.96
7 Theaters		100.0%	71.4%	71.4%	$43.222	$2.276	$3.460	$48.96
Medium-Strength Commercial	303.4							
8 Schools w/ Cafeteria		100.0%	81.0%	61.9%	$43.222	$2.580	$2.999	$48.80
Schools w/ Cafeteria (per student)		100.0%	81.0%	61.9%	$1.729	$0.103	$0.120	$1.95
9 Service Stations		100.0%	85.7%	133.3%	$43.222	$2.732	$6.459	$52.41
10 Bars w/o Dining		100.0%	95.2%	95.2%	$43.222	$3.035	$4.614	$50.87
11 Church/Fraternal/Clubhouse		100.0%	100.0%	100.0%	$43.222	$3.187	$4.844	$51.25
12 Hospital/Convalt. Home		100.0%	119.0%	47.6%	$43.222	$3.794	$2.307	$49.32
13 Hotel/Motel w/o Dining		100.0%	147.6%	57.1%	$43.222	$4.705	$2.768	$50.69
Hotel/Motel w/o Dining (per unit)		100.0%	147.6%	57.1%	$18.153	$1.976	$1.163	$21.29
14 Misc. Commercial		100.0%	100.0%	100.0%	$43.222	$3.187	$4.844	$51.25
High-Strength Commercial	331.1							
15 Hotel/Motel w/ Dining		100.0%	238.1%	285.7%	$43.222	$7.588	$13.841	$64.65
Hotel/Motel w/ Dining (per unit)		100.0%	238.1%	285.7%	$14.263	$2.504	$4.567	$21.33
16 Markets w/o grinders		100.0%	266.7%	266.7%	$43.222	$8.499	$12.918	$64.64
17 Markets w/ grinders		100.0%	381.0%	381.0%	$43.222	$12.141	$18.454	$73.82
18 Short Order/Take-out		100.0%	333.3%	200.0%	$43.222	$10.623	$9.688	$63.53
Short Order/Take-out (per seat)		100.0%	333.3%	200.0%	$0.605	$0.149	$0.136	$0.89
19 Restaurants		100.0%	476.2%	285.7%	$43.222	$15.176	$13.841	$72.24
Restaurants (per seat over 33)		100.0%	476.2%	285.7%	$1.297	$0.455	$0.415	$2.17
20 Septage Dump *(d)*		--	--	--	--	--	--	--
Septage Dump (per 1,000 gals.)		--	--	--	--	--	--	$22.10

a. This is the percentage of residential effluent flow and strength and is used to determine the fixed rate for each commercial customer. The BOD and TSS factors reflect the BOD and TSS differences between each commercial class and the residential class.

b. Based on the *"Equivalent Treatment Factor"*, this is the cost per unit for flow, BOD and TSS that goes into the fixed rate.

c. The bi-monthly charge is the sum of the *"Treatment Costs/EDU"* for flow, BOD and TSS.

d. Calculated separately in Table COS-NW5, "Calculation of Septage Charges"

Table COS-NW5

Calculation of Septage Charges *($/1,000 gallons) - Northwest Regional System (FY'08-09)*

Lake County Special Districts

Treatment Costs:	*Flow (gallons)*	BOD (mg/L)	BOD (lbs.)	TSS (mg/L)	TSS (lbs.)
Units *(from Table L-NW1)*	1,000	4,639	38.69	13,500	112.59
Unit Cost *($/hcf or $/lb.)*	$2.75		$0.13		$0.12
Cost *($/1,000 gals.)*	$3.68		$5.08	--	$13.34
Treatment Cost per 1,000 gals.					$22.10
Basic Bi-Monthly Charge per Account					$3.87
Minimum Bi-Monthly Charge *(a)*					$25.96
Additional Charge per 1,000 gals. Discharged (b)					*$22.10*

a. Minimum charge for at least one pumper truck discharge to the treatment plant.

b. Each additional discharge will be an additional volume charge, shown here in $/1,000 gallons.

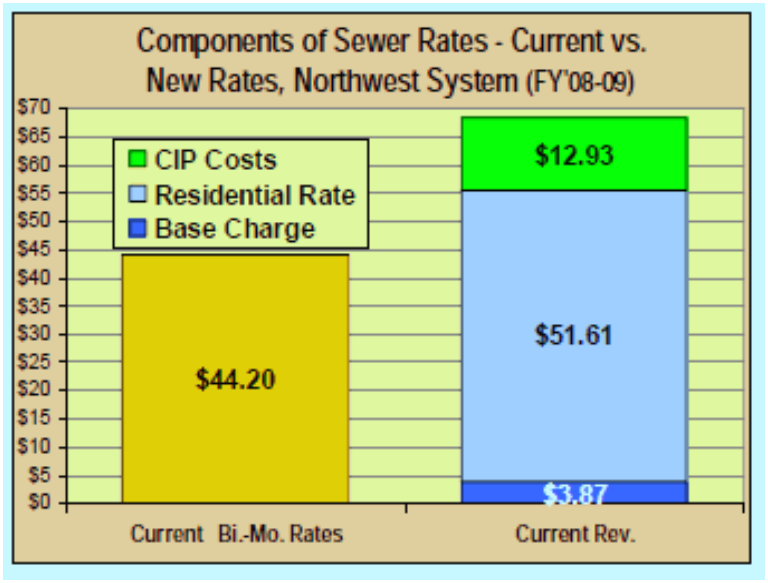


Table PR-NW1

Summary of Recommended Sewer Rates - Northwest Regional System

Lake County Special Districts

	Current Charges[a] (bi-monthly)		Projected New Bi-Monthly Sewer Rates [c]									
			2008-09 [b]			2009-10		2010-11		2011-12		2012-13
Residential	Basic Charge	Rate/Add'l	Basic Charge	Fixed Rate	Fixed Rate Unit	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate
Single-Family	$44.20	$44.20	$3.87	$64.54	dwelling	$4.33	$72.28	$4.77	$79.51	$5.24	$87.46	$5.77	$96.20
Duplex/Triplex/Mobile Home	$44.20	$44.20	$3.87	$58.08	unit	$4.33	$65.05	$4.77	$71.56	$5.24	$78.71	$5.77	$86.58
Apartments	$44.20	$44.20	$3.87	$45.17	apartment	$4.33	$50.60	$4.77	$55.66	$5.24	$61.22	$5.77	$67.34
Trailer Space w/hook-up	$44.20	$8.80	$3.87	$12.91	space	$4.33	$14.46	$4.77	$15.90	$5.24	$17.49	$5.77	$19.24
Low-Strength Commercial													
Professional Office	$44.20	*NA*	$3.87	$47.04	*EDU's*	$4.33	$52.69	$4.77	$57.95	$5.24	$63.75	$5.77	$70.12
Car Wash	*NA*	*NA*	$3.87	$46.99	*EDU's*	$4.33	$52.62	$4.77	$57.89	$5.24	$63.68	$5.77	$70.04
Schools w/o Cafeteria	*NA*	*NA*	$3.87	$47.50	*EDU's*	$4.33	$53.20	$4.77	$58.52	$5.24	$64.37	$5.77	$70.81
Schools w/o Cafeteria (per student)	*NA*	*NA*	--	$1.19	*students*	--	$1.33	--	$1.46	--	$1.61	--	$1.77
Laundromat	$44.20	$31.14	$3.87	$48.04	*EDU's*	$4.33	$53.80	$4.77	$59.18	$5.24	$65.10	$5.77	$71.61
Beauty Shop	$44.20	$34.30	$3.87	$48.04	*EDU's*	$4.33	$53.80	$4.77	$59.18	$5.24	$65.10	$5.77	$71.61
Dept./Small Retail	$44.20	$2.18	$3.87	$48.96	*EDU's*	$4.33	$54.83	$4.77	$60.32	$5.24	$66.35	$5.77	$72.98
Theaters	$44.20	$1.04	$3.87	$48.96	*EDU's*	$4.33	$54.83	$4.77	$60.32	$5.24	$66.35	$5.77	$72.98
Medium-Strength Commercial													
Schools w/ Cafeteria	$88.40	$88.40	$3.87	$48.80	*EDU's*	$4.33	$54.66	$4.77	$60.12	$5.24	$66.13	$5.77	$72.75
Schools w/ Cafeteria (per student)	*NA*	$1.90	--	$1.95	*students*	--	$2.19	--	$2.40	--	$2.65	--	$2.91
Service Stations	$88.40	$88.40	$3.87	$52.41	*EDU's*	$4.33	$58.70	$4.77	$64.57	$5.24	$71.03	$5.77	$78.13
Bars w/o Dining	$88.40	$1.04	$3.87	$50.87	*EDU's*	$4.33	$56.98	$4.77	$62.67	$5.24	$68.94	$5.77	$75.83
Church/Fraternal/Clubhouse	$88.40	$88.40	$3.87	$51.25	*EDU's*	$4.33	$57.40	$4.77	$63.14	$5.24	$69.46	$5.77	$76.40
Hospital/Conval. Home	$88.40	$17.52	$3.87	$49.32	*EDU's*	$4.33	$55.24	$4.77	$60.77	$5.24	$66.84	$5.77	$73.53
Hotel/Motel w/o Dining	$88.40	$88.40	$3.87	$50.69	*EDU's*	$4.33	$56.78	$4.77	$62.46	$5.24	$68.70	$5.77	$75.57
Hotel/Motel w/o Dining (per unit)	*NA*	$7.52	--	$21.29	*unit*	--	$23.85	--	$26.23	--	$28.85	--	$31.74
Misc. Commercial	$88.40	$88.40	$3.87	$51.25	*EDU's*	$4.33	$57.40	$4.77	$63.14	$5.24	$69.46	$5.77	$76.40
High-Strength Commercial													
Hotel/Motel w/ Dining	$88.40	$88.40	$3.87	$64.65	*EDU's*	$4.33	$72.41	$4.77	$79.65	$5.24	$87.61	$5.77	$96.38
Hotel/Motel w/ Dining (per unit)	*NA*	$9.84	--	$21.33	*unit*	--	$23.89	--	$26.28	--	$28.91	--	$31.80
Markets w/o grinders	*NA*	*NA*	$3.87	$64.64	*EDU's*	$4.33	$72.40	$4.77	$79.63	$5.24	$87.60	$5.77	$96.36
Markets w/ grinders	*NA*	*NA*	$3.87	$73.82	*EDU's*	$4.33	$82.68	$4.77	$90.94	$5.24	$100.04	$5.77	$110.04
Short Order/Take-out	$88.40	$88.40	$3.87	$63.53	*EDU's*	$4.33	$71.16	$4.77	$78.27	$5.24	$86.10	$5.77	$94.71
Short Order/Take-out (per seat)	*NA*	$2.44	--	$0.89	*seat*	--	$1.00	--	$1.10	--	$1.21	--	$1.33
Restaurants	$88.40	$88.40	$3.87	$72.24	*EDU's*	$4.33	$80.91	$4.77	$89.00	$5.24	$97.90	$5.77	$107.69
Restaurants (per seat over 33)	*NA*	*$2.44*	--	$2.17	*seat*	--	$2.43	--	$2.67	--	$2.94	--	$3.23
Septage Disposal	$88.40	$14.64	$3.87	--	*EDU's*	$4.33	--	$4.77	--	$5.24	--	$5.77	--
Septage (per 1,000 gals.)	*NA*	*NA*	--	$22.10	*1,000 gals.*	--	$24.75	--	$27.22	--	$29.94	--	$32.94
Financial Plan Rate Increase	–	–	*12.0%*			*12.0%*		*10.0%*		*10.0%*		*10.0%*	

a. From Lake County current rate codes and ordinances.
b. Basic charges are applied per account, while the fixed rate is per unit as shown. From Table COS-NW3, Summary of Monthly Rates by Customer Class - Northwest Regional System (FY'08-09).
c. Projected rates in 2009-10 and later are calculated using the 2008-09 rates and the "Financial Plan Rate Increase" shown at the bottom of the table.

Southeast

Table SFP-SE1
Sewer Utility Financial Plan - Southeast Regional System (LACOSAN #1)
Lake County Special Districts

	Estimated	Projected Rev. Reqt's., Rate Increases and Rate Revenue				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Net Revenue Requirements (a)	($2,845,742)	($2,931,358)	($3,231,317)	($3,474,990)	($3,625,969)	($3,783,477)
Annual % Increase over Previous Year	*16.7%*	*3.0%*	*10.2%*	*7.6%*	*4.3%*	*4.3%*
Base Case - Current Rates with No Increases						
Revenue from Current Rates (a)	$1,769,000	$1,787,000	$1,787,000	$1,787,000	$1,787,000	$1,787,000
less Net Revenue Reqt's.	($2,845,742)	($2,931,358)	($3,231,317)	($3,474,990)	($3,625,969)	($3,783,477)
Year-End Surplus (Deficit)	($1,076,742)	($1,144,358)	($1,444,317)	($1,687,990)	($1,838,969)	($1,996,477)
Proposed Financial Plan - Sewer Rate Increases						
Rate Increases		18%	18%	18%	14%	6%
Revenue from Current Rates (a)	$1,769,000	$1,787,000	$1,787,000	$1,787,000	$1,787,000	$1,787,000
Rate Revenue from Rate Increases:						
		$321,660	$321,660	$321,660	$321,660	$321,660
			$379,559	$379,559	$379,559	$379,559
				$447,879	$447,879	$447,879
					$411,054	$411,054
						$200,828
Revenue from Rate Increases	**$0**	**$321,660**	**$701,219**	**$1,149,098**	**$1,560,152**	**$1,760,981**
Projected Rate Revenue (w/ Rate Increases)	$1,769,000	$2,108,660	$2,488,219	$2,936,098	$3,347,152	$3,547,981
less Net Revenue Reqt's.	($2,845,742)	($2,931,358)	($3,231,317)	($3,474,990)	($3,625,969)	($3,783,477)
Year-End Surplus (Deficit)	($1,076,742)	($822,698)	($743,098)	($538,892)	($278,817)	($235,496)

a. From Table SB-SE1, Sewer System Budget Projections and Revenue Requirements - Southeast Regional System.

Table SFP-SE2
Summary of Projected Sewer Reserve Fund Levels - Southeast Regional System (LACOSAN #1)
Lake County Special Districts

	Estimated	Projected Reserve Funds				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Sewer Operations Fund (Cash)						
Beginning Fund Balance	$0	$1,343,584	$576,564	$133,466	$144,574	$165,757
Sewer Rate Revenue Surplus (Deficit) (a)	$0	($822,698)	($743,098)	($538,892)	($278,817)	($235,496)
Transfers to CIP Fund	$0	$0	$300,000	$550,000	$300,000	$175,000
Transfers to R&R Fund	$0	$0	$0	$0	$0	$0
Year-End Fund Balance (b)	**$0**	**$576,564**	**$133,466**	**$144,574**	**$165,757**	**$105,261**
Sewer Capital Improvement Fund (CIP)						
Beginning Fund Balance	$0	$0	$630,710	$555,910	$228,110	$137,210
Cap Fee Revenue	$0	$0	$200,000	$200,000	$200,000	$200,000
Transfer from Operations Fund	$0	$0	($300,000)	($550,000)	($300,000)	($175,000)
Investment Earnings (c)	*$0*	$0	$25,200	$22,200	$9,100	$5,500
Year-End Fund Balance (c)	**$0**	**$630,710**	**$555,910**	**$228,110**	**$137,210**	**$167,710**
Sewer Repair & Replacement Fund (R&R)						
Beginning Fund Balance	$0	$0	$225,967	$234,967	$244,367	$254,167
Transfer from Operations Fund	$0	$0	$0	$0	$0	$0
Investment Earnings	$0	$0	$9,000	$9,400	$9,800	$10,200
Year-End Fund Balance	**$0**	**$225,967**	**$234,967**	**$244,367**	**$254,167**	**$264,367**
Combined Sewer Funds Balance	**$0**	**$1,433,241**	**$924,343**	**$617,051**	**$557,134**	**$537,338**
General Inflation Escalator		*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Interest Earnings Rate	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*
Approximate Coverage Ratio (c)		*553%*	*356%*	*146%*	*131%*	*126%*

a. From Table SFP-SE1, Sewer Utility Financial Plan - Southeast Regional System (LACOSAN #1).
b. FY08-09 year-end fund balance from County's Form 7 "Total Reserves Proposed for FY08-09". Allocation between LACOSAN #1 and #3 is by % of operating expenses shown in Tables SB-SE1 and SB-NW1.
c. Planning-level coverage ratio calculation: total ending reserve funds divided by annual debt service for new revenue bonds.

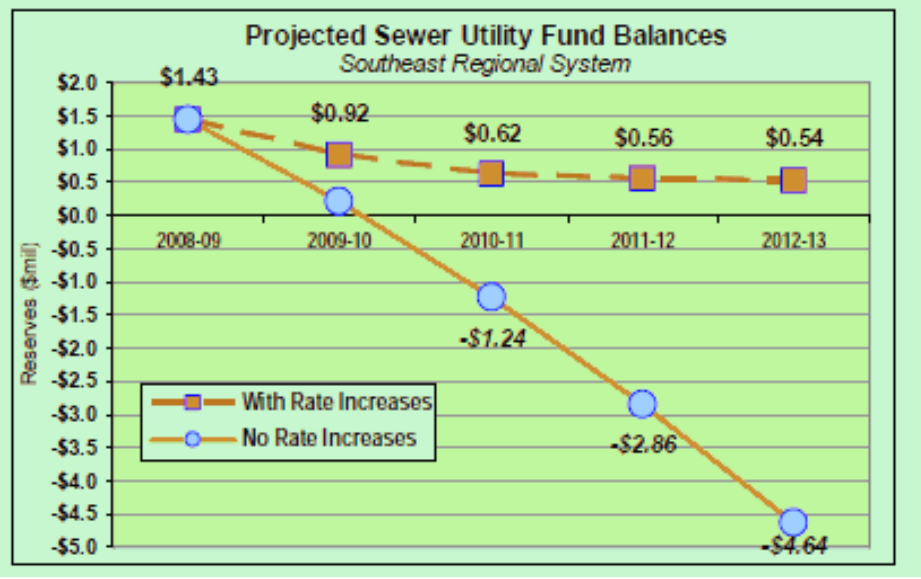


Table CA-SE1

Sewer Cost Allocations by Functional Component - Southeast Regional System (LACOSAN #1) (FY'08-09)

Lake County Special Districts

Sewer Operations Fund	2008-09 Budget (a)	Allocated Costs: Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related	Percent Allocations: Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related
Operating Expenditures											
Collection	$677,115	$0	$0	$677,115	$0	$0	0%	0%	100%	0%	0%
Treatment	$944,480	$0	$0	$661,136	$141,672	$141,672	0%	0%	70%	15%	15%
Disposal	$814,177	$0	$0	$732,760	$40,709	$40,709	0%	0%	90%	5%	5%
Admin	$645,227	$129,045	$64,523	$322,614	$64,523	$64,523	20%	10%	50%	10%	10%
Subtotals	$3,081,000	$129,045	$64,523	$2,393,625	$246,904	$246,904	4.2%	2.1%	77.7%	8.0%	8.0%
CIP Expenditures (b)											
Fixed Assets (Cash-Funded)	$380,005	$0	$0	$380,005	$0	$0	0%	0%	100%	0%	0%
Pay-As-You-Go (Cash Funded)	$0	$0	$0	$0	$0	$0	0%	0%	100%	0%	0%
Debt Funded (Debt Service)	$162,294	$0	$0	$146,064	$0	$16,229	0%	0%	90%	0%	10%
Subtotals	$542,299	$0	$0	$526,070	$0	$16,229	0.0%	0.0%	97.0%	0.0%	3.0%
Non-Rate Expenses											
less Other Revenue	($691,941)	($28,981)	($14,491)	($537,668)	($55,450)	($55,450)	4.2%	2.1%	77.7%	8.0%	8.0%
Subtotals	($691,941)	($28,981)	($14,491)	($537,668)	($55,450)	($55,450)	4%	2%	78%	8%	8%
Total System Revenue Reqt's.	**$2,931,358**	**$100,064**	**$50,032**	**$2,382,128**	**$191,453**	**$207,683**	**3.4%**	**1.7%**	**81.3%**	**6.5%**	**7.1%**
Fixed/Variable Allocations		*$150,096*			*$2,781,262*		*5.1%*		*94.9%*		

a. From Table SB-SE1, Sewer System Budget Projections and Revenue Requirements - Southeast Regional System.

b. Allocations are based on the CIP projects shown in the Final CIP Worksheet from Special District Administration staff, 12-7-07, with Foresight revisions.

Table COS-SE1

Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Southeast Regional System *(FY'08-09)*

Lake County Special Districts

	Fixed Costs: Customer	Other Fixed	Variable Costs: Flow (a)	BOD Costs	TSS Costs	Total Rev. Req't.
Allocated Rev. Reqt's (a)	$71,940	$35,970	$1,712,614	$137,644	$149,312	$2,107,480
Customers, Flow & Loadings (b)						
No. of Services	5,210	--	--	--	--	--
No. of Services	--	5,210	--	--	--	--
Flow (hcf/yr)	--	--	650,634	--	--	--
BOD (lbs/yr)	--	--	--	751,900	--	--
TSS (lbs/yr)	--	--	--	--	853,311	--
Unit Costs ($/year/unit) (c)	**$13.81/acct.**	**$6.90/acct.**	**$2.632/hcf**	**$0.1831/lb.**	**$0.1750/lb.**	--

a. From Table CA-SE1, Sewer Cost Allocations by Functional Component - Southeast Regional System (FY'08-09).

b. From Table L-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System (FY'08-09).

c. Allocated revenue requirement divided by the units of the flow or loading parameter.

Table COS-SE2

Revenue Requirements & Monthly Rates by Customer Class - Southeast Regional System *(FY'08-09)*

Lake County Special Districts

Customer Classes	Customer Costs			Other Fixed Costs			Flow-Related Costs		
	Number of Accounts *(b)*	Unit Cost $/Acct./2 mo.*(c)*	Annual Rev. Req't.*(d)*	Number of Acct's (b)	Unit Cost $/Acct/2 mo.(c)	Annual Rev. Req't.*(d)*	Effluent (hcf/yr) *(e)*	Unit Cost ($/hcf) *(c)*	Annual Rev. Req't.*(d)*
Residential *(a)*	4,917	$2.3014	$67,895	4,917	$1.1507	$33,947	584,835	$2.632	$1,539,417
Low-Strength Commercial									
1 Professional Office	34	$2.301	$469	34	$0.58	$235	3,484	$2.632	$9,171
2 Car Wash	0	$2.301	$0	0	$0.00	$0	0	$2.632	$0
3 Schools w/ Cafeteria	2	$2.301	$28	2	$0.58	$14	9,475	$2.632	$24,939
4 Laundromat	10	$2.301	$138	10	$0.58	$69	8,646	$2.632	$22,759
5 Beauty Shop	20	$2.301	$276	20	$0.58	$138	2,049	$2.632	$5,395
6 Dept./Small Retail	24	$2.301	$331	24	$0.58	$166	2,459	$2.632	$6,474
7 Theaters	1	$2.301	$14	1	$0.58	$7	205	$2.632	$539
Medium-Strength Commercial									
8 Schools w/ Cafeteria & Showers	1	$2.301	$14	1	$0.58	$7	7,698	$2.632	$20,262
9 Service Stations	5	$2.301	$69	5	$0.58	$35	3,202	$2.632	$8,428
10 Bars w/o Dining	0	$2.301	$0	0	$0.00	$0	0	$2.632	$0
11 Church/Fraternal/Clubhouse	25	$2.301	$345	25	$0.58	$173	2,562	$2.632	$6,743
12 Hospital/Conval. Home	1	$2.301	$14	1	$0.58	$7	6,946	$2.632	$18,284
13 Hotel/Motel w/o Dining	19	$2.301	$262	19	$0.58	$131	3,362	$2.632	$8,850
14 Misc. Commercial	101	$2.301	$1,395	101	$0.58	$697	10,350	$2.632	$27,243
High-Strength Commercial									
15 Hotel/Motel w/ Dining	17	$2.301	$235	17	$0.58	$117	1,774	$2.632	$4,670
16 Markets w/o grinders	0	$2.301	$0	0	$0.00	$0	0	$2.632	$0
17 Markets w/ grinders	0	$2.301	$0	0	$0.00	$0	0	$2.632	$0
18 Short Order/Take-out	23	$2.301	$318	23	$0.58	$159	2,357	$2.632	$6,204
19 Restaurants	8	$2.301	$110	8	$0.58	$55	820	$2.632	$2,158
20 Septage Dump	2	$2.301	$28	2	$0.58	$14	410	$2.632	$1,079
Subtotal - Non-Resid.	293	--	$4,046	293	--	$2,023	65,799	--	$173,197
Total - Resid. & Non-Res.	5,210	--	$71,940	5,210	--	$35,970	650,634	--	$1,712,614

Table COS-SE2 (cont.)

Customer Classes	BOD-Related Costs			TSS-Related Costs			Summary of Costs		
	Units of BOD (lbs/yr) (e)	Unit Cost ($/lb) *(c)*	Annual Rev. Req't.*(d)*	Units of TSS (lbs/yr) (e)	Unit Cost ($/lb) *(c)*	Annual Rev. Req't.*(d)*	Cust. & Other Fixed *(f)*	Flow, BOD, & TSS *(g)*	**Total Rev. Reqt's.**
Residential *(a)*	662,211	$0.1831	$121,225	755,098	$0.1750	$132,127	$101,842	$1,792,769	$1,894,611
Low-Strength Commercial								*($/hcf)*	
1 Professional Office	2,442	$0.1831	$447	1,714	$0.1750	$300	$704	$9,918	$10,622
2 Car Wash	0	$0.1831	$0	0	$0.1750	$0	$0	$0	$0
3 Schools w/ Cafeteria	6,641	$0.1831	$1,216	5,825	$0.1750	$1,019	$41	$27,174	$27,215
4 Laundromat	6,993	$0.1831	$1,280	5,847	$0.1750	$1,023	$207	$25,062	$25,269
5 Beauty Shop	1,658	$0.1831	$303	1,386	$0.1750	$243	$414	$5,941	$6,355
6 Dept./Small Retail	1,989	$0.1831	$364	2,268	$0.1750	$397	$497	$7,235	$7,732
7 Theaters	166	$0.1831	$30	189	$0.1750	$33	$21	$603	$624
Medium-Strength Commercial									
8 Schools w/ Cafeteria & Showers	7,056	$0.1831	$1,292	6,152	$0.1750	$1,077	$21	$22,630	$22,651
9 Service Stations	3,108	$0.1831	$569	5,512	$0.1750	$965	$104	$9,961	$10,065
10 Bars w/o Dining	0	$0.1831	$0	0	$0.1750	$0	$0	$0	$0
11 Church/Fraternal/Clubhouse	2,901	$0.1831	$531	3,308	$0.1750	$579	$518	$7,853	$8,371
12 Hospital/Conval. Home	9,363	$0.1831	$1,714	4,271	$0.1750	$747	$21	$20,745	$20,766
13 Hotel/Motel w/o Dining	5,620	$0.1831	$1,029	2,481	$0.1750	$434	$394	$10,313	$10,706
14 Misc. Commercial	11,719	$0.1831	$2,145	13,363	$0.1750	$2,338	$2,092	$31,727	$33,818
High-Strength Commercial									
15 Hotel/Motel w/ Dining	4,784	$0.1831	$876	6,545	$0.1750	$1,145	$352	$6,691	$7,044
16 Markets w/o grinders	0	$0.1831	$0	0	$0.1750	$0	$0	$0	$0
17 Markets w/ grinders	0	$0.1831	$0	0	$0.1750	$0	$0	$0	$0
18 Short Order/Take-out	8,896	$0.1831	$1,628	6,086	$0.1750	$1,065	$476	$8,897	$9,374
19 Restaurants	4,420	$0.1831	$809	3,024	$0.1750	$529	$166	$3,496	$3,662
20 Septage Dump	11,935	$0.1831	$2,185	30,241	$0.1750	$5,292	$41	$8,555	$8,597
Subtotal - Non-Resid.	89,689	--	$16,419	98,213	--	$17,185	$6,069	$206,801	$212,869
Total - Resid. & Non-Res.	751,900	--	$137,644	853,311	--	$149,312	$107,910	$1,999,570	$2,107,480

a. Represents all residential classes shown in Table COS-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System (FY'08-09).
b. From Special District Administration's billing records (see Table L-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System).
c. From Table COS-SE1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Southeast Regional System (FY'08-09).
d. Units times unit costs.
e. From Table L-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System.
f. Total annual Customer Costs and Other Fixed Costs.
g. Total annual revenue requirements per customer class excluding Customer Costs and Other Fixed Costs.

Table COS-SE3

Summary of Monthly Rates by Customer Class - Southeast Regional System *(FY'08-09)*

Lake County Special Districts

	Basic Charge (a)	Bi-Mo. Fixed Rate (b)		Volume Rates			
Residential	($/acct./2 mo.)	EDU Factor (c)	($/EDU/2 mo.)	Rev. Reqt. (d)	Water Use (e)	Vol. Rate (f)	Description
1 Single-Family	$3.45	100%	$60.77	--	--	--	
2 Duplex/Triplex/MH	$3.45	90%	$54.69	--	--	--	
3 Apartments	$3.45	70%	$42.54	--	--	--	
4 Trailer Space	$3.45	20%	$12.15	--	--	--	
5 Vacant	$3.45	100%	$60.77	--	--	--	
Low-Strength Commercial						($/hcf water use)	
1 Professional Office	$3.45	80%	$48.62	$9,918	4,977	$26.03	*1 EDU = 24 employees*
2 Car Wash	$3.45	79%	$48.05	$0	0	$3.94	*Based on Current EDU's*
3 Schools w/ Cafeteria	$3.45	81%	$48.98	$27,174	13,535	$4.02	*1 EDU = 40 students*
Schools w/ Cafeteria (per student)	--	--	$1.22	--	--	--	
4 Laundromat	$3.45	81%	$49.51	$25,062	12,470	$210.58	1 machine = 1.25 EDU (or 1 EDU = 0.8 machines)
5 Beauty Shop	$3.45	81%	$49.51	$5,941	2,928	$26.48	*1 EDU = 2 stations*
6 Dept./Small Retail	$3.45	83%	$50.24	$7,235	3,513	$4.12	*Based on Current EDU's*
7 Theaters	$3.45	83%	$50.24	$603	293	$4.12	*1 EDU = 100 seats*
Medium-Strength Commercial							
8 Schools w/ Cafeteria & Showers	$3.45	83%	$50.21	$22,630	10,997	$4.12	*1 EDU = 17 students*
Schools w/ Cafe.& Showers (per student)	--	--	$2.01	--	--	--	
9 Service Stations	$3.45	87%	$53.13	$9,961	4,574	$2.61	*A 3-pump island = 1.67 EDU*
10 Bars w/o Dining	$3.45	86%	$52.00	$0	0	$4.26	*1 EDU = 15 seats*
11 Church/Fraternal/Clubhouse	$3.45	86%	$52.35	$7,853	3,660	$4.29	*1 EDU = 500 seats*
12 Hospital/Conval. Home	$3.45	84%	$51.01	$20,745	9,923	$6.27	*1 bed = 0.67 EDU*
13 Hotel/Motel w/o Dining	$3.45	86%	$52.39	$10,313	4,803	$10.31	*1 unit = 0.42 EDU's (or 1 EDU = 2.38 units)*
Hotel/Motel w/o Dining (per unit)	--	--	$22.00	--	--	--	
14 Misc. Commercial	$3.45	86%	$52.35	$31,727	14,785	$27.90	*Based on Current EDU's*
High-Strength Commercial							
15 Hotel/Motel w/ Dining	$3.45	106%	$64.41	$6,691	2,535	$15.84	*1 unit = 0.5 EDU's (or 1 EDU = 2.0 units)*
Hotel/Motel w/ Dining (per unit)	--	--	$21.25	--	--	--	
16 Markets w/o grinders	$3.45	106%	$64.69	$0	0	$5.30	*Based on Current EDU's*
17 Markets w/ grinders	$3.45	120%	$73.14	$0	0	$0.00	*Based on Current EDU's*
18 Short Order/Take-out	$3.45	106%	$64.47	$8,897	3,367	$33.96	*1 EDU = 70 seats*
Short Order/Take-out (per seat)	--	1.4%	$0.90	--	--	--	
19 Restaurants	$3.45	120%	$72.84	$3,496	1,171	$38.14	*1 EDU = 33 seats*
Restaurants (per seat over 33)	--	3%	$2.19	--	--	--	
20 Septage Dump	$3.45	--	--	--	--	--	
Septage Dump (per 1,000 gals.)	--	--	--	--	--	$29.95	

a. Basic Charges are applied to each account, but not additional EDU's, and include customer and other fixed costs.
b. Represents all revenue requirements not included in the Basic Charge, and is charged based on the number of EDU's.
c. Shows the percent of a full Single-Family (or EDU) rate based on the amount of effluent and the wastewater strength (BOD and TSS).
d. Revenue requirements for flow, BOD and TSS from Table COS-SE2, Revenue Requirements & Monthly Rates by Customer Class - Southeast Regional System (FY'08-09).
e. From Table COS-SE1, Total Flow, Loadings, Rev. Reqts. & Unit Costs - Southeast Regional System (FY'08-09).
f. These are volume charges per hcf of water shown in Table L-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System.

Table COS-SE3

Summary of Monthly Rates by Customer Class - Southeast Regional System *(FY'08-09)*

Lake County Special Districts

	Basic Charge (a)	Bi-Mo. Fixed Rate (b)		Volume Rates			
Residential	($/acct./2 mo.)	EDU Factor (c)	($/EDU/2 mo.)	Rev. Reqt. (d)	Water Use (e)	Vol. Rate (f)	Description
1 Single-Family	$3.45	100%	$60.77	--	--	--	
2 Duplex/Triplex/MH	$3.45	90%	$54.69	--	--	--	
3 Apartments	$3.45	70%	$42.54	--	--	--	
4 Trailer Space	$3.45	20%	$12.15	--	--	--	
5 Vacant	$3.45	100%	$60.77	--	--	--	
Low-Strength Commercial						($/hcf water use)	
1 Professional Office	$3.45	80%	$48.62	$9,918	4,977	$26.03	*1 EDU = 24 employees*
2 Car Wash	$3.45	79%	$48.05	$0	0	$3.94	*Based on Current EDU's*
3 Schools w/ Cafeteria	$3.45	81%	$48.98	$27,174	13,535	$4.02	*1 EDU = 40 students*
Schools w/ Cafeteria (per student)	--	--	$1.22	--	--	--	
4 Laundromat	$3.45	81%	$49.51	$25,062	12,470	$210.58	1 machine = 1.25 EDU (or 1 EDU = 0.8 machines)
5 Beauty Shop	$3.45	81%	$49.51	$5,941	2,928	$26.48	*1 EDU = 2 stations*
6 Dept./Small Retail	$3.45	83%	$50.24	$7,235	3,513	$4.12	*Based on Current EDU's*
7 Theaters	$3.45	83%	$50.24	$603	293	$4.12	*1 EDU = 100 seats*
Medium-Strength Commercial							
8 Schools w/ Cafeteria & Showers	$3.45	83%	$50.21	$22,630	10,997	$4.12	*1 EDU = 17 students*
Schools w/ Cafe.& Showers (per student)	--	--	$2.01	--	--	--	
9 Service Stations	$3.45	87%	$53.13	$9,961	4,574	$2.61	*A 3-pump island = 1.67 EDU*
10 Bars w/o Dining	$3.45	86%	$52.00	$0	0	$4.26	*1 EDU = 15 seats*
11 Church/Fraternal/Clubhouse	$3.45	86%	$52.35	$7,853	3,660	$4.29	*1 EDU = 500 seats*
12 Hospital/Conval. Home	$3.45	84%	$51.01	$20,745	9,923	$6.27	*1 bed = 0.67 EDU*
13 Hotel/Motel w/o Dining	$3.45	86%	$52.39	$10,313	4,803	$10.31	*1 unit = 0.42 EDU's (or 1 EDU = 2.38 units)*
Hotel/Motel w/o Dining (per unit)	--	--	$22.00	--	--	--	
14 Misc. Commercial	$3.45	86%	$52.35	$31,727	14,785	$27.90	*Based on Current EDU's*
High-Strength Commercial							
15 Hotel/Motel w/ Dining	$3.45	106%	$64.41	$6,691	2,535	$15.84	*1 unit = 0.5 EDU's (or 1 EDU = 2.0 units)*
Hotel/Motel w/ Dining (per unit)	--	--	$21.25	--	--	--	
16 Markets w/o grinders	$3.45	106%	$64.69	$0	0	$5.30	*Based on Current EDU's*
17 Markets w/ grinders	$3.45	120%	$73.14	$0	0	$0.00	*Based on Current EDU's*
18 Short Order/Take-out	$3.45	106%	$64.47	$8,897	3,367	$33.96	*1 EDU = 70 seats*
Short Order/Take-out (per seat)	--	1.4%	$0.90	--	--	--	
19 Restaurants	$3.45	120%	$72.84	$3,496	1,171	$38.14	*1 EDU = 33 seats*
Restaurants (per seat over 33)	--	3%	$2.19	--	--	--	
20 Septage Dump	$3.45	--	--	--	--	--	
Septage Dump (per 1,000 gals.)	--	--	--	--	--	$29.95	

a. Basic Charges are applied to each account, but not additional EDU's, and include customer and other fixed costs.
b. Represents all revenue requirements not included in the Basic Charge, and is charged based on the number of EDU's.
c. Shows the percent of a full Single-Family (or EDU) rate based on the amount of effluent and the wastewater strength (BOD and TSS).
d. Revenue requirements for Flow, BOD and TSS from Table COS-SE2, Revenue Requirements & Monthly Rates by Customer Class - Southeast Regional System (FY'08-09).
e. From Table COS-SE1, Total Flow, Loadings, Rev. Reqts. & Unit Costs - Southeast Regional System (FY'08-09).
f. These are volume charges per hcf of water shown in Table L-SE1, Customer Accounts & Estimated Flow & Loadings - Southeast Regional System.

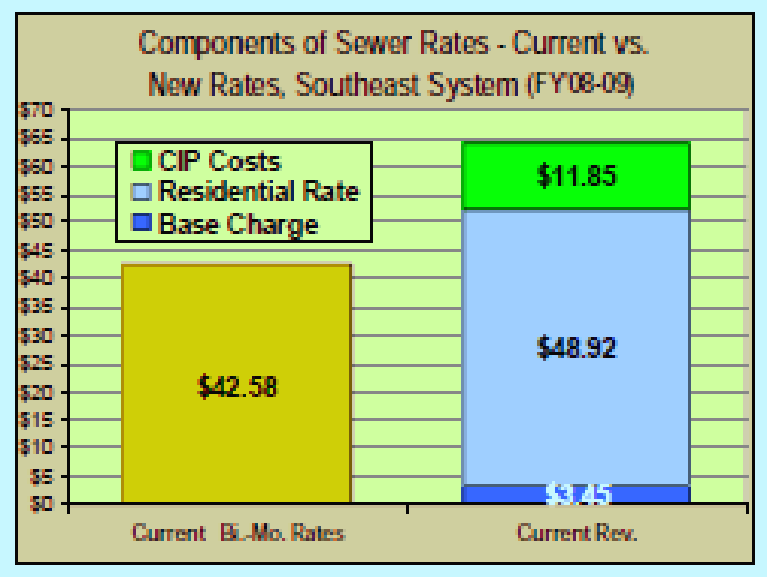
Table COS-SE5

Calculation of Septage Charges *($/1,000 gallons) - Southeast Regional System (FY'08-09)*

Lake County Special Districts

Treatment Costs:	Flow (gallons)	BOD (mg/L)	BOD (lbs.)	TSS (mg/L)	TSS (lbs.)
Units *(from Table L-SE1)*	1,000	5,060	42.20	12,820	106.92
Unit Cost *($/hcf or $/lb.)*	$2.63	--	$0.18	--	$0.17
Cost *($/1,000 gals.)*	$3.52	--	$7.73	--	$18.71
Treatment Cost per 1,000 gals.					$29.95
Basic Bi-Monthly Charge per Account					$3.45
Minimum Bi-Monthly Charge *(a)*					$33.41
Additional Charge per 1,000 gals. Discharged (b)					*$29.95*

a. Minimum charge for at least one pumper truck discharge to the treatment plant.
b. Each additional discharge will be an additional volume charge, shown here in $/1,000 gallons.



Middletown

Table SB-MID1
Projected Sewer Revenue Requirements - Middletown Sanitation District
Lake County Special Districts

Sewer Operations Fund		Budget 2007-08	Projected Revenue Requirements 2008-09	2009-10	2010-11	2011-12	2012-13
Operations (a)							
Collection	36.6%	$142,922	$106,325	$109,570	$112,868	$116,166	$119,831
Treatment	29.1%	$113,598	$84,510	$87,089	$89,710	$92,332	$95,244
Disposal	4.3%	$16,758	$12,467	$12,847	$13,234	$13,621	$14,050
Admin	29.9%	$116,735	$86,843	$89,494	$92,188	$94,881	$97,874
Subtotal - Operations		$390,012	$290,145	$299,000	$308,000	$317,000	$327,000
CIP Expenditures							
Pay-As-You-Go *(Cash Funded)*		$4,353	$0	$0	$0	$0	$0
Debt Funded *(Debt Service Payments)* (c)		$49,736	$29,113	$58,226	$76,079	$76,372	$76,595
Subtotal - CIP		$54,089	$29,113	$58,226	$76,079	$76,372	$76,595
less Recurring Other Revenue (b)		($29,745)	($31,400)	($32,000)	($33,000)	($34,000)	($35,000)
less One-time Revenues or Reserves			$0	$0	$0	$0	$0
Net Revenue Requirements		**$414,356**	**$287,858**	**$325,226**	**$351,079**	**$359,372**	**$368,595**
Rate Revenue from Current Rates (d)		*$107,566*	*$125,000*	*$125,000*	*$125,000*	*$125,000*	*$125,000*

a. Summarized from County Schedule RR1.253. Costs are allocated to operational categories based on Special District's financials (files UA1FIN, UA2FIN, and UA3FIN). See Table FCA-S1.
b. Includes one-time revenues, charges for delinquent payments, connection fee revenue, and similar misc. revenues. From Fund 253 Form 3.
c. From Tables CIP-S2 and CIP-S4. Based on Northcross Hill and Ach analysis, which assumes a 5.5% interest rate and a 30-year repayment.
d. User fees (rate revenue). From Fund 253 Form 3. Projections are assumed to be the same as current and do not include inflation.

Table SFP-MID1
Sewer Utility Financial Plan - Middletown Sanitation District
Lake County Special Districts

	Estimated 2007-08	Projected Rev. Reqt's., Rate Increases and Rate Revenue 2008-09	2009-10	2010-11	2011-12	2012-13
Net Revenue Requirements (a)	**($414,356)**	**($287,858)**	**($325,226)**	**($351,079)**	**($359,372)**	**($368,595)**
Annual % Increase over Previous Year	*137.7%*	*-30.6%*	*13.0%*	*7.9%*	*2.4%*	*2.6%*
Base Case - Current Rates with No Increases						
Revenue from Current Rates (a)	$107,566	$125,000	$125,000	$125,000	$125,000	$125,000
less Net Revenue Reqt's.	($414,356)	($287,858)	($325,226)	($351,079)	($359,372)	($368,595)
Year-End Surplus (Deficit)	($306,790)	($162,858)	($200,226)	($226,079)	($234,372)	($243,595)
Proposed Financial Plan - Sewer Rate Increases						
Rate Increases		20.0%	15.0%	15.0%	12.0%	10.0%
Revenue from Current Rates (a)	$107,566	$125,000	$125,000	$125,000	$125,000	$125,000
Rate Revenue from Rate Increases:						
		$25,000	$25,000	$25,000	$25,000	$25,000
			$22,500	$22,500	$22,500	$22,500
				$25,875	$25,875	$25,875
					$23,805	$23,805
						$22,218
Revenue from Rate Increases	**$0**	**$25,000**	**$47,500**	**$73,375**	**$97,180**	**$119,398**
Projected Rate Revenue (w/ Rate Increases)	$107,566	$150,000	$172,500	$198,375	$222,180	$244,398
less Net Revenue Reqt's.	($414,356)	($287,858)	($325,226)	($351,079)	($359,372)	($368,595)
Year-End Surplus (Deficit)	($306,790)	($137,858)	($152,726)	($152,704)	($137,192)	($124,197)

a. From Table SB-MID1, Sewer System Budget Projections and Revenue Requirements - Middletown Sanitation District.

Table SFP-MID2

Summary of Projected Sewer Reserve Fund Levels - Middletown Sanitation District

Lake County Special Districts

	Estimated	Projected Reserve Funds				
	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Sewer Operations Fund (Cash)						
Beginning Fund Balance	$449,034	$519,444	$381,585	$278,859	$176,155	$78,963
Sewer Rate Revenue Surplus (Deficit) *(a)*	$0	($137,858)	($152,726)	($152,704)	($137,192)	($124,197)
Transfers from CIP Fund	$0	$0	$50,000	$50,000	$40,000	$60,000
Year-End Fund Balance	**$449,034**	**$381,585**	**$278,859**	**$176,155**	**$78,963**	**$14,766**
Sewer Capital Improvement Fund (CIP)						
Beginning Fund Balance	$195,487	$195,487	$217,287	$185,987	$153,387	$129,487
Cap Fee Revenue	$0	$14,000	$10,000	$10,000	$10,000	$10,000
Transfer from Operations Fund	$0	$0	($50,000)	($50,000)	($40,000)	($60,000)
Investment Earnings	*NA*	$7,800	$8,700	$7,400	$6,100	$5,200
Year-End Fund Balance	**$195,487**	**$217,287**	**$185,987**	**$153,387**	**$129,487**	**$84,687**
Combined Sewer Funds Balance	**$644,521**	**$598,872**	**$464,846**	**$329,542**	**$208,450**	**$99,453**
General Inflation Escalator		*3.0%*	*3.0%*	*3.0%*	*3.0%*	*3.0%*
Interest Earnings Rate	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*	*4.0%*
Approx. Coverage Ratio (b)		*2067.0%*	*796.3%*	*433.2%*	*272.9%*	*129.5%*

a. From Table SFP-1, Sewer Utility Financial Plan - Middletown Sanitation District

b. Current year new debt service divided by year-end fund balance.

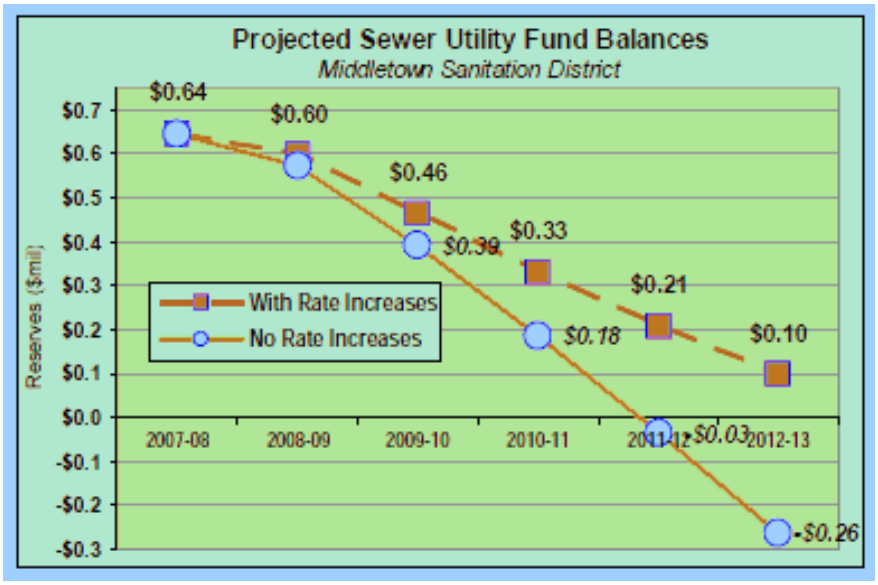


Table CA-MID1

Sewer Cost Allocations by Functional Component - Middletown Sanitation District *(FY'08-09)*

Lake County Special Districts

		Allocated Costs					Percent Allocations				
Sewer Operations Fund	2008-09 Budget *(a)*	Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related	Account/ Customer	Other Fixed	Flow-Related	BOD-Related	TSS-Related
Operating Expenditures											
Collection	$106,325	$0	$0	$106,325	$0	$0	0%	0%	100%	0%	0%
Treatment	$84,510	$0	$0	$59,157	$25,353	$0	0%	0%	70%	30%	0%
Disposal	$12,467	$0	$0	$11,220	$1,247	$0	0%	0%	90%	10%	0%
Admin	$86,843	$21,711	$8,684	$47,764	$8,684	$0	25%	10%	55%	10%	0%
Subtotals	$290,145	$21,711	$8,684	$224,466	$35,284	$0	7.5%	3.0%	77.4%	12.2%	0.0%
CIP Expenditures *(b)*											
Pay-As-You-Go *(Cash Funded)*	$0	$0	$0	$0	$0	$0	0%	0%	100%	0%	0%
Debt Funded *(Debt Service)*	$29,113	$0	$0	$23,291	$5,823	$0	0%	0%	80%	20%	0%
Subtotals	$29,113	$0	$0	$23,291	$5,823	$0	0.0%	0.0%	80.0%	20.0%	0.0%
Non-Rate Expenses											
less Other Revenue	($31,400)	($2,350)	($940)	($24,292)	($3,818)	$0	7.5%	3.0%	77.4%	12.2%	0.0%
Subtotals	($31,400)	($2,350)	($940)	($24,292)	($3,818)	$0	7%	3%	77%	12%	0%
Total System Revenue Reqt's.	**$287,858**	**$19,361**	**$7,745**	**$223,464**	**$37,288**	**$0**	6.7%	2.7%	77.6%	13.0%	0.0%
Fixed/Variable Allocations		*$27,106*		*$260,752*			*9.4%*		*90.6%*		

a. From Table SB-MID1, Sewer System Budget Projections and Revenue Requirements - Middletown

b. Allocations are based on the CIP projects shown in the Final CIP Worksheet from Special District Administration staff, 12-7-07, with Foresight revisions.

Table COS-MID1

Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Middletown Sanitation District *(FY'08-09)*

Lake County Special Districts

	Fixed Costs		Variable Costs			Total Rev. Req't.
	Customer	Other Fixed	Flow (a)	BOD Costs	TSS Costs	
Allocated Rev. Reqt's (a)	$10,089	$4,036	$116,445	$19,430	$0	$150,000
Customers, Flow & Loadings (b)						
No. of Accounts	481	--	--	--	--	--
No. of Accounts	--	481	--	--	--	--
Flow (hcf/yr)	--	--	63,436	--	--	--
BOD (lbs/yr)	--	--	--	85,878	--	--
TSS (lbs/yr)	--	--	--	--	--	--
Unit Costs ($/year/unit) (c)	**$20.97/acct.**	**$8.39/acct.**	**$1.836/hcf**	**$0.2263/lb.**	**$0.0000/lb.**	--

a. From Table CA-MID1, Sewer Cost Allocations by Functional Component - Middletown Sanitation District (FY'08-09).
b. From Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District (FY'08-09).
c. Allocated revenue requirement divided by the units of the flow or loading parameter.

Table COS-MID2

Revenue Requirements & Monthly Rates by Customer Class - Middletown Sanitation District *(FY'08-09)*

Lake County Special Districts

	Customer Costs			Other Fixed Costs			Flow-Related Costs		
Customer Classes	Number of Accounts (b)	Unit Cost $/Acct./2 mo.(c)	Annual Rev. Req't.(d)	Number of Acct's (b)	Unit Cost $/Acct/2 mo.(c)	Annual Rev. Req't.(d)	Effluent (hcf/yr) (e)	Unit Cost ($/hcf) (c)	Annual Rev. Req't.(d)
Residential (a)	433	$3.4958	$9,082	433	$1.3983	$3,633	55,421	$1.836	$101,733
Low-Strength Commercial									
1 Professional Office	23	$3.496	$482	23.0	$0.70	$193	3,397	$1.836	$6,235
2 Car Wash	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
3 Schools w/o Cafeteria	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
4 Laundromat	1	$3.496	$21	1.0	$0.70	$8	651	$1.836	$1,194
5 Beauty Shop	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
6 Dept./Small Retail	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
7 Theaters	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
Medium-Strength Commercial									
8 Schools w/ Cafeteria	3	$3.496	$63	3.0	$0.70	$25	484	$1.836	$888
9 Service Stations	1	$3.496	$21	1.0	$0.70	$8	917	$1.836	$1,683
10 Bars w/o Dining	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
11 Church/Fraternal/Clubhouse	5	$3.496	$105	5.0	$0.70	$42	986	$1.836	$1,810
12 Hospital/Conval. Home	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
13 Hotel/Motel w/o Dining	4	$3.496	$84	4.0	$0.70	$34	377	$1.836	$693
14 Misc. Commercial	6	$3.496	$126	6.0	$0.70	$50	657	$1.836	$1,207
High-Strength Commercial									
15 Hotel/Motel w/ Dining	1	$3.496	$21	1.0	$0.70	$8	108	$1.836	$198
16 Markets w/o grinders	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
17 Markets w/ grinders	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
18 Short Order/Take-out	0	$3.496	$0	0.0	$0.00	$0	0	$1.836	$0
19 Restaurants	4	$3.496	$84	4.0	$0.70	$34	438	$1.836	$805
Subtotal - Non-Resid.	48	--	$1,007	48.0	--	$403	8,015	--	$14,712
Total - Resid. & Non-Res.	481	--	$10,089	481.0	--	$4,036	63,436	--	$116,445

Table COS-MID2 (cont.)

Customer Classes	BOD-Related Costs: Units of BOD (lbs/yr) (e)	BOD-Related Costs: Unit Cost ($/lb) (c)	BOD-Related Costs: Annual Rev. Req't.(d)	TSS-Related Costs: Units of TSS (lbs/yr) (e)	TSS-Related Costs: Unit Cost ($/lb) (c)	TSS-Related Costs: Annual Rev. Req't.(d)	Summary of Costs: Cust. & Other Fixed (f)	Summary of Costs: Flow, BOD, & TSS (g)	Summary of Costs: Total Rev. Req't's.
Residential (a)	74,705	$0.2263	$16,902	--	--	--	$12,715	$118,635	$131,350
Low-Strength Commercial								($/hcf)	
1 Professional Office	2,834	$0.2263	$641	--	--	--	$675	$6,876	$7,552
2 Car Wash	0	$0.2263	$0	--	--	--	$0	$0	$0
3 Schools w/o Cafeteria	0	$0.2263	$0	--	--	--	$0	$0	$0
4 Laundromat	626	$0.2263	$142	--	--	--	$29	$1,336	$1,365
5 Beauty Shop	0	$0.2263	$0	--	--	--	$0	$0	$0
6 Dept./Small Retail	0	$0.2263	$0	--	--	--	$0	$0	$0
7 Theaters	0	$0.2263	$0	--	--	--	$0	$0	$0
Medium-Strength Commercial									
8 Schools w/ Cafeteria	528	$0.2263	$119	--	--	--	$88	$1,008	$1,096
9 Service Stations	1,059	$0.2263	$240	--	--	--	$29	$1,922	$1,952
10 Bars w/o Dining	0	$0.2263	$0	--	--	--	$0	$0	$0
11 Church/Fraternal/Clubhouse	1,329	$0.2263	$301	--	--	--	$147	$2,111	$2,258
12 Hospital/Conval. Home	0	$0.2263	$0	--	--	--	$0	$0	$0
13 Hotel/Motel w/o Dining	751	$0.2263	$170	--	--	--	$117	$863	$980
14 Misc. Commercial	886	$0.2263	$201	--	--	--	$176	$1,407	$1,583
High-Strength Commercial									
15 Hotel/Motel w/ Dining	346	$0.2263	$78	--	--	--	$29	$276	$305
16 Markets w/o grinders	0	$0.2263	$0	--	--	--	$0	$0	$0
17 Markets w/ grinders	0	$0.2263	$0	--	--	--	$0	$0	$0
18 Short Order/Take-out	0	$0.2263	$0	--	--	--	$0	$0	$0
19 Restaurants	2,813	$0.2263	$637	--	--	--	$117	$1,441	$1,559
Subtotal - Non-Resid.	11,173	–	$2,528	--	--	--	$1,410	$17,241	$18,650
Total - Resid. & Non-Res.	85,878	–	$19,430	--	--	--	$14,125	$135,875	$150,000

a. Represents all residential classes shown in Table COS-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District (FY'08-09).
b. From Special District Administration's billing records (see Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District).
c. From Table COS-MID1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Middletown Sanitation District (FY'08-09).
d. Units times unit costs.
e. From Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District.
f. Total annual Customer Costs and Other Fixed Costs.
g. Total annual revenue requirements per customer class excluding Customer Costs and Other Fixed Costs.

Table COS-MID2 (cont.)

Customer Classes	BOD-Related Costs: Units of BOD (lbs/yr) (e)	BOD-Related Costs: Unit Cost ($/lb) (c)	BOD-Related Costs: Annual Rev. Req't.(d)	TSS-Related Costs: Units of TSS (lbs/yr) (e)	TSS-Related Costs: Unit Cost ($/lb) (c)	TSS-Related Costs: Annual Rev. Req't.(d)	Summary of Costs: Cust. & Other Fixed (f)	Summary of Costs: Flow, BOD, & TSS (g)	Summary of Costs: Total Rev. Req't's.
Residential (a)	74,705	$0.2263	$16,902	--	--	--	$12,715	$118,635	$131,350
Low-Strength Commercial								($/hcf)	
1 Professional Office	2,834	$0.2263	$641	--	--	--	$675	$6,876	$7,552
2 Car Wash	0	$0.2263	$0	--	--	--	$0	$0	$0
3 Schools w/o Cafeteria	0	$0.2263	$0	--	--	--	$0	$0	$0
4 Laundromat	626	$0.2263	$142	--	--	--	$29	$1,336	$1,365
5 Beauty Shop	0	$0.2263	$0	--	--	--	$0	$0	$0
6 Dept./Small Retail	0	$0.2263	$0	--	--	--	$0	$0	$0
7 Theaters	0	$0.2263	$0	--	--	--	$0	$0	$0
Medium-Strength Commercial									
8 Schools w/ Cafeteria	528	$0.2263	$119	--	--	--	$88	$1,008	$1,096
9 Service Stations	1,059	$0.2263	$240	--	--	--	$29	$1,922	$1,952
10 Bars w/o Dining	0	$0.2263	$0	--	--	--	$0	$0	$0
11 Church/Fraternal/Clubhouse	1,329	$0.2263	$301	--	--	--	$147	$2,111	$2,258
12 Hospital/Conval. Home	0	$0.2263	$0	--	--	--	$0	$0	$0
13 Hotel/Motel w/o Dining	751	$0.2263	$170	--	--	--	$117	$863	$980
14 Misc. Commercial	886	$0.2263	$201	--	--	--	$176	$1,407	$1,583
High-Strength Commercial									
15 Hotel/Motel w/ Dining	346	$0.2263	$78	--	--	--	$29	$276	$305
16 Markets w/o grinders	0	$0.2263	$0	--	--	--	$0	$0	$0
17 Markets w/ grinders	0	$0.2263	$0	--	--	--	$0	$0	$0
18 Short Order/Take-out	0	$0.2263	$0	--	--	--	$0	$0	$0
19 Restaurants	2,813	$0.2263	$637	--	--	--	$117	$1,441	$1,559
Subtotal - Non-Resid.	11,173	–	$2,528	--	--	--	$1,410	$17,241	$18,650
Total - Resid. & Non-Res.	85,878	–	$19,430	--	--	--	$14,125	$135,875	$150,000

a. Represents all residential classes shown in Table COS-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District (FY'08-09).
b. From Special District Administration's billing records (see Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District).
c. From Table COS-MID1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Middletown Sanitation District (FY'08-09).
d. Units times unit costs.
e. From Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District.
f. Total annual Customer Costs and Other Fixed Costs.
g. Total annual revenue requirements per customer class excluding Customer Costs and Other Fixed Costs.

Table COS-MID3

Summary of Monthly Rates by Customer Class - Middletown Sanitation District *(FY'08-09)*

Lake County Special Districts

	Basic Charge (a)	Bi-Mo. Fixed Rate (b)		Volume Rates			
Residential	($/acct/2 mo.)	EDU Factor (c)	($/EDU/2 mo.)	Rev. Reqt. (d)	Water Use (e)	Vol. Rate (f)	Description
1 Single-Family	$4.89	100%	$39.09	--	--	--	
2 Duplex/Triplex/MH	$4.89	90%	$35.18	--	--	--	
3 Apartments	$4.89	70%	$27.36	--	--	--	
4 Trailer Space	$4.89	20%	$7.82	--	--	--	
5 Vacant	$4.89	0%	$0.00	--	--	--	
Low-Strength Commercial						($/hcf water use)	
1 Professional Office	$4.89	95%	$36.97	$6,876	4,852	$27.36	*1 EDU = 24 employees*
2 Car Wash	$4.89	87%	$34.05	$0	0	$2.79	*Based on Current EDU's*
3 Schools w/o Cafeteria	$4.89	95%	$36.97	$0	0	$3.03	*1 EDU = 40 students*
Schools w/o Cafeteria (per student)	--	--	$0.92	--	--	--	
4 Laundromat	$4.89	96%	$37.50	$1,336	938	$113.78	*1 machine = 1.25 EDU (or 1 EDU = 0.8 machines)*
5 Beauty Shop	$4.89	96%	$37.50	$0	0	$3.07	*1 EDU = 2 stations*
6 Dept./Small Retail	$4.89	96%	$37.50	$0	0	$3.07	*Based on Current EDU's*
7 Theaters	$4.89	96%	$37.50	$0	0	$3.07	*1 EDU = 100 seats*
Medium-Strength Commercial							
8 Schools w/ Cafeteria	$4.89	97%	$38.03	$1,008	691	$30.44	*1 EDU = 17 students*
Schools w/ Cafeteria (per student)	--	--	$1.52	--	--	--	
9 Service Stations	$4.89	98%	$38.30	$1,922	1,310	$162.65	*A 3-pump island = 1.67 EDU*
10 Bars w/o Dining	$4.89	99%	$38.83	$0	0	$3.18	*1 EDU = 15 seats*
11 Church/Fraternal/Clubhouse	$4.89	100%	$39.09	$2,111	1,409	$37.63	*1 EDU = 500 seats*
12 Hospital/Conval. Home	$4.89	103%	$40.15	$0	0	$4.94	*1 bed = 0.67 EDU*
13 Hotel/Motel w/o Dining	$4.89	107%	$41.74	$863	539	$20.42	*1 unit = 0.42 EDU's (or 1 EDU = 2.38 units)*
Hotel/Motel w/o Dining (per unit)	--	--	$17.53	--	--	--	
14 Misc. Commercial	$4.89	100%	$39.09	$1,407	939	$21.99	*Based on Current EDU's*
High-Strength Commercial							
15 Hotel/Motel w/ Dining	$4.89	120%	$46.78	$276	154	$25.45	*1 unit = 0.5 EDU's (or 1 EDU = 2.0 units)*
Hotel/Motel w/ Dining (per unit)	--	--	$15.44	--	--	--	
16 Markets w/o grinders	$4.89	124%	$48.37	$0	0	$3.97	*Based on Current EDU's*
17 Markets w/ grinders	$4.89	140%	$54.74	$0	0	$4.49	*Based on Current EDU's*
18 Short Order/Take-out	$4.89	133%	$52.09	$0	0	$4.27	*1 EDU = 70 seats*
Short Order/Take-out (per seat)	--	1.4%	$0.73	--	--	--	
19 Restaurants	$4.89	154%	$60.04	$1,441	626	$32.47	*1 EDU = 33 seats*
Restaurants (per seat over 33)	--	3%	$1.80	--	--	--	

a. Basic Charges are applied to each account, but not additional EDU's, and include customer and other fixed costs.
b. Represents all revenue requirements not included in the Basic Charge, and is charged based on the number of EDU's.
c. Shows the percent of a full Single-Family (or EDU) rate based on the amount of effluent and the wastewater strength (BOD and TSS).
d. Revenue requirements for Flow, BOD and TSS from Table COS-MID2, Revenue Requirements & Monthly Rates by Customer Class - Middletown Sanitation District (FY'08-09).
e. From Table COS-MID1, Total Flow, Loadings, Rev. Reqt's. & Unit Costs - Middletown Sanitation District (FY'08-09).
f. These are volume charges per hcf of water shown in Table L-MID1, Customer Accounts & Estimated Flow & Loadings - Middletown Sanitation District.

Table COS-MID4

Calculation of Commercial Bi-Monthly Fixed Rates Per EDU - Middletown Sanitation District *(FY'08-09)*

Lake County Special Districts

Customer Classes	EDU *(SFD's)*	Equivalent Treatment Factors *(a)*			Treatment Costs/EDU ($/2 mo.)*(b)*			Fixed Rate per EDU *(c)*
		Avg. hcf/EDU	BOD/EDU	TSS/EDU	Flow (hcf/yr)	BOD (lbs/yr)	TSS (lbs/yr)	
Residential	506	*100.0%*	*100.0%*	*100.0%*	*$33.52*	*$5.57*	--	*$39.09*
Low-Strength Commercial	3							
1 Professional Office		100.0%	61.9%	--	$33.52	$3.448	--	$36.97
2 Car Wash		100.0%	9.5%	--	$33.52	$0.530	--	$34.05
3 Schools w/o Cafeteria		100.0%	61.9%	--	$33.52	$3.448	--	$36.97
Schools w/o Cafeteria (per student)		100.0%	61.9%	--	$0.84	$0.086	--	$0.92
4 Laundromat		100.0%	71.4%	--	$33.52	$3.978	--	$37.50
5 Beauty Shop		100.0%	71.4%	--	$33.52	$3.978	--	$37.50
6 Dept./Small Retail		100.0%	71.4%	--	$33.52	$3.978	--	$37.50
7 Theaters		100.0%	71.4%	--	$33.52	$3.978	--	$37.50
Medium-Strength Commercial	119							
8 Schools w/ Cafeteria		100.0%	81.0%	--	$33.52	$4.509	--	$38.03
Schools w/ Cafeteria (per student)		100.0%	81.0%	--	$1.34	$0.180	--	$1.52
9 Service Stations		100.0%	85.7%	--	$33.52	$4.774	--	$38.30
10 Bars w/o Dining		100.0%	95.2%	--	$33.52	$5.304	--	$38.83
11 Church/Fraternal/Clubhouse		100.0%	100.0%	--	$33.52	$5.570	--	$39.09
12 Hospital/Conval. Home		100.0%	119.0%	--	$33.52	$6.630	--	$40.15
13 Hotel/Motel w/o Dining		100.0%	147.6%	--	$33.52	$8.222	--	$41.74
Hotel/Motel w/o Dining (per unit)		100.0%	147.6%	--	$14.08	$3.453	--	$17.53
14 Misc. Commercial		100.0%	100.0%	--	$33.52	$5.570	--	$39.09
High-Strength Commercial	6							
15 Hotel/Motel w/ Dining		100.0%	238.1%	--	$33.52	$13.261	--	$46.78
Hotel/Motel w/ Dining (per unit)		100.0%	238.1%	--	$11.06	$4.376	--	$15.44
16 Markets w/o grinders		100.0%	266.7%	--	$33.52	$14.852	--	$48.37
17 Markets w/ grinders		100.0%	381.0%	--	$33.52	$21.217	--	$54.74
18 Short Order/Take-out		100.0%	333.3%	--	$33.52	$18.565	--	$52.09
Short Order/Take-out (per seat)		100.0%	333.3%	--	$0.47	$0.260	--	$0.73
19 Restaurants		100.0%	476.2%	--	$33.52	$26.522	--	$60.04
Restaurants (per seat over 33)		100.0%	476.2%	--	$1.01	$0.796	--	$1.80

a. This is the percentage of residential effluent flow and strength and is used to determine the fixed rate for each commercial customer. The BOD and TSS factors reflect the BOD and TSS differences between each commercial class and the residential class.
b. Based on the *"Equivalent Treatment Factor"*, this is the cost per unit for flow, BOD and TSS that goes into the fixed rate.
c. The bi-monthly charge is the sum of the *"Treatment Costs/EDU"* for flow, BOD and TSS.

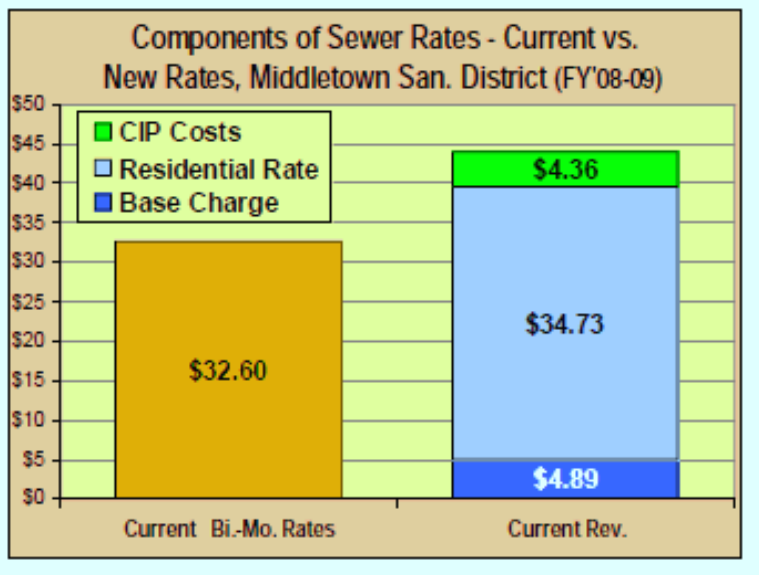


Table PR-MID1

Summary of Recommended Sewer Rates - Middleton Sanitation District

Lake County Special Districts

	Current Charges[a] (bi-monthly)		Projected New Bi-Monthly Sewer Rates [c]											
			2008-09 [b]			2009-10		2010-11		2011-12		2012-13	
Residential	Basic Charge	Ratio/Add'l	Basic Charge	Fixed Rate	Fixed Rate Unit	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate	Basic Charge	Fixed Rate
Single-Family	$32.60	$32.60	$4.89	$39.09	dwelling	$5.63	$44.96	$6.47	$51.70	$7.25	$57.90	$7.97	$63.69
Duplex/Triplex/Mobile Home	$32.60	$32.60	$4.89	$35.18	unit	$5.63	$40.46	$6.47	$46.53	$7.25	$52.11	$7.97	$57.32
Apartments	$32.60	$32.60	$4.89	$27.36	apartment	$5.63	$31.47	$6.47	$36.19	$7.25	$40.53	$7.97	$44.58
Trailer Space w/hook-up	$32.60	$5.05	$4.89	$7.82	space	$5.63	$8.99	$6.47	$10.34	$7.25	$11.58	$7.97	$12.74
Low-Strength Commercial													
Professional Office	$65.20	$1.42	$4.89	$36.97	EDU's	$5.63	$42.52	$6.47	$48.89	$7.25	$54.76	$7.97	$60.24
Car Wash	NA	NA	$4.89	$34.05	EDU's	$5.63	$39.16	$6.47	$45.03	$7.25	$50.44	$7.97	$55.48
Schools w/o Cafeteria	NA	NA	$4.89	$36.97	EDU's	$5.63	$42.52	$6.47	$48.89	$7.25	$54.76	$7.97	$60.24
Schools w/o Cafeteria (per student)	NA	NA	--	$0.92	students	--	$1.06	--	$1.22	--	$1.37	--	$1.51
Laundromat	$65.20	$25.60	$4.89	$37.50	EDU's	$5.63	$43.13	$6.47	$49.59	$7.25	$55.55	$7.97	$61.10
Beauty Shop	$65.20	$34.30	$4.89	$37.50	EDU's	$5.63	$43.13	$6.47	$49.59	$7.25	$55.55	$7.97	$61.10
Dept./Small Retail	$65.20	NA	$4.89	$37.50	EDU's	$5.63	$43.13	$6.47	$49.59	$7.25	$55.55	$7.97	$61.10
Theaters	$65.20	$1.04	$4.89	$37.50	EDU's	$5.63	$43.13	$6.47	$49.59	$7.25	$55.55	$7.97	$61.10
Medium-Strength Commercial													
Schools w/ Cafeteria	$65.20	$65.20	$4.89	$38.03	EDU's	$5.63	$43.74	$6.47	$50.30	$7.25	$56.33	$7.97	$61.96
Schools w/ Cafeteria (per student)	NA	$2.30	--	$1.52	students	--	$1.75	--	$2.01	--	$2.25	--	$2.48
Service Stations	$65.20	$65.20	$4.89	$38.30	EDU's	$5.63	$44.04	$6.47	$50.65	$7.25	$56.72	$7.97	$62.40
Bars w/o Dining	$65.20	NA	$4.89	$38.83	EDU's	$5.63	$44.65	$6.47	$51.35	$7.25	$57.51	$7.97	$63.26
Church/Fraternal/Clubhouse	NA	$33.40	$4.89	$39.09	EDU's	$5.63	$44.96	$6.47	$51.70	$7.25	$57.90	$7.97	$63.69
Hospital/Conval. Home	$65.20	$26.10	$4.89	$40.15	EDU's	$5.63	$46.18	$6.47	$53.10	$7.25	$59.47	$7.97	$65.42
Hotel/Motel w/o Dining	$65.20	$65.20	$4.89	$41.74	EDU's	$5.63	$48.01	$6.47	$55.21	$7.25	$61.83	$7.97	$68.01
Hotel/Motel w/o Dining (per unit)	NA	$5.30	--	$17.53	unit	--	$20.16	--	$23.19	--	$25.97	--	$28.57
Misc. Commercial	$65.20	$65.20	$4.89	$39.09	EDU's	$5.63	$44.96	$6.47	$51.70	$7.25	$57.90	$7.97	$63.69
High-Strength Commercial													
Hotel/Motel w/ Dining	$65.20	$65.20	$4.89	$46.78	EDU's	$5.63	$53.80	$6.47	$61.87	$7.25	$69.29	$7.97	$76.22
Hotel/Motel w/ Dining (per unit)	NA	$6.50	--	$15.44	unit	--	$17.75	--	$20.42	--	$22.87	--	$25.15
Markets w/o grinders	NA	NA	$4.89	$48.37	EDU's	$5.63	$55.63	$6.47	$63.97	$7.25	$71.65	$7.97	$78.82
Markets w/ grinders	NA	NA	$4.89	$54.74	EDU's	$5.63	$62.95	$6.47	$72.39	$7.25	$81.08	$7.97	$89.19
Short Order/Take-out	$65.20	$65.20	$4.89	$52.09	EDU's	$5.63	$59.90	$6.47	$68.89	$7.25	$77.15	$7.97	$84.87
Short Order/Take-out (per seat)	NA	NA	--	$0.73	seat	--	$0.84	--	$0.96	--	$1.08	--	$1.19
Restaurants	$65.20	$65.20	$4.89	$60.04	EDU's	$5.63	$69.05	$6.47	$79.41	$7.25	$88.94	$7.97	$97.83
Restaurants (per seat over 33)	NA	NA	--	$1.80	seat	--	$2.07	--	$2.38	--	$2.67	--	$2.93
Financial Plan Rate Increase	--	--	*20.0%*			*15.0%*		*15.0%*		*12.0%*		*10.0%*	

a: From Lake County current rate codes and ordinances.

b: Basic charges are applied per account, while the fixed rate is per unit as shown. From Table COS-MID3, Summary of Monthly Rates by Customer Class - Middletown District (FY'08-09).

c: Projected rates in 2009-10 and later are calculated using the 2008-09 rates and the "Financial Plan Rate Increase" shown at the bottom of the table.

APPENDIX B LOCAL GOVERNMENT ISSUES

1 Municipal Financial Constraints

Municipal service providers are constrained in their capacity to finance services by the inability to increase property taxes, requirements for voter approval for new or increased taxes, and requirements of voter approval for parcel taxes and assessments used to finance services. Municipalities must obtain majority voter approval to increase or impose new general taxes and two-thirds voter approval for special taxes.

Limitations on property tax rates and increases in taxable property values are financing constraints. Property tax revenues are subject to a formulaic allocation and are vulnerable to State budget needs. Agencies formed since the adoption of Proposition 13 in 1978 often lack adequate financing.

1.1 California Local Government Finance Background

The financial ability of the cities to provide services is affected by financial constraints. City service providers rely on a variety of revenue sources to fund city operating costs as follows:

- Property Taxes
- Benefit Assessments
- Special Taxes
- Proposition 172 Funds
- Other contributions from city general funds

As a funding source, property taxes are constrained by statewide initiatives that have been passed by voters over the years and special legislation. Seven of these measures are explained below:

A. Proposition 13

Proposition 13 (which California voters approved in 1978) has the following three impacts:

- It limits the ad valorem property tax rate.
- It limits growth of the assessed value of property.
- It requires voter approval of certain local taxes.

Generally, this measure fixes the ad valorem tax at one percent of the value at most recent sale; except for taxes to repay certain voter approved bonded indebtedness. In response to the adoption of Proposition 13, the Legislature enacted Assembly Bill 8 (AB 8) in 1979 to establish property tax allocation formulas.

B. AB 8

AB 8 allocates property tax revenue to the local agencies within each tax rate area based on the proportion each agency received during the three fiscal years preceding adoption of Proposition 13. This allocation formula benefits local agencies which had relatively high tax rates at the time Proposition 13 was enacted (1978).

C. Proposition 98

Proposition 98, which California voters approved in 1988, requires the State to maintain a minimum level of school funding. In 1992 and 1993, the Legislature began shifting billions of local property taxes to schools in response to State budget deficits. Local property taxes were diverted from local governments into the Educational Revenue Augmentation Fund (ERAF) and transferred to school districts and community college districts to reduce the amount paid by the State general fund. Local agencies throughout the State lost significant property tax revenue due to this shift. Proposition 172 was enacted to help offset property tax revenue losses of cities and counties that were shifted to the ERAF for schools in 1992.

D. Proposition 172

Proposition 172, enacted in 1993, provides the revenue of a half-cent sales tax to counties and cities for public safety purposes, including police, fire, district attorneys, corrections and lifeguards. Proposition 172 also requires cities and counties to continue providing public safety funding at or above the amount provided in FY 92-93.

E. Proposition 218

Proposition 218, which California voters approved in 1996, requires voter- or property owner-approval of increased local taxes, assessments, and property-related fees. A two-thirds affirmative vote is required to impose a Special Tax, for example, a tax for a specific purpose such as a fire district special tax.

However, majority voter approval is required for imposing or increasing general taxes such as business license or utility taxes, which can be used for any governmental purpose.
These requirements do not apply to user fees, development impact fees and Mello-Roos districts.

F. Mello-Roos Community Facilities Act

The Mello-Roos Community Facilities Act of 1982 allows any county, city, special district, school district or joint powers authority to establish a Mello-Roos Community Facilities District (a "CFD") which allows for financing of public improvements and services.

The services and improvements that Mello-Roos CFDs can finance include streets, sewer systems and other basic infrastructure, police protection, fire protection, ambulance services, schools, parks, libraries, museums and other cultural facilities. By law, the CFD is also entitled to recover expenses needed to form the CFD and administer the annual special taxes and bonded debt.

A CFD is created by a sponsoring local government agency. The proposed district will include all properties that will benefit from the improvements to be constructed or the services to be provided. A CFD cannot be formed without a two-thirds majority vote of residents living within the proposed boundaries. Or, if there are fewer than 12 residents, the vote is instead conducted of current landowners.

In many cases, that may be a single owner or developer. Once approved, a Special Tax Lien is placed against each property in the CFD. Property owners then pay a Special Tax each year. If the project cost is high, municipal bonds will be sold by the CFD to provide the large amount of money initially needed to build the improvements or fund the services.

The Special Tax cannot be directly based on the value of the property. Special Taxes instead are based on mathematical formulas that take into account property characteristics such as use of the property, square footage of the structure and lot size. The formula is defined at the time of formation, and will include a maximum special tax amount and a percentage maximum annual increase.

If bonds were issued by the CFD, special taxes will be charged annually until the bonds are paid off in full. Often, after bonds are paid off, a CFD will continue to charge a reduced fee to maintain the improvements.

G. Development Impact Fees

A county, cities, special districts, school districts, and private utilities may impose development impact fees on new construction for purposes of defraying the cost of putting in place public infrastructure and services to support new development.

To impose development impact fees, a jurisdiction must justify the fees as an offset to the impact of future development on facilities. This usually requires a special financial study. The fees must

be committed within five years to the projects for which they were collected, and the district, city or county must keep separate funds for each development impact fee.

1.2 Financing Opportunities that Require Voter Approval

Financing opportunities that require voter approval include the following:
1) Special taxes such as parcel taxes
2) Increases in general taxes such as the following:
   - Utility taxes
   - Sales and use taxes
   - Business license taxes
   - Transient occupancy taxes

Communities may elect to form business improvement districts to finance supplemental services, or Mello-Roos districts to finance development-related infrastructure extension. Agencies may finance facilities with voter-approved (general obligation) bonded indebtedness.

1.3 Financing Opportunities that Do Not Require Voter Approval

Financing opportunities that do not require voter approval include imposition of or increases in fees to more fully recover the costs of providing services, including user fees and Development Impact Fees to recover the actual cost of services provided and infrastructure.

Development Impact Fees and user fees must be based on reasonable costs, and may be imposed and increased without voter approval. Development Impact Fees may not be used to subsidize operating costs.

Agencies may also finance many types of facility improvements through bond instruments that do not require voter approval.

Water rates and rate structures are not subject to regulation by other agencies. Utility providers may increase rates annually, and often do so. Generally, there is no voter approval requirement for rate increases, although notification of utility users is required. Water providers must maintain an enterprise fund for the respective utility separate from other funds, and may not use revenues to finance unrelated governmental activities.

2 Public Management Standards

While public sector management standards do vary depending on the size and scope of an organization, there are minimum standards. Well-managed organizations do the following eight activities:
1) Evaluate employees annually.
2) Prepare a budget before the beginning of the fiscal year.
3) Conduct periodic financial audits to safeguard the public trust.
4) Maintain current financial records.
5) Periodically evaluate rates and fees.
6) Plan and budget for capital replacement needs.
7) Conduct advance planning for future growth.
8) Make best efforts to meet regulatory requirements.

Most of the professionally managed and staffed agencies implement many of these best management practices. LAFCO encourages all local agencies to conduct timely financial record-keeping for each city function and make financial information available to the public.

3 Public Participation in Government

The Brown Act (California Government Code Section 54950 et seq.) is intended to insure that public boards shall take their actions openly and that deliberations shall be conducted openly. The Brown Act establishes requirements for the following:

- Open meetings
- Agendas that describe the business to be conducted at the meeting
- Notice for meetings
- Meaningful opportunity for the public to comment

Few exceptions for meeting in closed sessions and reports of items discussed in closed sessions.

According to California Government Section 54959

Each member of a legislative body who attends a meeting of that legislative body where action is taken in violation of any provision of this chapter, and where the member intends to deprive the public of information to which the member knows or has reason to know the public is entitled under this chapter, is guilty of a misdemeanor.

Section 54960 states the following:

(a) The district attorney or any interested person may commence an action by mandamus, injunction or declaratory relief for the purpose of stopping or preventing violations or threatened violations of this chapter by members of the legislative body of a local agency or to determine the applicability of this chapter to actions or threatened future action of the legislative body,...

ABBREVIATIONS

AB	Assembly Bill
AD	Assessment District
ADWF	Average Dry Weather Flows
AWWA	American Water Works Association
AWWF	Average Wet Weather Flows
BOD	Biological Oxygen Demand
CDO	Cease and Desist Order
CEQA	California Environmental Quality Act
CIP	Capital Improvement Program
CKH Act	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CLMSD	City of Lakeport Municipal Services District
CLOWD	Clearlake Oaks County Water District
CPI	Consumer Price Index
CSD	County Service Area
CSD	Community Service District
CVRWQCB	Central Valley Regional Water Quality Control Board
CWPCA	California Water Pollution Control Association
District	LACOSAN
EPA	Environmental Protection Agency (US)
FOG	fat, oil and grease
FY	Fiscal Year
gpd	gallons per day
gpm	gallons per minute
HVLCSD	Hidden Valley Lake Community Services District
I&I	Inflow and Infiltration
JOC	Joint Operating Committee
KCWD	Kelseyville County Waterworks District #3
LACOSAN	Lake County Sanitation District
LAFCO	Local Agency Formation Commission
LAIF	Local Agency Investment Fund
LCEHD	Lake County Environmental Health Department
mgd	Million Gallons per Day

MSR	Municipal Service Review (LAFCO)
MW	Mega-Watts
MWh	mega-watt hours
NCPA	Northern California Power Agency
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NW	Northwest
NWRTP	Northwest Regional Treatment Plant
O&M	Operation and Maintenance
PDF	peak day flow
pH	A measure of acidity
PHF	peak hour flow
PG&E	Pacific Gas & Electric Company
PMF	peak month flow
R&R	Repair and Replacement Fund
RUE	Residential Unit Equivalent
RWQCB	Regional Water Quality Control Board (California)
SCADA	Supervisory Control and Data Acquisition System
SCFs	System Capacity Fees
SDA	Special Districts Administration (Lake County)
SE	Southeast
SEGEP	Southeast Geysers Effluent Pipeline
SERTP	Southeast Regional Treatment Plant
SFD	Single-Family Dwelling Unit
SOI	Sphere of Influence (LAFCO)
SRF	State Revolving Loan Fund
SSMP	Sewer System Master Plan
STEP	Septic Tank Effluent Pump
TSS	Total Suspended Solids
US	United States
WDR	Waste Discharge Requirement
WTP	Wastewater Treatment Plant

DEFINITIONS

Aquifer: An underground, water-bearing layer of earth, porous rock, sand, or gravel, through which water can seep or be held in natural storage. Aquifers generally hold sufficient water to be used as a water supply.

Average base flow (ABF): Flow in the sanitary sewer during dry-weather months, measured when no appreciable rain is falling. Base flow consists of sanitary flow plus groundwater infiltration.

Average dry-weather flow (ADWF): The 30-day rolling average wastewater flow from May through October.

Average wet-weather flow (AWWF): The 30-day rolling average wastewater flow from November through April.

Bond: An interest-bearing promise to pay a stipulated sum of money, with the principal amount due on a specific date. Funds raised through the sale of bonds can be used for various public purposes.

Capital Improvements Program (CIP): A program established by a Public Agency and reviewed by the Governing Body which schedules permanent improvements, usually for a minimum of five years in the future, to fit the projected fiscal capability of the City. The Program generally is reviewed annually, for conformance to and consistency with the General Plan.

California Environmental Quality Act (CEQA): A State Law requiring State and local agencies to regulate activities with consideration for environmental protection. If a proposed activity has the potential for a significant adverse environmental impact, an environmental impact report (EIR) must be prepared and certified as to its adequacy before taking action on the proposed project.

Community Facilities District: Under the Mello-Roos Community Facilities Act of 1982 (Section 53311, et seq.) a legislative body may create within its jurisdiction a special tax district that can finance tax-exempt bonds for the planning, design, acquisition, construction, and/or operation of public facilities, as well as public services for district residents. Special taxes levied solely within the district are used to repay the bonds.

Community Services District (CSD): A geographic subarea of a county used for planning and delivery of parks, recreation, and other human services based on an assessment of the service needs of the population in that subarea. A CSD is a taxation district with independent administration.

Crown (of the sewer): The upper portion of the sewer pipes.

Design flow: The selected flow condition for wastewater collection system design, determined by adding corresponding peak sanitary flow and peak groundwater infiltration. This is also referred to as peak dry-weather flow.

Design storm: An abstraction based on historical data that determines the amount of stormwater inflow and rainfall-dependent infiltration.

Dry-weather flow: Wastewater flow monitored during the dry season, occurring May through October which consists of sanitary flow and groundwater infiltration.

Excessive infiltration and inflow: The quantities of infiltration inflow that can be economically eliminated from a wastewater collection system by rehabilitation, as determined by a cost-effective analysis.

Groundwater: Water under the earth's surface, often confined to aquifers capable of supplying wells and springs.

Groundwater infiltration: Infiltration that enters pipeline and manhole defects located below the groundwater table. Groundwater infiltration is at a maximum during wet weather and might drop to near zero in the dry months.

House connection sewer: A sewer, within the public street or right-of-way, proposed to connect any parcel, lot, or part of a lot with a mainline sewer. This sewer has also been referred to as a lower lateral.

House sewer: A sewer, wholly within private property, proposed to connect any building to a house connection sewer. This sewer has also been referred to as an upper lateral.

Impact Fee: A fee, also called a development fee, levied on the developer of a project by a county, or other public agency as compensation for otherwise-unmitigated impacts the project will produce. California Government Code Section 66000, et seq., specifies that development fees shall not exceed the estimated reasonable cost of providing the service for which the fee is charged. To lawfully impose a development fee, the public agency must verify its method of calculation and document proper restrictions on use of the fund.

Infiltration: The water entering a sewer system and service connections from the ground, through such means as, but not limited to, defective pipes, pipe joints, connections, or manhole walls. Infiltration does not include, and is distinguished from, inflow.

Infiltration and inflow (I&I): The collective term used to describe the extraneous flow in a wastewater collection system from either rainfall-dependent infiltration and inflow or groundwater infiltration.

Infiltration and inflow analysis: An engineering and, if appropriate, an economic analysis demonstrating possible excessive or nonexcessive infiltration and inflow.

Inflow: The water discharged into a sewer system, including service connections, from such sources as, but not limited to, roof leaders, cellar, yard and area drains, foundation drains, cooling water discharges, drains from springs and swampy areas, maintenance hole covers, cross connections from storm sewers and combined sewers, catch basins, storm sewers, surface runoff, street wash waters, or drainage. Inflow does not include, and is distinguished from, infiltration.

Infrastructure: Public services and facilities such as sewage-disposal systems, water-supply systems, and other utility systems, schools and roads.

Invert: The lower interior portion of the sewer pipe. Also, the bottom portion of the manhole structure used to convey wastewater from one pipe segment to another.

Local Agency Formation Commission (LAFCO): A five-or seven-member commission within each county that reviews and evaluates all proposals for formation of special districts, incorporation of cities, annexation to special districts or cities, consolidation of districts, and merger of districts with cities. Each county's LAFCO is empowered to approve, disapprove, or conditionally approve such proposals. The LAFCO members generally include two county

supervisors, two city council members, and one member representing the general public. Some LAFCOs include two representatives of special districts.

Megawatt Hour (MWh): One thousand kilowatt-hours or an amount of electricity that would supply the monthly power needs of 1,000 typical homes in the Western U.S. (This is a rounding up to 8,760 kWh/year per home based on an average of 8,549 kWh used per household per year [U.S. DOE EIA, 1997 annual per capita electricity consumption figures]).

Peak-day flow (PDF): The maximum daily flow occurring during the calendar. Typically occurs during wet-weather events and can also be referred to as peak wet-weather flow.

Peak dry-weather flow (PDWF): Peak daily sanitary flow plus groundwater infiltration.

Peak hourly dry-weather flow (PHDWF): Peak hourly sanitary flow plus groundwater infiltration.

Peak hourly wet-weather flow (PHWWF): Peak hourly wet-weather flow plus peak rainfall-dependent infiltration and inflow from rainfall events. This value was estimated by multiplying the peak wet-weather flow by a factor of 1.3.

Peak wet-weather flow (PWWF): Peak daily wet-weather flow plus peak rainfall-dependent infiltration and inflow from rainfall events.

Peaking Factor: The ratio of peak hourly wet-weather flow to base flow.

Physical survey: An activity of the Sewer System Evaluation Survey. This activity involves determining specific flow characteristics, groundwater levels, and physical condition of the sewer system that had previously been determined to contain possibly excessive infiltration and inflow.

Preparatory cleaning: An activity of the Sewer System Evaluation Survey. This activity involves adequate cleaning of sewer lines prior to inspection. These sewers were previously identified as potential sections of excessive infiltration and inflow.

Rainfall-dependent infiltration (RDI): Rainfall runoff that indirectly enters a sewer system and service connections during and shortly after a rainfall event through such sources as, but not limited to, defective pipes, pipe joints, connections, and manholes.

Rainfall-dependent infiltration and inflow (RDI&I): Rainfall runoff from both infiltration and inflow sources that enters the wastewater collection system during and shortly after a rain event. RDI&I consists of stormwater inflow and rainfall-dependent infiltration.

Sanitary flow: Wastewater flow generated by residential, commercial, and industrial (including institutional) users. It does not include infiltration and inflow.

Sanitary Sewer: A sanitary sewer system is comprised of pipes, pump stations, manholes, and other facilities that convey untreated wastewater from the various sources around the County to treatment facilities.[104]

Septic System: A sewage-treatment system that includes a settling tank through which liquid sewage flows and in which solid sewage settles and is decomposed by bacteria in the absence of oxygen. Septic systems are often used for individual-home waste disposal where an urban sewer system is not available.

[104] Lake County, General Plan 2008, Page 5-2.

Service lateral: A sewer connecting a building or house to the mainline sewer.

Sewage: Sewage is the liquid waste from toilets, baths, showers, kitchens, etc. that is disposed of via sewers. In many areas sewage also includes some liquid waste from industry and commerce.

Sewage (or domestic wastewater) treatment: Sewage treatment is the process of removing contaminants from sewage. It includes physical, chemical and biological processes to remove physical, chemical and biological contaminants. Its objective is to produce a waste stream (or treated effluent) and a solid waste or sludge also suitable for discharge or reuse back into the environment. This material is often inadvertently contaminated with toxic organic and inorganic compounds.

Sewer Information Maintenance and Management System (SIMMS): A computer program that provides a means of tracking and organizing sewer maintenance schedules.

Sewer System Evaluation Survey: A systematic detailed examination of a sewer system that determines for each defined source of infiltration and inflow a specific location, quantity of flow, method of rehabilitation, and cost of rehabilitation versus cost of transportation and treatment. The elements of this program include flow monitoring, manhole and building inspection, storm sewer flooding, smoke testing, cleaning and internal inspection of the sanitary sewer system, and identification of all sources of infiltration and inflow.

Sewer System Rehabilitation Program: The rehabilitation and repair work necessary for the elimination of excessive infiltration and inflow. Elements considered in this program include grouting of sewer joints and laterals, lining of sewer lines/laterals, re-laying of sewer lines/laterals, grouting/replacement of manholes, and removal of direct connections such as roof leaders, sump pumps, and catch basins.

Single-family dwelling (SFD) unit equivalent: A unit of measure equal to 210 gallons per day, used to standardize the amount of wastewater generated by a single-family residence.

Sludge is the residual semi-solid material left from wastewater treatment processes. When fresh sewage or wastewater is added to a settling tank, approximately 50% of the suspended solid matter will settle out in about an hour and a half. This collection of solids is known as raw sludge or primary solids and is said to be "fresh" before anaerobic processes become active. Once anaerobic bacteria take over, the sludge will become putrescent in a short time and must be removed from the sedimentation tank before this happens.

Sphere of Influence (SOI): The probable physical boundaries and service area of a local agency, as determined by the Local Agency Formation Commission (LAFCO) of the county.

Stormwater inflow: Rainfall runoff that enters the wastewater collection system through direct connections such as catch basins, downspouts, and area drains.

Surcharge: A condition occurring in sewers when flows exceeding the sewer's capacity are imposed on the system, causing the hydraulic grade line to rise above the sewer crown.

System Analysis Model: A computer program used to model a sanitary sewer system for various flow conditions.

Terminal pump station (PS): A pump station that discharges into a force main that conveys flow directly to the Wastewater Treatment Plant.

Urban: Of, relating to, characteristic of, or constituting a city. Urban areas are generally characterized by moderate and higher density residential development (i.e., three or more

dwelling units per acre), commercial development, and industrial development, and the availability of public services required for that development, specifically central water and sewer service, an extensive road network, public transit, and other such services (e.g., safety and emergency response). Development not providing such services may be "non-urban" or "rural". CEQA defines "urbanized area" as an area that has a population density of at least 1,000 persons per square mile (Public Resources Code Section 21080.14(b)).

Urban Services: Utilities (such as water, gas, electricity, and sewer) and public services (such as police, fire protection, schools, parks, and recreation) provided to an urbanized or urbanizing area.

Wastewater: Wastewater is sewage (either treated or untreated) from residential, commercial, industrial, and institutional sources.[105]

Wastewater Collection System: The totality of the pipes, pump stations, manholes, and other facilities that convey untreated wastewater from the various sources within the County.[106]

Wastewater flow: Total flow within the wastewater collection system, consisting of both sanitary flow and infiltration and inflow.

Wet-weather flow: Flow monitored during the rainy season, occurring November through April. Includes sanitary flow, groundwater infiltration, and rainfall-dependent infiltration and inflow.

[105] Lake County, General Plan 2008, Page 5-2.
[106] Lake County, General Plan 2008, Page 5-2.

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