

**LAKE
LOCAL AGENCY FORMATION COMMISSION**

**MUNICIPAL SERVICE REVIEW
AND
SPHERE OF INFLUENCE**

**CLEARLAKE OAKS
COUNTY WATER DISTRICT**

**ADOPTED
JULY 17, 2013**

*Resolution 2013-0008 Municipal Service Review
Resolution 2013-0009 Sphere of Influence*

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1 INTRODUCTION

This Municipal Service Review is prepared for the Clearlake Oaks County Water District (CLOCWD) in Lake County. The District provides domestic water and wastewater collection and treatment services. The Municipal Service Review (MSR) includes the following information:

- LAFCO requirements for MSRs
- Clearlake Oaks Area background
- Description of water and wastewater collection and treatment services provided by Clearlake Oaks County Water District
- Analysis of Clearlake Oaks County Water District's capability to serve existing and future residents in the area

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 (OPR) has issued Guidelines for the preparation of an MSR. This MSR adheres to the procedures set forth in OPR's MSR Guidelines and Lake LAFCO's "Local Procedural Guidelines for Municipal Service Reviews" January 2008.

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 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

Effective January 1, 2008, Government Code §56430 requires LAFCO to conduct a review of municipal services provided in the county by region, sub-region or other designated geographic area, as appropriate, and prepare a written statement of determination with respect to the following six topics:

1. Growth and population projections for the affected area
2. The location and characteristics of any disadvantaged unincorporated communities (DUC) within or contiguous to the sphere of influence
3. Present and planned capacity of public facilities and adequacy of public services, (including infrastructure needs or deficiencies)
4. Financial ability of agencies to provide services
5. Status of, and opportunities for, shared facilities

6. Accountability for community service needs (including governmental structure and operational efficiencies)

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. These 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 from the summer of 2012 through spring of 2013. 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 Lake LAFCO prepared the MSR document, LAFCO did not engage the services of experts in engineering, biology, chemistry, accounting, hydrology, geology, water law, fire protection, or other specialists in related fields, but relied upon reports and Lake County and Clearlake Oaks County Water District 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 the Clearlake Oaks County Water District service area.

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. Local MSR policies have been adopted by the Lake LAFCO. 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 Clearlake Oaks County Water District

and the Spheres of Influence. The Sphere of Influence review or update that follows has not been approved or adopted by LAFCO.

This MSR is funded in the Lake LAFCO 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 does not include the preparation of an environmental review document.

2 CLEARLAKE OAKS COMMUNITY

2.1 Clearlake Oaks Overview

The Clearlake Oaks County Water District (CLOCWD) is located in Lake County along the eastern shore of Clear Lake. Clearlake Oaks is a recreation-oriented community occupying three square miles. There were 2,402 residents in 2004 which increased to 2,759 in 2007.¹ The population increases during the summer months. The Lake County General Plan 2008 describes the community as follows:

Clearlake Oaks, which began as a lakefront subdivision in the 1920s, is located on the east shore of Clear Lake, adjacent to Highway 20. The community contains a variety of single-family housing, lodging, restaurants, and retail shops.

The community also has two County parks as a point of interest (Clearlake Oaks Beach County Park & Nylander Park), and two campgrounds at nearby Stubbs Island. County Parks:

- *Clearlake Oaks Beach County Park (offers picnicking, swimming and a boat launch facility).*
- *Nylander Park*
- *Clarks Island*

Educational services are provided by Konocti Unified School District, which operates nine public schools including four elementary schools, one middle school, and three alternative schools. One elementary school is located within the community.

The Clearlake Oaks County Oaks Water District provides municipal water and sewer services within the community. Water source is surface water supplied from Clear Lake and its tributaries. Clearlake Oaks is within the Shoreline Water Inventory Unit, described in the Shoreline Communities Area Plan.

Points of Interest:

- *Clearlake Oaks Beach County Park*
- *Sulphur Bank Mercury Mine (an inactive mercury mine that is a U.S. Environmental Protection Agency Superfund cleanup site)*
- *Adjacent vineyards and wineries²*

¹ Lake County General Plan Page 2-3.
<http://www.co.lake.ca.us/Assets/CDD/2008+General+Plan+Final+Version/2008+General+Plan+Docs/CH2.pdf>, June 16, 2010.

² Lake County General Plan Page 2-3.
<http://www.co.lake.ca.us/Assets/CDD/2008+General+Plan+Final+Version/2008+General+Plan+Docs/CH2.pdf>, June 16, 2010.

2.2 Clearlake Oaks Background

The original town-site of Clearlake Oaks, inland from State Highway 20, was subdivided in the 1920s. Situated in a broad canyon mouth, the original town-site is about 4 blocks long and three deep, triangular in shape, with a plaza site in its center. Today the plaza is paved and used for parking by the church and the Oaks Senior Center located along the west side. Most of the homes in the village remain true to their "fishing cottage" roots.

Later additions include hundreds of small lots along narrow roads running along the contours of the hills above town. Though the oldest home may be the 1930's rock house on Lakeview, most homes date from the 1960s and include popular vacation home styles, such as A-frames. Many homes have outstanding views of Clearlake.

The next addition was across State Highway 20. The Keys, a neighborhood dredged from the marshes, provides a dock immediately behind almost every lot. This neighborhood exhibits a variety of two to five bedroom homes in late-mid-century Bay Region styles. The relocation of the Post Office, the aging population, and the arrival of Wal-Mart in the near-by City of Clearlake have all worked to decentralize the traditional business center. Redevelopment through private center efforts of areas within the District is anticipated, rather than annexation of new land to the District.

The Elem Indian Colony, on the lakeshore off Sulphur Bank Road, is home to Native Americans of Pomo descent. Offshore from Elem Indian Colony is Rattlesnake Island, the largest of Clearlake's islands and once the site of a major Pomo village. Rattlesnakes no longer trouble visitors, thanks to a herd of swine imported for the purpose. The island remains significant to the Pomo, who believe that spirits of ancient tribal members still inhabit its oak woodlands. The island is now privately owned. The Community Beach area is the site for a local fireworks display each Independence Day. The Clearlake Oaks community hosts an annual catfish derby in June.³

2.3 Clearlake Oaks Population

Clearlake Oaks is a Census-Designated place (CDP). This means that US Census data is collected even though the community is not an incorporated city. The population of Clearlake Oaks was estimated to be 2,651 in July 2007.

Clearlake Oaks residents had lower household incomes than residents of the State of California and also lower housing values as is shown below.⁵

Estimated median household income in 2009:

Clearlake Oaks:	\$32,467	(\$24,449 in 2000)
California:	\$58,931	

Clearlake Oaks estimated per capita income in 2009: \$19,204

Estimated median house or condo value in 2009:

Clearlake Oaks:	\$209,699	(\$87,700 in 2000)
California:	\$384,200	

³ <http://www.relocateamerica.com/california/cities/clearlake-oaks>, June 16, 2010.

⁵ <http://www.city-data.com/city/Clearlake-Oaks-California.html#ixzz1D1uqriMk>, February 4, 2011.

This will limit the ability of the Clearlake Oaks County Water District to raise fees.

The following data on education, work and marital status provide additional information on the population of Clearlake Oaks:⁶

For population 25 years and over in Clearlake Oaks:

High school or higher:	73.8%
Bachelor's degree or higher:	10.1%
Graduate or professional degree:	4.5%

Unemployed:	16.6%
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Mean travel time to work: 38.4 minutes

For population 15 years and over in Clearlake Oaks CDP:

Never married:	13.8%
Now married:	52.7%
Separated:	2.7%
Widowed:	14.3%
Divorced:	16.6%

2.4 Schools

Schools in Clearlake Oaks are part of the Konocti Unified School District. There is one elementary school in Clearlake Oaks: East Lake Elementary School, 13050 High Valley, Clearlake Oaks, CA 95423 Phone: (707) 998-3387⁷ Mailing Address: PO Box 577, Clearlake Oaks, CA 95423 This school serves 108 students in grades Kindergarten through eighth grade. High school students attend Lower Lake High School.

2.5 Clear Lake

Clear Lake is the most prominent geographical feature in Lake County, and is the largest natural lake in California. Clear Lake serves many uses throughout Lake County—the beneficial uses of Clear Lake are municipal, industrial, and agricultural supply; recreation; aesthetic enjoyment; navigation; groundwater recharge; fresh water replenishment; hydropower generation; and preservation and enhancement of fish, wildlife, and other aquatic resources.

Though most water used for municipal purposes in the Clear Lake area comes directly from Clear Lake, groundwater is also used by various entities across the County. The beneficial uses of underlying groundwater are domestic, agricultural, and industrial supply. Surface water drainage in the Upper Cache Creek Watershed (US EPA Hydrological Unit 18020116) flows to Clear Lake.

⁶ <http://www.city-data.com/city/Clearlake-Oaks-California.html#ixzz1D1rlqssf>, February 4, 2011.

⁷ Konocti Unified School District <http://www.konoctiusd.org/index.cfm?fuseaction=schools>, February 4, 2011.

2.6 Other Municipal Service Providers In Clearlake Oaks

2.6.1 General Services

Lake County provides street maintenance, general planning, parks and recreation, law enforcement (County Sheriff), general administration, tax collection and welfare services.

2.6.2 Fire Protection

The Clearlake Oaks Fire Protection District (FPD) was merged into the Northshore Fire Protection District which now provides fire protection within the boundaries of the Clearlake Oaks County Water District. The Clearlake Oaks area has one full Fire Station and two substations. In addition to the Northshore FPD, during fire season the California Department of Forestry and Fire Protection operates a fully equipped and staffed Fire Station in Clearlake Oaks.

Clearlake Oaks area has an ISO rating of five. The FPD has five full-time paid firefighters and 16 volunteers in the Clearlake Oaks area. Average response time is under five minutes. Water storage and supply appear to be adequate, with sustained storage capacity and fire flows above minimum needs. Fire flows are considered adequate for the building types found in Clearlake Oaks. Fire flows are approximately 1,500 gallons per minute (gpm), which satisfies fire flow requirements for residential lots.

2.6.3 Electricity

Pacific Gas and Electric Company (PG&E) provides electricity to the Clearlake Oaks area. The CLOCWD uses approximately 865 kilowatt-hours per month.

3 CLEARLAKE OAKS COUNTY WATER DISTRICT

3.1 History

The Clearlake Oaks County Water District (CLOCWD) was formed in 1960 under section 30000 *et seq.* of the California Water Code. The CLOCWD provides water and wastewater services. The population of the District is estimated by the District to be 3,858 and active water service connections number 1,685.⁸ The area within the Clearlake Oaks County Water District was detached from the Lake County Sanitation District (LACOSAN) and LACOSAN Sphere of Influence boundary pursuant to Government Code Section 56271 in 1972.

3.2 Governance

3.2.1 *Mission Statement*

The mission statement for the Clearlake Oaks County Water District is as follows:

*Our focus is foremost the quality and adequate supply of your drinking water and the environmentally safe treatment and disposal of wastewater.*⁹

3.2.2 *Contact Information*

Contact information for the District is as follows:

Clearlake Oaks County Water District Administration Office
12952 E. Hwy 20, Clearlake Oaks, CA 95423

Clearlake Oaks County Water District, PO Box 709, Clearlake Oaks, CA 95323
Telephone: (707)998-3322 Fax: (707)998-1245

Larry Swift, General and Operations Manager	E-Mail: l.swift@clocwd.org
Matthew J Bassett Financial Officer	E-Mail: m.bassett@clocwd.org
Magen Estep, Customer Service III	E-mail: Cust-Serv1@clocwd.org

Water Treatment Plant:	12545 East Highway 20, Clearlake Oaks, CA 95423
	Tel: (707)998-4758 Fax: (707)998-3026

Waste Water Treatment Plant:	13705 Jenson Rd., Clearlake Oaks, CA 95423
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⁸ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, September 24, 2010.

⁹ Clearlake Oaks County Water District, <http://clocwd.org/about.html>, June 14, 2010.

3.2.3 Management Team

The management team for the Clearlake Oaks County Water District is as follows:

Larry Swift	Operations Manager
Mike Smith	Chief Operator, Distributions/Collections
John Hopkins	Chief Operator, Waste Water Plant
Frank Trujillo	Chief Operator, Water Plant
Matt Bassett	Office Manager-Financial Officer,
Magen Estep	Customer Service Representative III
Mary Johnson	Customer Service/Administrative Assistant ¹⁰

The total staff includes the following fourteen employees:¹¹

- 1-Operations Manager
- 1-Office Manager/Bookkeeper
- 2-Customer Service Representatives
- 2-Water plant operators
- 3-Wastewater operators
- 5-Water distribution/sewer collection operators

3.2.4 Board of Directors

Members of the Board of Directors are elected on an at-large basis, to terms of four years. Terms are staggered to allow for elections every two years. The Board members receive a stipend.¹² The membership of the Board of Directors is as follows:

Ms. Iris Hudson, President	ihudson@clcwd.org
Mrs. Judy Heeszal Vice President	dbarron@clcwd.org
Mr. Harry Chase, Director	hchase@clcwd.org
Ms. Dena Barron Director	jheeszal@clcwd.org
Vacant	

The District Board of Directors holds meetings on a monthly basis, and complies with the provisions of the Brown Act.

3.3 General Water Supply, Treatment and Distribution Process Overview

In Lake County, the critical season for water supply occurs in the late summer because demand is higher at this time due to the increased tourist population and supply is lower until the winter rainy season starts again.

Lake County Code requires that water wells be constructed with a continuous seal from ground level down 50 feet. The purpose of the seal is to assure that surface water cannot flow into the well casing and contaminate deeper aquifers that are penetrated by the well.¹³

¹⁰ <http://clcwd.org/about.html>, June 14, 2010.

¹¹ Clearlake Oaks County Water District, LAFCO Questionnaire, July 29, 2010.

¹² Clearlake Oaks County Water District, LAFCO Questionnaire, July 29, 2010.

Small community water treatment has posed an enormous problem for the drinking water regulatory community, drinking water treatment professionals, and the consumers living in these communities. The Safe Drinking Water Act (SDWA) and subsequent regulations require that all water in the distribution system and at every tap connected to the distribution system comply. Water treatment usually consists of filtration and disinfection.

Water treatment standards essentially mandate central treatment for drinking water prior to entering the distribution system. No water that exceeds a primary standard may be used for drinking water.

Primary Standards have been developed to protect human health and are rigorously enforced by the Department of Health Services. For very small communities, this may be a cost that poses an undue burden. Often it could be a cost that has negative public health implications. For a very low-income family, the money spent on water treatment may not be available for other essentials.

Rather than spend that money, a community may apply for a variance or exemption. Exemptions and variances are intended to be temporary solutions to regulatory compliance. They may, however, extend indefinitely leaving a community with no water that meets the regulation.¹⁴

Secondary Standards are intended to protect the taste, odor, or appearance of drinking water. California Code requires that, if a community water system experiences an exceedance of certain secondary standards, quarterly sampling must be initiated. Compliance is then determined based upon the average of four consecutive quarterly samples. Non-compliant water must then be treated to meet the secondary standards.¹⁵

Water distribution systems carry water for both domestic use and for fire protection. The distribution system should be sized to perform both functions simultaneously, delivering sufficient water volume and pressure. Pipes should be made of durable and corrosion-resistant materials, and alignments located in areas that are easy to access for repairs and maintenance.¹⁶ Fire hydrants should be placed a maximum of 600 feet apart along the water mains and a maximum of 500 feet from the end of water lines.¹⁷

Some water loss in the distribution system can be expected. Water loss is the difference between the volume of water pumped from the water supply and the volume of water sold to users. A loss of water from 10% to 20% is considered acceptable by the American Water Works Association (AWWA).¹⁸

¹³ Brelje & Race Consulting Civil Engineers, "Preliminary Engineering Report Bonanza Springs Water System CSA #7 Lake County Special Districts", December 2006, page 6.

¹⁴ NSF International, "Feasibility of an Economically Sustainable Point-of-Use/Point-of-Entry Decentralized Public Water System Final Report", March 2005, p18. nsf.org/business/.../pdf/GrimesFinalReport_Dec05.pdf

¹⁵ Brelje & Race Consulting Civil Engineers, "Preliminary Engineering Report Bonanza Springs Water System CSA #7 Lake County Special Districts", December 2006, page 8.

¹⁶ Brelje & Race Consulting Civil Engineers, "Preliminary Engineering Report Bonanza Springs Water System CSA #7 Lake County Special Districts", December 2006, p. 10.

¹⁷ Brelje & Race Consulting Civil Engineers, "Preliminary Engineering Report Bonanza Springs Water System CSA #7 Lake County Special Districts", December 2006, p. 11

¹⁸ Lake County, Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, Ph: (707) 263-0119 F: (707) 263-3826, October 22, 2008.

The Best Management Practices for water conservation recommended by the California Water Association are as follows:¹⁹

1. Water Survey Programs for Single-Family Residential and Multi-Family Residential Customers
2. Residential Plumbing Retrofit
3. System Water Audits, Leak Detection and Repair
4. Metering with Commodity Rates for All New Connections and Retrofit of Existing Connections
5. Large Landscape Conservation Programs and Incentives
6. High-Efficiency Washing Machine Rebate Programs
7. Public Information Programs
8. School Education Programs
9. Conservation Programs for Commercial, Industrial and Institutional Accounts
10. Wholesale Agency Assistance Programs
11. Conservation Pricing for Home use
12. Conservation Coordinator at District Office
13. Water Waste Prohibition
14. Residential ULFT (ultra-low-flow-toilet) Replacement Programs

3.4 Clearlake Oaks County Water District Water Service

3.4.1 Water Sources

Since the Clearlake Oaks County Water District uses surface water (from Clear Lake) a brief background on surface water rights and the groundwater in Lake County will be included below:

A. Surface Water Rights

Water has always been an essential commodity in California and a complex system of water rights has developed. There are two main types of surface water rights as follows:

Riparian (Littoral) rights

“Riparian rights” are the highest priority water rights and are attached to land that borders natural waterways. Based on legal precedents, riparian rights water can only be used on the property adjacent to the waterway and users are prohibited from transferring their water. Previously, riparian rights secured unlimited water use. A later court case established that riparian rights water users must be held to a standard of “reasonable use” and are prohibited from waste, unreasonable use, or unreasonable methods of diversion.

Appropriative rights

“Appropriative rights” are the second type of water rights and can be secured by properties that do not directly border waterways. Miners were the first to initiate this water rights system by posting a notice to divert water and secure the water right. Appropriative water rights were legally recognized in 1855 and are prioritized by a “first in time, first in right” hierarchy. Appropriative water rights

¹⁹ California Water Association, <http://www.calwaterassn.com/conservation.htm>, July 26, 2010.
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must be put to “beneficial use” and can expire if the water is not used for a period of five years.²⁰

According to the “Lake County Water Inventory and Analysis,”

Conflicts developed between water users over the distinctions between riparian and appropriative water rights. In order to address these issues, the Water Commission Act of 1913 declared water a property of the State of California. The Water Commission Act also created a permit process to control water rights and established the State Water Resources Control Board (SWRCB) to govern the permit process. The Water Commission Act became the basis for appropriating water. The Act does not apply to riparian, appropriative, or groundwater rights established prior to 1914 (“Pre-1914” rights).

During years of water shortage, appropriative rights users must cut back their water use. The most recent right-holders are the most junior and are subject to the cutbacks first. Appropriative rights holders continue to be cut back in an inverse priority until the shortage is corrected.²¹

B. Clear Lake Water Rights

According to the “Lake County Water Inventory and Analysis,”

Yolo County, to the southeast of Lake County, holds the majority of the water rights to Clear Lake, its tributaries, and Cache Creek (which drains the Lake). Most Lake County water purveyors do not have rights to Clear Lake and must enter into contracts with Yolo County to purchase Clear Lake surface water.

Numerous water and ditch companies dating back to the late 1800s acquired appropriative water rights from Cache Creek and its source, Clear Lake. The Yolo Water and Power Company later obtained many of these companies. In 1912, the Yolo Water and Power Company made an application for water from Cache Creek, including Clear Lake and all the streams flowing into the Lake. Up to this point Lake County had never applied for water rights and so the water right was given to the Yolo Water and Power Company. Eventually the Clear Lake Water Company purchased the Yolo County Water and Power Company, which was then purchased by Yolo County Flood Control and Water Conservation District.

Today the Yolo County Flood Control and Water Conservation District's appropriative water right allows them to divert up to 150,000 acre feet of water annually from Clear Lake with certain conditions. The Gopcevic Decree (1920) established Yolo Water and Power's water right for Clear Lake to be between 0 and 7.56 feet Rumsey²² and required the Lake to be operated between 0 and

²⁰ Lake County Watershed Protection District, “Lake County Water Inventory and Analysis”, March 2006, page 3-1.

²¹ Lake County Watershed Protection District, “Lake County Water Inventory and Analysis”, March 2006, p 3-1 and 3-2.

²² The **Rumsey Gauge** is a measurement of the lake level that was established back in 1872 when Capt. Rumsey created a gauge to measure the various lake levels. He came up with a standard that is still used today. Rumsey decided that when water ceased to flow over the Grigsby Riffle, the lake would be at zero on his gauge. Zero Rumsey is equal to a height of 1318.256 feet above sea level. When water was above the riffle it would be called plus Rumsey, such as 1 foot, 2 feet and so on. Below the riffle, the lake level would be measured as minus Rumsey. All measurements were based on zero Rumsey at the Grigsby Riffle, which is located LAKE LAFCO MSR AND SOI July 17, 2013

7.56 feet Rumsey, with certain exceptions during flood conditions. The Solano Decree (1978, revised March 30, 1995) regulates summer Lake levels and the maximum amount of water that Yolo County Flood Control and Water Conservation District can divert.²³

C. Lake County Groundwater Overview

Lake County is actively monitoring groundwater use in the County as explained below:

Groundwater is one of Lake County's greatest natural resources. In an average year, groundwater meets about 60 percent of Lake County's urban and agricultural water demands. The demand for water will increase significantly as Lake County's population grows and agricultural production increases.

Urban water demand is anticipated to increase from an average of 10,900 acre-feet per year to 19,738 acre-feet per year by the year 2040, an 81% increase. Depending on the type and rate of agricultural development, the current average agricultural water demand of 39,817 acre-feet per year may be minimal or as much as 48,387 acre-feet per year by the year 2040, a 21% increase.²⁴

With the exception of areas near Clear Lake, nearly all the additional water demand is likely to be supplied by groundwater. In many basins, the ability to optimally use groundwater is affected by overdraft and water quality impacts, or limited by a lack of data, management, and coordination between water users.

Effective management of groundwater basins is essential because groundwater will play a key role in meeting Lake County's water needs. Lake County is committed to implementing effective, locally planned and controlled groundwater management programs.

Lake County is also committed to partnerships with local agencies to coordinate and expand data monitoring activities that will provide necessary information for more effective groundwater management. Coordinated data collection at all levels and local planning and management will help to ensure that groundwater continues to serve the needs of Californians.²⁵

D. CLOCWD Water Source

The CLOCWD water plant is located at Highway 20 and Stubbs Island Drive. The District's water source is from an infiltration gallery into the Lake where they purchase water from Yolo County (Yolo County owns the water rights) at \$ 57.00 per acre-foot. The capacity of Clear Lake ranges from approximately 680,000 to 1,200,000 acre-feet. The stage and rate of outflow from

on Cache Creek, about two miles from the dam. Yolo County was originally allowed to take the lake level down to zero on the Rumsey Gauge, however in 1978, eight years after Indian Valley Reservoir was built, Yolo County made an agreement with Lake County to stop taking water out of Clear Lake at plus-1 foot on the Rumsey Gauge. (http://www.record-bee.com/ci_10424164?source=most_emaild)

²³ Lake County Watershed Protection District, "Lake County Water Inventory and Analysis", March 2006, p 3-2 and 3-3.

²⁴ Lake County,

http://www.co.lake.ca.us/Government/DepartmentDirectory/Water_Resources/Division_Programs/Groundwater_Management.htm

²⁵ Lake County,

http://www.co.lake.ca.us/Government/DepartmentDirectory/Water_Resources/Division_Programs/Groundwater_Management.htm

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Clear Lake are primarily controlled by the Yolo County Flood Control District at the Clear Lake Dam, approximately three miles downstream from the community of Lower Lake.

The raw water treated by the District is purchased from the Yolo County Flood Control and Water Conservation District under a water sale agreement limiting non-littoral property water use within the District to 660 acre feet annually. In 1995, the District joined with other water utilities supplied by Clear Lake to have a Watershed Sanitary Survey prepared. The final document was submitted in March 1996 and has been approved by the California Department of Water Resources (DWR). This Study was updated in 2002 , 2007 and 2012 with the next edition anticipated in 2015.

3.4.2 CLOCWD Water Service Infrastructure

A. CLOCWD Water Intake Pumps

There are two raw water intakes, located side-by-side, 100 feet off the lake shore at a depth of -7 feet on the Rumsey Scale (1,311.3 feet mean sea level). The submersible pumps are 25 horsepower (hp) variable frequency drive (VFD) pumps, each rated at 1200 gallons per minute (gpm). The suction side for each pump is a 6-inch perforated pipe. The intake pumps discharge in separate transmission lines that run in parallel from the lake to the plant. Each line is comprised of a 100-foot, 8-inch ductile iron pipe mounted on a pier structure. The lines are accessible for repair and maintenance. In the event of a serious problem with one of the transmission lines, one line can be taken out of service for repairs while the other remains in service.

The District has no control over actions taken on or in Clear Lake. The District has to treat the water from the Lake to meet the State Standards.²⁶

B. Water Treatment Facilities

Water treatment facilities are less than 10 years old, except for clarifiers and two small filters which are over 20 years of age, and one large filter which was rehabilitated in 2012. Booster pumps range in size of 50 to 100 horsepower (hp). Water mains are 2 inches to 12 inches in size and laterals are 5/8 inch to 6 inches in diameter. The District has no interconnections with other water systems nor are there any water systems in the vicinity that they can easily connect with. The District's water treatment plant does have a generator that can operate the treatment plant in the event of a power outage.

The Clearlake Oaks water treatment plant is located off State Highway 20 near Shady Lane and Island Drive. The treatment plant was originally placed into service in 1976 to treat Clear Lake water. The treatment plant has ozone treatment and is classified as conventional treatment. Its hydraulic capacity is 2.45 million gallons per day (MGD) or 1,700 gpm. The treatment capacity is approximately 1.22 MGD or 850 gpm based on the design of the clarifier loading rate. The plant is not operated beyond 0.86 MGD (600 gpm).

The treatment plant is physically checked by an operator every day including weekends and holidays. The chief treatment plant operator has a T3 certificate and each of the shift operators have a T2 certificate. The distribution chief operator has a D3 certificate and all shift operators

²⁶ Clearlake Oaks County Water District, Phone: 707-998-3322, June 9, 2011.
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have a D2 certificate. Based on the processes and capacity of the treatment plant, the District's facility is classified as a T3 plant. Based on the number of pressure zones and chlorine treatment, the distribution system is classified as a D3. The District is required by CDPH to employ a T3 operator to have primary responsibility for operations and maintenance of the treatment facility.

C. Water Storage

The District reports the following Water Storage Tanks:²⁷

CLEARLAKE OAKS COUNTY WATER DISTRICT STORAGE TANKS			
Capacity	Type	Site	Zone
200,000 Gallons	Clearwell	WTP	
345,000 Gallons	Steel Reservoir	Pluth Tank Site	Zone 1
100,000 Gallons	Redwood Reservoir	Pluth Tank Site	Zone 1
125,000 Gallons	Steel Reservoir	Shady Lane	Zone 1
100,000 Gallons	Redwood Reservoir	Cerrito	Zone 3
120,000 Gallons	Steel Reservoir	Konocti	Zone 2

D. Water Distribution System

The distribution system consists of thirty five (35) miles of pipelines from 2 to 12 inches in diameter. Approximately 85% are concrete asbestos 4- to 12-inch pipelines, 10% are PVC 6- to 8-inch pipelines, and 5% are galvanized steel 2-inch pipelines.²⁸

The District is in the process of developing a new master plan.

E. Water Service Connections

The population of the District is estimated by the District to be 3,858 and active water service connections number 1,685.²⁹ There have been 83 new connections in the past 9 years. The average connection uses 576 gpd. The capacity of the system is 1,224,000 gpd. There is capacity for an additional 440 connections.³⁰

3.4.3 Clearlake Oaks County Water District Water Rates

The Clearlake Oaks County Water District charges the following rates for Water Service:³¹

Minimum Monthly Charge:

Residential Base Rate for Water

Includes the first 200 cubic feet of water (1,496 gallons) delivered per unit.

Single Family Dwelling (SFD)	\$32.36
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²⁷ Clearlake Oaks County Water District, LAFCO Questionnaire, July 29, 2010.

²⁸ Clearlake Oaks County Water District, LAFCO Questionnaire, July 29, 2010.

³⁰ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clowd.org, September 24, 2010.

³¹ Clearlake Oaks County Water District, Ordinance No. 68, November 4, 2008.

Multiple Family Dwelling- duplex, triplex, apartment, condominium, per unit (MFD)	\$31.82
Mobilehome Single Family Dwelling (MHD)	\$28.14

Water Consumption Rate-Residential

In addition to the minimum monthly residential charge there shall be a consumption charge of \$2.83 per 100 cubic feet of water in excess of the first 200 cubic feet delivered during any month or fraction thereof, regardless of meter size. Such consumption charge shall be prorated based upon quantity of water delivered.

Commercial Base Rate for water by Meter Size

Clearlake Oaks County Water District Commercial Base Rate for water by Meter Size		
Meter Size	Water Flow	Cost
5/8-inch by 3/4-inch meter	20 gallons per minute	\$41.36
3/4-inch meter	30 gallons per minute	\$62.07
1-inch meter	50 gallons per minute	\$103.56
1 1/2-inch meter	100 gallons per minute	\$206.97
2-inch meter	160 gallons per minute	\$331.05
3-inch meter	300 gallons per minute	\$620.75
4-inch meter	500 gallons per minute	\$1034.63
6-inch meter	1,000 gallons per minute	\$2069.17

Water Consumption Rate-Commercial

In addition to the minimum monthly commercial charge (Commercial Base Rate) there is a consumption charge of \$2.83 per 100 cubic feet of water delivered during any month or fraction thereof. Such consumption charge shall be prorated based upon quantity of water delivered (100 cubic feet of water = 748 gallons).

3.4.4 Commercial Water Users

The Elementary School and Commercial water users that require a large amount of water, such as hotels and restaurants, use the larger water meter sizes. The County Park uses a 3-inch meter. Caltrans has a commercial 4-inch meter. Mobile home parks that have one meter for the park also use the larger meter sizes.³²

3.5 Wastewater Collection and Treatment

3.5.1 Wastewater Treatment Overview

The following is a general discussion regarding wastewater treatment. Wastewater is the water that drains from sinks, showers, washers, and toilets. Wastewater also includes water used for some outdoor purposes, such as draining chlorinated pool water, commercial car washes and industrial processes. Underground sanitary sewer pipelines carry sewage to a wastewater treatment plant, where it is treated, sanitized, and discharged.

³² Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, June 9, 2011.
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Wastewater Treatment demand management strategies include the following:

- Sewer infiltration and inflow (I&I) control
- Industrial pretreatment and recycling
- Water conservation

Service providers can reduce infiltration and inflow with capital improvements, such as pipeline rehabilitation, manhole cover replacement, and root eradication. They can also address sources on private property, such as broken service lines, uncapped cleanouts and exterior drains, through public education, incentives and regulatory strategies.

Communities may use various techniques to prohibit discharge of unwanted pollutants or to reduce the quantity and strength of wastewater discharged to sewers. These techniques may include the following depending on the type of problems within the district:

- 1) Permit limitations on the strength and contaminant levels of industrial and commercial wastewater
- 2) Increased rates or surcharges on high-strength wastes
- 3) Incentives or requirements for water recycling and reuse within the industrial or commercial operation

Water conservation measures are effective for reducing average wastewater flows, but have less impact on peak flows, which are usually strongly influenced by infiltration and inflow contributions. Water conservation has little or no impact on organic loading to the treatment plant. Water use is often used as an indicator for the amount of wastewater produced, especially for commercial establishments. Thus, water use can be used to determine sewer service charges.

3.5.2 CLOCWD Wastewater Treatment System Capacity

The Clearlake Oaks County Water District operates a wastewater treatment plant in the community of Clearlake Oaks. 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 275-500 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 mgd maximum daily discharge and 0.500 million gallons per day (mgd) monthly average discharge. Wastewater flows for the CLOCWD 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 geothermal steam fields.

3.5.3 Regulatory Setting: Clearlake Oaks County Water District

California Regional Water Quality Control Board Regulations

The regulatory setting for CLOCWD is similar to that of LACOSAN and other collection and treatment providers in terms of water quality and natural resources protection requirements for construction and operations. The CLOCWD 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 Water Treatment Plant and Collection System are in compliance with these requirements.

CRWQCB Order No. 98-211 Waste Discharge Requirements for CLOCWD allows average dry weather discharge flows not to exceed 0.5 mgd and the maximum daily discharge not to exceed 2.1 mgd. The CLOCWD is required to comply with monitoring and reporting program No. 98-211. The following table compares CLOCWD data with the Waste Discharge Requirements:

**Clearlake Oaks County Water District
Facilities Improvements and Effluent Pipeline Project Performance
Certification Report
Comparison of Operating Data with Project Performance Standards³³**

Parameter	Design Criteria	Actual Operating Data (monthly average)	Waste Discharge Requirements
Plant Influent			
ADWF, mgd June 1-Sept. 30	0.43 mgd	0.35 mgd	0.5 mgd
PWWF, mgd	2.1 mgd	0.87 mgd	2.1 mgd
BOD, lb/day	590 lb/day	205 lb/day	NA
TSS, lb/day	590 lb/day	455 lb/day	NA
Oxidation Ditch			
MLSS, mg/L	2,500 mg/L	2,700 mg/L	NA
HRT at ADWF, hours	26 hours	27 hours	NA
SRT, days	4 days	7 days	NA
Partially mixed Lagoons			
DO, mg/L	>1 mg/L	6.0 mg/L	>1 mg/L
pH	6.5 to 8.5	7.3	6.5 to 8.5
Disinfection			
Contact Time at PWWF, minutes	30 minutes	33 minutes	NA
Plant Effluent			
BOD, mg/L	30	27, annual average 89, monthly maximum	40, 30-day average 80, monthly maximum
SS, mL/L	NA	0.1 annual average 0.4 monthly maximum	0.2, 30-day average 0.5, monthly maximum
Total Coliform, MPN/100 mL	23, monthly median, 230 monthly maximum	<1 annual average 2000, annual maximum	23, monthly median 230, monthly maximum

³³ Clearlake Oaks County Water District, fax: 707-998-9783, September 28, 2010.
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Influent Characteristics

Wastewater Flows: Daily wastewater flows to the WWTP ranged from 0.266 mgd in November 2011 to 0.315 mgd in March 2012. The peak daily flow of 0.756 occurred in December, of 2012. The average dry weather flow (ADWF) for the period between June 1 and September 30, 2012 was 0.33 mgd. All recorded flows during the certification period were less than the design and permitted flows.

BOD: Average monthly BOD loading to the WWTP was lower than the design value of 590 lb/day, ranging from 108 to 341 lb/day, with an annual average loading of 205 lb/day.

3.5.4 Problems in Wet Weather

The sewage collection system is inundated when the groundwater rises and this contributes some infiltration to the collection system. The infiltration, coupled with inflow to the system, triples the influent to the plant during wet periods with high lake levels. The inflow and infiltration (I&I) is more than the disposal system capacity during high groundwater periods.

The Discharger (CLOCWD) was under a Cease and Desist Order No. 94-029 adopted 28 January 1994 requiring the District to evaluate discharge options and construct adequate treatment and disposal facilities. The Cease and Desist Order No. 94-029 reaffirmed in 1998 (CVRWQCB Order No. 98-211); but was rescinded July 27, 2001.³⁴ The connection to the Geysers Pipeline described below corrected many of these problems by transporting effluent to the Geysers.

3.5.5 Wastewater Collection System: Clearlake Oaks County Water District

Wastewater is transported through a series of sanitary sewer main pipelines within subdivision streets, secondary outfall pipelines (large diameter pipelines), major outfalls (larger diameter pipelines), and force mains (pressure pipelines associated with pump stations). These outfall pipelines convey wastewater to the CLOCWD Wastewater Treatment Plant (WWTP) where sewage is treated through an extended aeration process.

The treated sewage then travels 3.5 miles through effluent pipelines to the LACOSAN Southeast Reservoir. The treated effluent is then pumped by LACOSAN to the Geysers for injection. The collection system primarily serves residential customers. Small businesses and restaurants comprise a small percentage of total wastewater flow. The CLOCWD does not service any heavy industrial customers.³⁵

3.5.6 Wastewater Treatment: Clearlake Oaks County Water District

Due to effluent storage problems and I&I difficulties, the Clearlake Oaks County Water District and LACOSAN have entered into an "Agreement for the Acceptance of Effluent from the Clearlake Oaks County Water District," dated July 21, 1998. This agreement provides the CLOCWD with the terms and conditions to allow the discharge of treated effluent to LACOSAN's Southeast Reservoir for the purpose of sending the treated effluent on to the

³⁴ State of California, Central Valley Regional Water Quality Control Board, Agenda, July 26, 2001, http://www.waterboards.ca.gov/centralvalley/board_info/meetings/0107ag.pdf, February 7, 2010.

³⁵ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, Phone: 707-998-3322 June 9, 2011.

Geysers. LACOSAN's Southeast Regional Wastewater Treatment Plant is located approximately one mile north of the City of Clearlake.

This agreement also outlines conditions including, but not limited to, the term of the agreement (twenty years), operation and maintenance responsibilities, delivery, a normal flow rate of 1,500 gpm, and operation emergencies, repair and reconstruction responsibilities (contained in CVRWQCB Order No.98-211). Due to improvements to the wastewater facility and the ability to pump the treated wastewater to the Geysers, the CVRWQCB lifted the District's connection moratorium on July 27, 2001.

3.5.7 Summary of District Wastewater Treatment

Based on AWWF requirement in RWQCB Order No. 96-166, the CLOCWD wastewater treatment plant is currently operating near 100% of permitted capacity. Though the CLOCWD has all the equipment necessary to perform its functions, some of their equipment is as much as 50 years old—specifically the clarifier, oxidation ditch and its components. The equipment is adequate and meets acceptable standards, but will need replacement or rehab within the next few years. The District was on the 2008-09 Project Priority List for the State Revolving Fund Program for I&I Correction (\$1,200,000, Class A) and Wastewater Treatment Plant Upgrade (\$2,686,000, Class C); however, no funds were committed as of December 2012.³⁶

In addition, equipment and use restrictions for the CLOCWD system will affect the District's ability to provide a minimum level of acceptable service in the future (right now customer expectations are met). The District's aeration ponds and drying beds are at plant capacity, and wet weather flows bring inflow and infiltration problems, as stated above. However, according to the District's Operations Manager, there is no future planned development within District boundaries. The District is in the process of making repairs to its collection system in an effort to reduce flows and optimize plant capacity.

3.5.8 Effluent Recycling Pipeline

The Lake County Special Districts Administration describes the effluent pipeline as follows:

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 delivered 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.³⁷

³⁶ State of California, 2008-2009 Project Priority List for State Revolving Fund Program, August 28, 2008, Page 14.

³⁷ Lake County, Special Districts Administration, http://www.co.lake.ca.us/Government/Directory/Special_Districts/Wastewater_Systems/Effluent_Pipeline.htm, February 3, 2011.

3.5.9 Clearlake Oaks County Water District Sewer Service Rates

The following sewer rates were adopted by the Clearlake Oaks County Water District:³⁸

Residential Base Rate for Sewer by Customer Classification

The residential base rate includes the first 200 cubic feet of water (1,496 gallons) delivered per residential unit.

Single Family Dwelling (SFD)	\$45.93
Multiple Family Dwelling- duplex, triplex, apt. condos per unit (MFD)	\$44.90
Mobilehome Single Family Dwelling (MHD)	\$37.65

Residential-Sewer Flow Charge

In addition to the minimum monthly residential charge (Residential Base Rate), there shall be a sewer flow charge of \$0.31 per 100 cubic feet of water in excess of the first 200 cubic feet delivered to each unit during any month or fraction thereof, regardless of meter size. Such consumption charge shall be prorated based upon quantity of water delivered.

Commercial-Base Rate for sewer by Customer Classification

School-per student	\$1.48
RV/Campsite-per rental spaces w/sewer service	\$13.38
Hotel/Motel-per room	\$21.71
Laundromat-per washing machine	\$29.73
Church	\$45.93
Service/Gas Station-per restroom	\$29.73
Beauty/Barber Shop	\$45.93
Restaurant	\$69.13
Restaurant w/bar	\$117.14
Bar	\$66.83
Bar w/kitchen/food service (currently no customers)	
Service Club	\$45.93
Service Club w/kitchen/food service	\$64.67
Commercial Office Space	\$45.93
Community Beach –per restroom	\$45.93
Fire Protection District	\$45.93

Commercial-Sewer Flow Charge

In addition to the minimum monthly commercial charge (Commercial Base Rate), there shall be a sewer flow charge of \$0.31 per 100 cubic feet of water delivered during any month or fraction thereof. Such consumption charge shall be prorated based upon quantity of water delivered. For those properties which have sewer service only, the flow upon which the charge is based shall be established based upon the average flow of similar customer classification throughout the District.

³⁸ Clearlake Oaks County Water District, Ordinance No. 71, November 6, 2008.
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3.6 CLOCWD Finances

3.6.1 Audit Report

The June 30, 2012, audit report for the Clearlake Oaks County Water District is available on the District's website (www.clocwd.org). The report shows that the District had net assets of \$6,642,856 on June 30, 2012.³⁹ The District had a total operating revenue of \$1,810,672 and total operating expenses of \$2,169,615.⁴⁰

The District invests funds with the State of California Local Agency Investment Fund (LAIF).⁴¹ The District had the following Cash and Investments on June 30, 2012:⁴²

General Checking	\$33,028
Cash in County Treasury	\$45,255
Petty cash	\$300
Investments	<u>\$323,506</u>
Total Cash and Investments	\$402,089

In 1975, the voters of the District authorized a water general obligation bond in the amount of \$485,000 to finance replacement of the water treatment plant. The interest rate is five percent and the bonds will mature annually. As of June 2012 the loan balance was \$38,650, with the next payment of \$27,100 being due December 2012. The final payment is set to be made in December 2013.

The District participates in the California Public Employees' Retirement System (CalPERS) and provides retirement and disability benefits, annual cost of living adjustment and death benefits to plan members and beneficiaries. For fiscal year 2011-2012 the District contributed \$75,376 to CalPERS. The District also contributed the employee's portion as a benefit to the employee.⁴³ New employees hired after July 2012 will be required to contribute the employees share for PERS.

The District carries commercial insurance to provide coverage for theft, damage and injuries to employees. The District has no pending litigation or other contingencies, which would have a material effect on the financial condition or liquidity of the District.⁴⁴

The Audit Report recommended that management review and initial the financials to prove oversight on at least a monthly basis.⁴⁵ The District has improved the financial procedures to comply with these and other recommendations from the Independent Auditor. The District has separate accounts for its water and sewer funds.

³⁹ Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA,. 2888 Marina View Drive, Kelseyville, CA 95451 P.3

⁴⁰ Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA, , 2888 Marina View Drive, Kelseyville, CA 95451 P. 4.

⁴¹ Clearlake Oaks County Water District, "Financial Statements June 30 2012," Prepared by Zachary Pehling CPA,. . 2888 Marina View Drive, Kelseyville, CA 95451 P.8

⁴² Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA,. 2888 Marina View Drive, Kelseyville, CA 95451 P.8 E.

⁴³ Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA,. 2888 Marina View Drive, Kelseyville, CA 95451 P.11 Note 2.

⁴⁴ Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA,. 2888 Marina View Drive, Kelseyville, CA 95451

⁴⁵ Clearlake Oaks County Water District, "Financial Statements June 30, 2012," Prepared by Zachary Pehling CPA,. 2888 Marina View Drive, Kelseyville, CA 95451

3.6.2 Budget

The Clearlake Oaks County Water District adopted the 2012-2013 Budget on June 21, 2012. The following table shows the budget history and a summary of various categories:⁴⁶

CLEARLAKE OAKS COUNTY WATER DISTRICT BUDGET 2010-2011				
	Actual FY 10-11	Actual FY 11-12		Budget FY 12-13
REVENUE				
Operating Revenue Water	\$971,258	\$952,617		\$1,156,00
Operating Revenue Sewer	\$807,170	\$848,055		\$944,210
Non-operating Revenue Water	\$140,727	\$149,769		\$132,700
Non-operating Revenue Sewer	\$86,551	\$98,391		\$74,650
Total Revenue	\$2,005,706	\$2,058,832		\$2,307,560

CLEARLAKE OAKS COUNTY WATER DISTRICT BUDGET 2010-2011				
EXPENSES	Actual FY 10-11	Actual FY 11-12	Projected FY	Budget FY 12-13
Operating Expenses Water	\$926,829	\$708,813		\$833,743
Admin and General Expenses Water	\$252,641	\$376,702		\$167,208
Non-operating Expenses Water	\$4,600	\$4,932		\$188,000
Operating Expenses Sewer	\$871,528	\$715,628		\$782,222
Admin and General Expenses Sewer	\$226,636	\$368,473		\$142,550
Non-operating Expenses Sewer		\$4,932		\$188,000
Total Expenses	\$2,282,234	\$2,179,480		\$2,301,723

The District provided the following explanation of the Budget:⁴⁷

⁴⁶ Clearlake Oaks County Water District, Operation/maintenance Budget 2010/2011, September 16, 2010.
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While meeting as a committee that included directors, staff, and members of the public to discuss budgetary concerns for the second year in a row, we determined it was vital to maintain focus on five major issues.

- 1. Insure that oversight and checks and balances remain in place.*
- 2. Focus on sound fiscal policies and discipline to help guarantee success.*
- 3. Recognize the adversity facing District customers in the current economic situation.*
- 4. Develop specific Board governance policies to provide for more efficient District operations.*
- 5. Continue to increase reserves for emergency situations.*

Looking Back

Looking back on Fiscal Year 2011/2012 and specifically how the District performed financially, there's nothing notable to mention. With the economy down the District pretty much tried to keep all spending to a minimum.

The District was vigilant in watching all expenditures and controlled payroll.

In June the District adopted a base rate increase of \$5.00 per month for water and \$7.10 for sewer. This has allowed the District to make much needed capital improvements and repairs.

Looking Forward

Looking forward to the Fiscal Year 2012/2013, the District is looking at ways to keep up with inflation, energy costs and the constant maintenance of the District's infrastructure. We've identified four possibilities. Expanding our client pool, conducting an engineering audit that will focus on energy and man-power savings, revising services fees to reflect the actual costs, and possibly proposing a moderate rate increase.

In the 2012/2013 budget, District staffing levels has been reduced by one from the previous year. The District is staffed with two office personnel, three field supervisors, and seven operators, a General Manager/Operations Manager and a Financial Officer/Office Manager. Overtime for other staff will continue to be kept at a minimum and used only for severe operational need or emergencies.

Operating expenses for water treatment and distribution for FY 2012/2013 are expected to hold steady due to limiting water loss, operating more efficiently, and numerous major repairs and maintenance improvements in 2012/2013. Sewer treatment and collection expenses for FY 2012/2013 are expected to increase slightly due to equipment upgrades and critical repairs. Mandatory cleaning and video inspections of the collection system performed in 2012/2013 revealed conditions that will need correction and are provided for in the 2012/2013 budget. These corrections will help reduce future operational and repair costs.

⁴⁷ Clearlake Oaks County Water District, 2010/2011 Fiscal Year Budget, "A Message from the President of the Board of Directors," September 22, 2010.

Capital projects are being considered and will be prioritized by immediate need by the engineering assessment currently being done. Cost estimates should be known by the end of this fiscal year.

The District will continue to pursue funding opportunities for grants and low interest loans as a way to complete the needed capital projects without significantly impacting rates.

3.7 District Plans

The District has two hazardous materials business plans, one for the water system and one for the wastewater treatment system. These plans are updated each year.

The District has separate emergency response plans for various types of problems such as spills, water quality problems, or pathological problems. The District is working with the Risk Management Authority, through JPIA, to develop a comprehensive risk management plan for all types of potential problems.⁴⁸

⁴⁸ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, June 9, 2011.
LAKE LAFCO MSR AND SOI July 17, 2013
Clearlake Oaks County Water District
Adopted Resolution 2013-0008 MSR
Adopted Resolution 2013-0009 Sphere of Influence

4 MUNICIPAL SERVICE REVIEW

The Municipal Service Review Findings are required by the State law. The findings serve the purpose of helping LAFCO to understand the special district or city involved in an annexation, detachment or reorganization proposal. The determinations are not binding proposals for the special district or city. The determinations are subject to change because the jurisdiction involved is constantly changing, improving or growing. The State requires the MSR to be reviewed every five years as part of the SOI update process.

Lake LAFCO is responsible for determining if an agency is reasonably capable of providing needed resources and basic infrastructure to serve areas within its boundaries and, later, within the Sphere of Influence. LAFCO will do the following:

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

The Final Municipal Service Review Guidelines prepared by the Governor's Office of Planning and Research recommend issues relevant to the jurisdiction be addressed through written determinations called for in the Cortese-Knox-Hertzberg Act. Determinations are provided for each of the five factors, based on the information provided in this Municipal Service Review.

4.1 Growth and Population Projections for the Clearlake Oaks Area

Purpose:

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

4.1.1 Clearlake Oaks Area Population Projections

Lake County population growth from 2000 to 2009 is shown below:⁴⁹

LAKE COUNTY POPULATION 2000 TO 2009				
Year	Lake County	City of Clearlake	City of Lakeport	Unincorporated Area
2000	58,325	13,147	4,820	40,358
2001	59,315	13,273	4,878	41,164
2002	60,565	13,452	4,971	42,142
2003	61,493	13,574	5,024	42,895
2004	62,292	13,729	5,053	43,510
2005	62,878	13,727	5,079	44,072
2006	63,404	13,767	5,071	44,566
2007	63,682	14,018	5,054	44,610
2008	63,805	14,189	5,024	44,592
2009	64,025	14,390	5,146	44,489

The Clearlake Oaks area may experience reduced population growth along with the rest of the unincorporated area in Lake County until the 2008-2009 economic recession is over. [12]

⁴⁹ State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.
LAKE LAFCO MSR AND SOI July 17, 2013
Clearlake Oaks County Water District
Adopted Resolution 2013-0008 MSR
Adopted Resolution 2013-0009 Sphere of Influence

4.1.2 MSR Determinations on Growth and Population Projections for the Clearlake Oaks Area

- 1-1) The District should coordinate requirements for new development with the Lake County Community Development Department. Staff and Board of Directors should be cognizant of the Shoreline Communities Area Plan, approved by the County of Lake in 2009, and the Lake County General Plan approved in 2008.

The 2008 General Plan identified specific “Community Growth Boundaries” (of which Clearlake Oaks is one), and the Shoreline Communities Area Plan lays out local planning and implementation programs for community development and support for redevelopment projects in the Northshore Redevelopment Area that includes Clearlake Oaks.

- 1-2) The District should work together with the Lake County Community Development Department to understand the zoning and general plan designations for the area and to develop specific population and building projections.
- 1-3) With the total capacity of the water system at 1,224,000 gpd, remaining capacity is 254,000 gpd or 440 additional water connections.⁵⁰
- 1-4) Additional wastewater collection and treatment planning is required for the period beyond 2018 when the agreement between CLOCWD and LACOSAN ends. Upon completion of future plan updates for CLOCWD and LACOSAN, extended master plans need to be developed to reflect the revised plans and growth trends beyond 2015. This needs to be a cooperative effort between the CLOCWD, LACOSAN and Lake County.
- 1-5) The Clearlake Oaks County Water District will be able to accommodate some additional growth on the condition that the inflow and infiltration problems with their wastewater collection/treatment system are corrected.

⁵⁰ Clearlake Oaks County Water District, Darin McCosker, General Manager, gm@clocwd.org, September 24, 2010.
LAKE LAFCO MSR AND SOI July 17, 2013
Clearlake Oaks County Water District
Adopted Resolution 2013-0008 MSR
Adopted Resolution 2013-0009 Sphere of Influence

4.2 MSR Determinations on Disadvantaged Unincorporated Communities (DUC)

Purpose:

To comply with the State Law to examine any unincorporated areas which could be provided with better services by annexing to an adjacent city.

4.2.1 Determination of Clearlake Oaks CWD Disadvantaged Unincorporated Community Status

In addition to a consideration of population growth, the State law (SB 244) requires LAFCO to consider whether or not an area is a Disadvantaged Unincorporated Community (DUC). A DUC is an area where the Median Household Income is less than 80% of the State of California Median Household Income of \$60,833.⁵¹ Eighty percent of the 2010 California Median Household Income would be \$48,666.

Disadvantaged unincorporated communities (DUCs) are defined as “a territory that constitutes all or a portion of a ‘disadvantaged community’ including 12 or more registered voters or some other standard as determined by the commission.” In California Government Code Section 65302.30 (a), “Community” means an inhabited area within a city or county that is comprised of no less than 10 dwellings adjacent or in close proximity to one another.

The Median Household Income in Clearlake Oaks Census Designated Place in 2009⁵² was reported as \$34,934. Therefore, Clearlake Oaks is a Disadvantaged Unincorporated Community. However, the Clearlake Oaks area is not in the Sphere of Influence of the City of Clearlake.

4.2.2 MSR Determination on DUC status of Clearlake Oaks

- 2-1) The community of Clearlake Oaks qualifies as a Disadvantaged Unincorporated Community (DUC) because the Median Household Income is less than 80% of the State of California Median Household Income.
- 2-2) There is no incorporated city that the DUC could be annexed into.
- 2-3) The Clearlake Oaks County Water District should keep in mind the low Median Household Income in the area and adjust the water service fees accordingly.

4.3 Capacity and Infrastructure for Clearlake Oaks County Water District

Purpose:

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

⁵¹ US Census Bureau, <http://quickfacts.census.gov/qfd/states/06/0685586.html>, November 7, 2012

⁵² <http://www.city-data.com/income/income-Middletown-California.html>, January 16, 2013.

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 in a timely manner to ensure upkeep of maintenance and operations planning in a continuously evolving regulatory and fiscal environment.

In the case of this Municipal Service Review, it is prudent for Lake LAFCO to evaluate the present and long-term infrastructure demands and resource availability of the District. Further, LAFCO needs to see that resources and services are available at needed levels and orderly maintenance and expansion of such resources and services are made if there are increasing demands.

4.3.1 Clearlake Oaks County Water District Infrastructure

A. Water Service System

The water service storage facilities are adequate and are described above in this report. A Water System Operations Plan should be prepared by the District.

B. Wastewater Collection and Treatment System

The Clearlake Oaks County Water District wastewater collection and treatment system is described above in this report. The District is working to improve the system, especially the I&I problems. The District cooperates with LACOSAN to transport effluent to The Geysers power plant.

4.3.2 MSR Determinations on Infrastructure for the CLOCWD

- 3-1) The CLOCWD should develop a Master Plan and update it accordingly, every five years. A Master Plan will guide District activities to keep the treatment and collection system operating efficiently. LAFCO should require a commitment from CLOCWD for including this task in its budget and schedule, and LAFCO should schedule a follow-up review no later than one year from the date of approval of this Municipal Service Review.
- 3-2) The CLOCWD should create a Five-year Capital Improvements Budget Plan.
- 3-3) The water system is adequate and has good Consumer Confidence Reports.
- 3-4) The population of the District is estimated by the District to be 3,858 and active water service connections number 1,685.⁵³ There have been 83 new connections in the past 9 years. The average connection uses 576 gpd of water. The capacity of the water service system is 1,224,000 gpd. **There is capacity for an addition 440 connections.**⁵⁴ Additional may be realized through effective water conservation practices. In fact water conservation practices may also reduce stress on the wastewater system as well.

⁵³ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, September 24, 2010.

⁵⁴ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, September 24, 2010.

- 3-5) Aging equipment and use restrictions on some components of the CLOCWD wastewater treatment system will become a problem in the future unless replaced (specifically the clarifier, oxidation ditch and its components) or repaired (the District's aeration ponds and drying beds are at plant capacity, and wet weather flows bring inflow and infiltration problems).
- 3-6) The maximum daily discharge and monthly average dry weather discharge design capacities are 2.1 mgd maximum daily discharge and 0.500 million gallons per day (mgd) monthly average discharge. Wastewater flows for the CLOCWD range from 0.200 mgd ADWF to 1.0 mgd AWWF with peak wet weather flows up to 0.813 mgd. This indicates that there is no additional capacity for the wastewater collection and treatment system until the I&I problems are solved.
- 3-7) The "Agreement for the Acceptance of Effluent from the Clearlake Oaks County Water District" providing the CLOCWD with the terms and conditions to allow the discharge of treated effluent to LACOSAN's Southeast Wastewater Treatment Plant reservoir (including but not limited to, operation and maintenance responsibilities, delivery, a normal flow rate of 1,500 gpm, and operation emergencies, repair and reconstruction responsibilities) is due to end in 2018.
- 3-8) After the contract with LACOSAN ends, it can be assumed that the Clearlake Oaks County Water District will again re-enter the agreement with LACOSAN to dispose of said effluent.
- 3-9) In the event CLOCWD cannot re-enter the agreement with LACOSAN, it will be necessary for the District to consider alternative options for disposal of wastewater effluent. A master plan must be a top consideration for the district.

4.4 Financial Ability

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 the District to pay for improvements or services associated with annexed sites. This planning can begin at the Sphere of Influence stage by identifying what opportunities there are to identify infrastructure and maintenance needs associated with future annexation and development, and identifying limitations on financing such improvements, as well as the opportunities that exist to construct and maintain those improvements.

LAFCO should consider the relative burden of new annexations to the community when it comes to its ability to provide public safety and administrative services, as well as capital maintenance and replacements required as a result of expanding District boundaries. This is why additional costs incurred as a result of growth should be paid through capital improvement fees.

Rate restructuring may be forced by shortfalls in funding, but the process may also reflect changing goals and views of economic justice or fairness within the community. LAFCO's policies require the evaluation of the impact of SOI and annexation decisions on existing community rates for public water service. A master plan is a major source document to justify district expansion decisions.

Water rates and rate structures are not subject to regulation by other agencies although a Proposition 218 process is required to raise water rates. Utility providers may increase rates annually, and often do so.

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.

4.4.1 Financial Considerations for Clearlake Oaks County WD

Fees

The Clearlake Oaks County Water District charges the following rates for Water Service.⁵⁵

Minimum Monthly Charge:

Residential Base Rate for Water

Includes the first 200 cubic feet of water (1496 gallons) delivered per unit.

Single Family Dwelling (SFD)	\$32.36
Multiple Family Dwelling-	
duplex, triplex, apartment, condominium, per unit (MFD)	\$31.62
Mobilehome Single Family Dwelling (MHD)	\$28.14

Water Consumption Rate-Residential

In addition to the minimum monthly residential charge there shall be a consumption charge of \$2.83 per 100 cubic feet of water in excess of the first 200 cubic feet delivered during any month of fraction thereof, regardless of meter size. Such consumption charge shall be prorated based upon quantity of water delivered.

The following sewer rates were adopted by the Clearlake Oaks County Water District.⁵⁶

Residential Base Rate for Sewer by Customer Classification

The residential base rate includes the first 200 cubic feet of water (1,496 gallons) delivered per residential unit.

Single Family Dwelling (SFD)	\$45.93
Multiple Family Dwelling-	
duplex, triplex, apt., condominium, per unit (MFD)	\$44.90
Mobilehome Single Family Dwelling (MHD)	\$37.85

Residential-Sewer Flow Charge

In addition to the minimum monthly residential charge (Residential Base Rate), there shall be a sewer flow charge of \$0.31 per 100 cubic feet of water in excess of the first 200 cubic feet

⁵⁵ Clearlake Oaks County Water District, Ordinance No. 68, November 4, 2008.

⁵⁶ Clearlake Oaks County Water District, Ordinance No. 71, November 6, 2008.

delivered to each unit during any month or fraction thereof, regardless of meter size. Such consumption charge shall be prorated based upon quantity of water delivered.

CLOCWD Costs

The District budget is designed to screen out unnecessary costs. A base budget is submitted to the District Board for review and approval. The Board of Directors makes changes as necessary. Investment policies for the CLOCWD are through the Local Agency Investment Fund (LAIF) where any surplus is deposited with the LAIF.

To cover new development costs, the developer funds all new infrastructure to accommodate the additional population. Existing customers pay only their own monthly sewer service fee.

4.4.2 MSR Determinations on Financing for the CLOCWD

- 4-1) Private developers pay development costs within the District. Costs for infrastructure benefiting the District as a whole are paid through capacity expansion fees. Costs for emergency repairs are covered by the District reserve fund.
- 4-2) The District applies for and receives grants to help fund District projects, such as the Facilities Effluent Disposal and Pipeline Project.
- 4-3) Government Code §53901 requires that every special purpose taxing district shall provide a copy of its annual budget to the County Auditor's Office for public inspection and review. The budget could also be posted on the District's website.
- 4-4) Based on the existence and use of meters, as well as the review of budgetary documents, the existing rate structure of the Clearlake Oaks County Water District is considered reasonable and appropriate.
- 4-5) Rates and fees for services are established using the provisions of state law. Workshops are conducted, public outreach is performed, and hearings are held.
- 4-6) The District has no Master Plan for its facilities. A comprehensive Master Plan would set forth a reasonable program for both developer- and District-paid capital expenditures based on anticipated growth and need.

4.5 Opportunities for Shared Facilities

Purpose:

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

In the case of annexing new lands into a district, LAFCO can evaluate whether services or facilities can be provided in a more efficient manner if the district can share them with another agency. In some cases, it may be possible to establish a cooperative approach to facility planning by encouraging agencies to work cooperatively in such efforts.

4.5.1 Clearlake Oaks County Water District Facilities

The Clearlake Oaks County Water District is the only major water and wastewater treatment purveyor serving the Clearlake Oaks area. Since disposal of effluent has been a problem in the past, CLOCWD made an agreement with LACOSAN to dispose of the treated effluent through a geyser injection process. CLOCWD shares the Southeast Regional Wastewater Treatment Plant with other jurisdictions in Lake County including the City of Clearlake.

4.5.2 MSR Determinations on Shared Facilities for Clearlake Oaks County Water District

A. Water Service

- 5-1) The District withdraws water from Clear Lake under a contract with Yolo County Flood Control & Water Conservation District, and is one of seventeen Clear Lake water purveyors participating in the Clear Lake Watershed Sanitary Survey (2012).
- 5-2) Geography in the area does not lend itself to shared water service facilities.
- 5-3) Joint use of water service infrastructure and facilities would be cost-prohibitive.

B. Wastewater Collection and Treatment Service

- 5-4) The Clearlake Oaks County Water District uses LACOSAN's Southeast Regional Wastewater Treatment Plant through a contract due to end in 2018. Also connected into the Southeast Regional Wastewater Treatment Plant are the City of Clearlake and the community of Lower Lake.
- 5-5) Sharing other wastewater treatment infrastructure such as piping or pump stations is not practical.

4.6 Government Structure and Accountability

Purpose:

- 1) *To consider the advantages and disadvantages of various government structures that could provide public services.***
- 2) *To evaluate the management capabilities of the organization.***
- 3) *To evaluate the accessibility and levels of public participation associated with the agency's decision-making and management processes.***

One of the most critical components of LAFCO's responsibilities is in setting logical service boundaries for communities based on their capacity to provide services to affected lands.

Lake 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 potential annexation areas.

4.6.1 Clearlake Oaks County Water District Government Structure

The Clearlake Oaks County Water District has an elected Board of Directors and a General Manager/Operations Manager. The government is described above in this report.

4.6.2 MSR Determinations on Local Accountability and Governance for the Clearlake Oaks County Water District

- 6-1) The Board of Directors has shown the ability to budget and plan for growth within its system and to meet demands on the system.
- 6-2) The staff of 14 is paid reasonable salaries and the operators continue to improve and pass additional certification tests.
- 6-3) Local accountability is attributed to open and publicized meetings and locally available staff.
- 6-4) The District has maintained relationships with the local media and is available to the ratepayers and the public. The District maintains a website but the website could include more information such as the budget.
- 6-5) The District is responsive to complaints and responds promptly to problems. If a problem arises outside of the office hours, the Clearlake Oaks County Water District is available 24 hours a day for emergency assistance.
- 6-6) The District prepares a capital improvement budget to help serve future service demands. A capital improvements program greatly facilitates the financing and addition of new infrastructure. This plan should be updated to reflect the needs identified in the Master Service Plan, once completed.
- 6-7) At present, the Office Manager/Bookkeeper performs managerial duties and the Operations Manager has the qualifications necessary to perform fieldwork for the necessary operation of the wastewater collection and treatment systems. This system of management appears to be working well for the district.
- 6-8) A District Master Plan will provide guidance for district management and timed programmed improvements.
- 6-9) Overall, the District appears to have an efficient management structure, responsive to legal, administrative, and operational issues that arise in the provision of water service and wastewater collection and treatment.
- 6-10) There are no alternative management structures which offer significant improvement over the current structure, and no recommendations are made related to changes in management structure and operations.

5 CLEARLAKE OAKS COUNTY WATER DISTRICT SPHERE OF INFLUENCE REPORT

This Sphere of Influence report is prepared for the Clearlake Oaks County Water District and is based upon Municipal Services Reviews for both sewer and water services that analyzed the Clearlake Oaks County Water District's capability to serve existing and future residents in the Clearlake Oaks area. Information contained in this Sphere of Influence report is only current as of the date of adoption.

5.1 Sphere of Influence Requirements

5.1.1 LAFCO's Responsibilities

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. 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 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.

5.1.2 Sphere of Influence Determinations

In determining the Sphere of Influence for each local agency, LAFCO must consider and prepare a statement of determinations with respect to each of the following:

1. The present and planned land uses in the area, including agricultural and open space lands;
2. The present and probable need for public facilities and services in the area;
3. The present capacity of public facilities and adequacy of public services which the agency provides, or is authorized to provide; and
4. The existence of any social or economic communities of interest in the area if the commission determines that they are relevant to the agency.
5. For an update of a sphere of influence of a city or special district that provides public facilities or services related to sewers, municipal and industrial water, or structural fire protection, the present and probable need for those public facilities and services of any disadvantaged unincorporated communities within the existing Sphere of Influence.

5.1.3 Possible Approaches to the Sphere of Influence

LAFCO may recommend government reorganizations to particular agencies in the county, using the SOIs as the basis for those recommendations. Based on review of the guidelines of Lake LAFCO as well as other LAFCOs in the State, various conceptual approaches have been identified from which to choose in designating an SOI. These seven approaches are explained below:

- 1) Coterminous Sphere: A Coterminous sphere means that the sphere for a city or special district that is the same as its existing boundaries.
- 2) Annexable Sphere: A sphere larger than the agency's boundaries identifies areas the agency is expected to annex. The annexable area is outside its boundaries and inside the sphere. This is the recommendation for the Clearlake Oaks County Water District.
- 3) Detachable Sphere: A sphere that is smaller than the agency's boundaries identifies areas the agency is expected to detach. The detachable area is the area within the agency bounds but not within its sphere.
- 4) Zero Sphere: A zero sphere indicates the affected agency's public service functions should be reassigned to another agency and the agency should be dissolved or combined with one or more other agencies.
- 5) Consolidated Sphere: A consolidated sphere includes two or more local agencies and indicates the agencies should be consolidated into one agency.
- 6) Limited Service Sphere: A limited service sphere is the territory included within the SOI of a multi-service provider agency that is also within the boundary of a limited purpose district which provides the same service (e.g., fire protection), but not all needed services. Territory designated as a limited service SOI may be considered for annexation to the limited purpose agency without detachment from the multi-service provider.

This type of SOI is generally adopted when the following conditions exist:

- a) the limited service provider is providing adequate, cost effective and efficient services,
- b) the multi-service agency is the most logical provider of the other services,
- c) there is no feasible or logical SOI alternative, and
- d) inclusion of the territory is in the best interests of local government organization and structure in the area.

Government Code §56001 specifically recognizes that in rural areas it may be appropriate to establish limited purpose agencies to serve an area rather than a single service provider, if multiple limited purpose agencies are better able to provide efficient services to an area rather than one service district.

Moreover, Government Code Section §56425(i), governing sphere determinations, also authorizes a sphere for less than all of the services provided by a district by requiring a district affected by a sphere action to "establish the nature, location, and extent of any functions of classes of services provided by existing districts" recognizing that more than one district may serve an area and that a given district may provide less than its full range of services in an area.

- 7) Sphere Planning Area: LAFCO may choose to designate a sphere planning area to signal that it anticipates expanding an agency's SOI in the future to include territory not yet within its official SOI.

5.1.4 SOI Update Process

LAFCO is required to establish SOIs for all local agencies and enact policies to promote the logical and orderly development of areas within the SOIs. Furthermore, LAFCO must update those SOIs every five years. In updating the SOI, LAFCO is required to conduct a municipal service review (MSR) and adopt related determinations.

This report identifies preliminary SOI policy alternatives and recommends SOI options for the Clearlake Oaks County Water District. Development of the updated SOI report involves additional steps, including opportunity for public input at a LAFCO public hearing, and consideration and changes made by Commissioners.

LAFCO must notify affected agencies 21 days before holding a public hearing to consider the SOI and may not update the SOI until after that hearing. The LAFCO Executive Officer must issue a report including recommendations on the SOI amendments and updates under consideration at least five days before the public hearing.

5.1.5 SOI Amendments and CEQA

LAFCO has the discretion to limit SOI updates to those that it may process without unnecessarily delaying the SOI update process or without requiring its funding agencies to bear the costs of environmental studies associated with SOI expansions. Any local agency or individual may file a request for an SOI amendment. The request must state the nature of and reasons for the proposed amendment, and provide a map depicting the proposal.

LAFCO may require the requester to pay a fee to cover LAFCO costs, including the costs of appropriate environmental review under CEQA. LAFCO may elect to serve as lead agency for such a review, may designate the proposing agency as lead agency, or both the local agency and LAFCO may serve as co-lead agencies for purposes of an SOI amendment. Local agencies are encouraged to consult with LAFCO staff early in the process regarding the most appropriate approach for the particular SOI amendment under consideration.

Certain types of SOI amendments are likely exempt from CEQA review. Examples are SOI expansions that include territory already within the bounds or service area of an agency, SOI reductions, and zero SOIs. SOI expansions for limited purpose agencies that provide services (e.g., fire protection, levee protection, cemetery, and resource conservation) needed by both rural and urban areas are typically not considered growth-inducing and are likely exempt from CEQA. Similarly, SOI expansions for districts serving rural areas (e.g., irrigation water) are typically not considered growth-inducing.

Remy et al. write

In City of Agoura Hills v. Local Agency Formation Commission (2d Dist.1988) 198 Cal.App.3d480, 493-496 [243 Cal.Rptr.740] (City of Agoura Hills), the court held that a LAFCO's decision to approve a city's sphere of influence that in most respects was coterminous with the city's existing municipal boundaries was not a "project" because such action did not entail any potential effects on the physical environment.⁵⁷

The Sphere of Influence for the Clearlake Oaks County Water District will be the same as the Sphere which was previously adopted; no environmental review will be required.

⁵⁷ Remy, Michael H., Tina A. Thomas, James G. Moose, Whitman F. Manley, Guide to CEQA, Solano Press Books, Point Arena, CA, February 2007, page 111.

5.2 Present and Planned Land Uses in the Clearlake Oaks County Water District Area, Including Agricultural and Open Space Lands

5.2.1 Lake County General Plan

The General Plan states the following regarding Clearlake Oaks:

Clearlake Oaks Area. This community is primarily a resort community which frequently experiences congestion problems due to State Highway 20 bisecting the community. Growth projections on the Land Use Map for this community are 2,731 persons. Conversion of Suburban Reserve lands should not take place without meeting the criteria outlined in the Implementation Chapter. This Suburban Reserve area, when converted, would promote 697 additional persons. Developments east and west along Highway 20 should be carefully considered to reduce the number of new access points along the highway. As with Upper Lake, it is recommended that a frontage road to the east along Highway 20 be considered, in order to promote safer traffic flows. Approximately 90 acres of Class I-IV soils have been designated Suburban Reserve due to lot area character and close proximity to sewer and other public services. Adjacent areas to the east and south are designated Rural Residential, with approximately 300 acres considered prime soils. The majority of these areas have existing acreages which are not viable economic units for exclusive agricultural operations.

The General Plan Designations within the District are as follows:

<u>General Plan Designation</u>	<u>Estimated Acres</u>
Commercial	68.44
Commercial Highway	31.49
Commercial Industrial	0.25
Resort Commercial	41.41
Service Commercial	41.83
Manufacturing	1.12
Flood Plain	7.92
Public Land	12.03
Rural Land	639.48
Rural Residential	374.42
Suburban Residential	846.89
Suburban Residential Reserve	220.62
Urban Reserve	20.51
TOTAL	2,306.41

The General Plan Designations for the Sphere of Influence are as follows:

General Plan Designation	Estimated Acres
Resort Commercial	11
Service Commercial	1
Rural Residential	28
Suburban Residential	10
Suburban Residential Reserve	<u>1</u>
TOTAL	51

5.2.2 Lake County Zoning

The zoning designations within the District are as follows:

Zoning	Estimated Acres
A Agriculture	152.13
APZ Agriculture Preserve	43.6
C-1 Commercial	0.26
C-2 Commercial	66.73
C-3 Commercial	38.22
CH Highway Commercial	0.82
CR Recreation Commercial	41.36
M-1 Industrial	6.24
O Open Space	32.91
PD Planned Development	123.51
PDC Planned Development Commercial	2.28
R-1 Single Family Residential	672.2
R-2 Two-Family Residential	137.0
R-3 Multiple Family Residential	11.99
R-L Rural Lands	62.71
RR Rural Residential	734.9
SR Suburban Reserve	15.37
U Unclassified	163.84
TOTAL	2,306.07

The zoning designations within the Sphere of Influence are as follows:

Zoning	Estimated Acres
CR Recreation Commercial	11
O Open Space	1
PDC Planned Development Commercial	1
R-1 Single Family Residential	11
RR Rural Residential	26
SR Suburban Reserve	<u>1</u>
TOTAL	51

5.2.3 *SOI Determinations for Present and Planned Land Use*

Note: Placement in a sphere horizon is not intended to imply that annexation will take place.

- 1-1] Land annexed to the Clearlake Oaks County Water District and developed at Clearlake Oaks County Water District densities can help to preserve agricultural land by accommodating more development on less land.
- 1-2] Public health is better when development is connected to sewer and water systems.
- 1-3] LAFCO shall support appropriate buffer areas separating agricultural lands from lands with densities higher than 1 unit to 5 acres.
- 1-4] There is no land use plan which would indicate that a larger Sphere of Influence is necessary.

5.3 *Municipal Services – Present and Probable Need*

5.3.1 *Municipal Services Background*

LAFCO is responsible for determining if an agency is reasonably capable of providing needed infrastructure and services to serve areas within its Sphere of Influence. LAFCO is required to evaluate present and long-term infrastructure demands and resource availability and to evaluate whether the resources and services are available at needed service levels and that orderly maintenance and expansion of such resources and services are made inline with increasing demands.

Population in the Clearlake Oaks County Water District is estimated by the District to be 3,858.⁵⁸

5.3.2 *SOI Determinations on Facilities and Services Present and Probable Need for Clearlake Oaks County Water District*

- 2-1] The Clearlake Oaks County Water District should have a Capital Improvements Plan to show how much new development will pay to provide the needed services.

5.4 *Public Facilities Present and Future Capacity*

5.4.1 *Capacity Background*

A. Water Service

⁵⁸ Clearlake Oaks County Water District, Darin McCosker, E-Mail: gm@clocwd.org, September 24, 2010.
LAKE LAFCO MSR AND SOI July 17, 2013
Clearlake Oaks County Water District
Adopted Resolution 2013-0008 MSR
Adopted Resolution 2013-0009 Sphere of Influence

While there is an identified need to update the water service operations plan to accurately reflect the current programming and operations, the District appears able and capable of accommodating growth in the future.

B. Wastewater Collection and Treatment

The wastewater collection and disposal system has problems, especially during wet weather. These problems will need to be resolved before additional services can be added.

5.4.2 *SOI Determinations on Public Facilities Present and Future Capacity for Clearlake Oaks County Water District*

- 3-1] Water service could be extended but wastewater treatment service cannot be substantially extended at this time.
- 3-2] A small Sphere of Influence is adequate for growth in the next five years.
- 3-3] The Sphere of Influence for the extended time horizons of 6 to 11 years and 12 to 20 years is zero. No land is expected to be annexed to the District except the land within the 0-5 year time horizon.

5.5 Social or Economic Communities of Interest

5.5.1 *Community Background*

Clearlake Oaks is a Census-Designated Place (CDP). This means that US Census data is collected even though the community is not an incorporated city. Redevelopment of areas within the District is expected rather than annexation of new land to the District.

5.5.2 *SOI Determinations on Social or Economic Communities of Interest for Clearlake Oaks County Water District*

- 4-1] Clearlake Oaks is both a social and an economic community. The community has a Post Office; civic, social and religious organizations; shopping; and an elementary school. The community does not have a high school, students attend Lower Lake High School.
- 4-2] The Clearlake Oaks County Water District shall be provider of municipal water and wastewater treatment service in the Clearlake Oaks County Water District area.
- 4-3] The top priority for water service shall remain to serve the existing service area.
- 4-4] LAFCO is charged with overseeing orderly development in an area. The County is charged with Land Use Planning.

5.6 Disadvantaged Unincorporated Communities

5.6.1 Disadvantaged Unincorporated Community Background

The State law (SB 244) requires LAFCO to consider whether or not an area is a Disadvantaged Unincorporated Community (DUC). A DUC is an area where the Median Household Income is less than 80% of the State of California Median Household Income of \$60,833.⁵⁹ Eighty percent of the 2010 California Median Household Income would be \$48,666.

Disadvantaged unincorporated communities (DUCs) are defined as “a territory that constitutes all or a portion of a ‘disadvantaged community’ including 12 or more registered voters or some other standard as determined by the commission.” In California Government Code Section 65302.30 (a) “Community” means an inhabited area within a city or county that is comprised of no less than 10 dwellings adjacent or in close proximity to one another.

The Median Household Income in the Clearlake Oaks Census Designated Place in 2009⁶⁰ was reported as \$34,934.

5.6.2 SOI Determinations regarding the present and probable need for public facilities and services of any disadvantaged unincorporated communities within the existing Sphere of Influence.

- 5-1] The determination of a Disadvantaged Unincorporated Community appears to be subjective by agency. According to 2010 US Census Designated Places Data, the Clearlake Oaks area meets the criteria to be considered a disadvantaged unincorporated community. In addition other state and federal agencies (SWRCB, CDPH, USDA Rural Development) consider the Clearlake Oaks area as well as the entire unincorporated area of Lake County to be disadvantaged since those agencies use countywide data.
- 5-2] A majority of the area within and adjacent to areas served by the Clearlake Oaks County Water District and its SOI are considered disadvantaged with a median household of less than 80 percent of the statewide median income. The Median Household Income for California is \$60,883 and the Median Household Income for Lake County is \$39,491 and the Median Household income for the Clearlake Oaks area is \$34,934 to be considered a DUC the Median Household Income must be less than \$48,706

⁵⁹ US Census Bureau, <http://quickfacts.census.gov/qfd/states/06/0685586.html>, November 7, 2012

⁶⁰ <http://www.city-data.com/income/income-Middletown-California.html>, January 16, 2013.

ABBREVIATIONS

AB	Assembly Bill
ADWF	Average Dry Weather Flows
AWWF	Average Wet Weather Flows
BOD	Biological Oxygen Demand (water quality)
CA	California
CDO	Cease and Desist Order
CEQA	California Environmental Quality Act
CFD	Community Facilities District
CKH Act	Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000
CLMSD	City of Lakeport Municipal Services District
CLOCWD	Clearlake Oaks County Water District
CVRWQCB	Central Valley Regional Water Quality Control Board
CWC	California Water Code
District	Clearlake Oaks County Water District
DO	Dissolved Oxygen
DWR	Department of Water Resources (California)
ERAF	Educational Revenue Augmentation Fund
FPD	Fire Protection District
gpd	gallons per day
gpm	gallons per minute
hp	horse power
HRT	Hydraulic Residence Time (wastewater treatment)
HVLCSD	Hidden Valley Lake Community Services District
I&I	Inflow and Infiltration
ISO	Insurance Service Organization (Fire Protection)
LACOSAN	Lake County Sanitation District
LAFCO	Local Agency Formation Commission

LAIF	Local Agency Investment Fund
MFD	Multiple Family Dwelling-duplex, triplex, apartment, condominium
mgd	million gallons per day
MHD	Mobilehome or Single Family Dwelling
MPN	Most Probable Number
MSR	Municipal Service Review (LAFCO)
NCPA	Northern California Power Agency
OPR	Office of Planning and Research (California)
PG&E	Pacific Gas and Electric Company
psi	pounds per square inch
pvc	polyvinyl chloride
PWWF	Peak Wet Weather Flow
RWQCB	Regional Water Quality Control Board
SFD	Single Family Dwelling
SOI	Sphere of Influence (LAFCO)
SRT	Sludge Retention Time
SS	Suspended Solids
SSMP	Sanitary Sewer Management Plan
TSS	Total Suspended Solids
ULFT	ultra-low-flow-toilet
USDA	United States Department of Agriculture
VFD	variable frequency drive
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

DEFINITIONS

Acre Foot: The volume of water that will cover one acre to a depth of one foot, 325,850 U.S. Gallons or 1,233,342 liters (approximately).

Agriculture: Use of land for the production of food and fiber, including the growing of crops and/or the grazing of animals on natural prime or improved pasture land.

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.

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. 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.

HRT: Hydraulic Residence Time = the average time the water stays in the system = total volume/ influent flow rate.⁶¹

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 both 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.

⁶¹ <http://www.waterandwastewater.com/cgi-bin/yabb/YaBB.pl?num=1237248109>, February 3, 2011.

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.

Land Use Classification: A system for classifying and designating the appropriate use of properties.

Leapfrog Development; New development separated from existing development by substantial vacant land.

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.

Maximum Contaminant Level (MCL): The designation given by the U.S. Environmental Protection Agency (USEPA) to water-quality standards promulgated under the Safe Drinking Water Act. The MCL is the greatest amount of a contaminant that can be present in drinking water without causing a risk to human health.⁶²

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

Mean Sea Level: The average altitude of the sea surface for all tidal stages.

⁶² <http://ga.water.usgs.gov/edu/dictionary.html>

Mello-Roos Bonds: Locally issued bonds that are repaid by a special tax imposed on property owners within a community facilities district established by a governmental entity. The bond proceeds can be used for public improvements and for a limited number of services. Mello-Roos Bonds are named after the program's legislative authors.

MPN Method: The MPN method attempts, by serial dilution, to introduce one, and only one, bacteria into a fermentation tube containing media for the bacteria to thrive on. By observing gas production or the lack of gas production, it is possible to determine the probable number of bacteria originally present in the sample. In performing the analysis, it is necessary to have five tubes each of at least three decimal dilutions. The goal of the dilution scheme is to have some tubes positive with gas production and some tubes negative or no gas production. The purity of the water under study with experience will determine the decimal dilutions to be used. Dilution of 1, 0.1, and 0.01 mL can be used successfully for a wastewater treatment plant effluent which is within the 200 coliform/100 mL discharge limit for chlorinated effluents.⁶³

Ordinance: A law or regulation set forth and adopted by a governmental authority.

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.

Per Capita Water Use: The water produced by or introduced into the system of a water supplier divided by the total residential population; normally expressed in gallons per capita per day (gpcd).⁶⁴

Percolation: The downward movement of water through the soil or alluvium to a ground water table.⁶⁵

pH: a measure of the relative acidity or alkalinity of water. Water with a pH of 7 is neutral; lower pH levels indicate increasing acidity, while pH levels higher than 7 indicate increasingly basic solutions.⁶⁶

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.

Potable Water: Water of a quality suitable for drinking.⁶⁷

⁶³ <http://water.me.vccs.edu/courses/ENV149/coliform.htm>, February 3, 2011.

⁶⁴ <http://rubicon.water.ca.gov/v1cwp/glssry.html>

⁶⁵ <http://rubicon.water.ca.gov/v1cwp/glssry.html>

⁶⁶ <http://ga.water.usgs.gov/edu/dictionary.html#P>, February 3, 2011.

⁶⁷ <http://ga.water.usgs.gov/edu/dictionary.html>

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.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Proposition 13: (Article XIII A of the California Constitution) Passed in 1978, this proposition enacted sweeping changes to the California property tax system. Under Prop. 13, property taxes cannot exceed 1% of the value of the property and assessed valuations cannot increase by more than 2% per year. Property is subject to reassessment when there is a transfer of ownership or improvements are made.⁶⁸

Proposition 218: (Article XIII D of the California Constitution) This proposition, named "The Right to Vote on Taxes Act", filled some of the perceived loopholes of Proposition 13. Under Proposition 218, assessments may only increase with a two-thirds majority vote of the qualified voters within the District. In addition to the two-thirds voter approval requirement, Proposition 218 states that effective July 1, 1997, any assessments levied may not be more than the costs necessary to provide the service, proceeds may not be used for any other purpose other than providing the services intended, and assessments may only be levied for services that are immediately available to property owners.⁶⁹

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Ranchette: A single dwelling unit occupied by a non-farming household on a parcel of 2.5 to 20 acres that has been subdivided from agricultural land.

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 enter the wastewater collection system during and shortly after a rain event. RDI/I consists of stormwater inflow and rainfall-dependent infiltration.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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

Sanitary Sewer: A system of subterranean conduits that carries refuse liquids or waste matter to a plant where the sewage is treated, as contrasted with storm drainage systems (that carry surface water) and septic tanks or leech fields (that hold refuse liquids and waste matter on-site).

SCADA: SCADA is acronym for Supervisory Control and Data Acquisition. It is a kind of software application program used for process control and gather real time data from remote locations for exercising this control on equipments and conditions. The SCADA System consists of hardware and software components. The hardware collects and feeds data into a computer with SCADA software installed. The data is then processed by the computer before presenting it in a timely

⁶⁸ http://www.californiataxdata.com/A_Free_Resources/glossary_PS.asp#ps_08

⁶⁹ http://www.californiataxdata.com/A_Free_Resources/glossary_PS.asp#ps_08

manner. The function of SCADA is recording and logging all events in a file that is stored in a hard disk or sending them to a printer. If conditions become hazardous, SCADA sounds warning alarm.⁷⁰

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

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

Sewage: Sewage is the wastewater released by residences, businesses and industries in a community. It is 99.94 percent water, with only 0.06 percent of the wastewater dissolved and suspended solid material. The cloudiness of sewage is caused by suspended particles which in untreated sewage ranges from 100 to 350 mg/l.⁷¹

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 estimate the amount of wastewater generated by a single-family residence.

Specific Capacity: The specific capacity of a water well depends on hydraulic characteristics of the aquifer and on the construction of the well. Specific capacity is determined by dividing the wells production by the drawdown that occurs during pumping. Higher specific capacities in wells tend to be indicative of higher aquifer production.⁷²

Specific Yield: The specific yield for a water well is the percent of space in the ground that will drain by gravity when the water table drops. Specific yield is reported as a percent. Higher specific yields tend to be indicative of higher aquifer production. An example of a good specific yield is 7 percent, which is a typical average specific yield of aquifers in the Sacramento Valley.⁷³

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.

SRT: Sludge Retention Time is the average time the sludge stays in the system = total amount of sludge/sludge wastage rate, including solids in the effluent.⁷⁴

⁷⁰ <http://www.scadaworld.net/>, July 3, 2009.

⁷¹ <http://ohioline.osu.edu/aex-fact/0768.html>, February 3, 2011.

⁷² Lake County Watershed Protection District, "Lake County Groundwater Management Plan", March 31, 2006, P. 2-4.

⁷³ Lake County Watershed Protection District, "Lake County Groundwater Management Plan", March 31, 2006, P.2-4.

⁷⁴ <http://www.waterandwastewater.com/cgi-bin/yabb/YaBB.pl?num=1237248109>, February 3, 2011.

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.

Total Dissolved Solids (TDS): A quantitative measure of the residual minerals dissolved in water that remains after evaporation of a solution. Usually expressed in milligrams per liter. Abbreviation: TDS.⁷⁵

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

⁷⁵ <http://rubicon.water.ca.gov/v1cwp/glssry.html>

Transmissivity: Transmissivity is a term used to define the ability of an aquifer to convey or transport water, similar to the capacity of a pipeline. Transmissivity is related to hydraulic conductivity and saturated thickness of an aquifer or groundwater basin. Hydraulic conductivity is that rate at which groundwater moves through the aquifer. More porous aquifers, such as sand and gravel aquifers, have high hydraulic conductivities. The saturated thickness is the total depth of groundwater in an aquifer or basin. The term transmissivity combines both these terms so it is a good overall indication of the capacity of a groundwater basin to produce water. Higher transmissivity values tend to be indicative of higher aquifer production. An example of a good transmissivity is 100,000 gallons per day per foot (gpd/ft), which is the average transmissivity of a productive aquifer in the Sacramento Valley.⁷⁶

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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.

Variances and Exemptions: Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

Wastewater: Wastewater is used water. It includes substances such as human waste, food scraps, oils, soaps and chemicals. In homes, this includes water from sinks, showers, bathtubs, toilets, washing machines and dishwashers. Businesses and industries also contribute their share of used water that must be cleaned. Wastewater also includes storm runoff. Although some people assume that the rain that runs down the street during a storm is fairly clean, it isn't. Harmful substances that wash off roads, parking lots, and rooftops can harm our rivers and lakes.⁷⁷

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

⁷⁶ Lake County Watershed Protection District, “Lake County Groundwater Management Plan”, March 31, 2006, P. 2-4.

⁷⁷ <http://ga.water.usgs.gov/edu/wuww.html>, February 3, 2011.

Wastewater treatment: The major aim of wastewater treatment is to remove as much of the suspended solids as possible before the remaining water, called effluent, is discharged back to the environment. As solid material decays, it uses up oxygen, which is needed by the plants and animals living in the water.

"Primary treatment" removes about 60 percent of suspended solids from wastewater. This treatment also involves aerating (stirring up) the wastewater, to put oxygen back in. Secondary treatment removes more than 90 percent of suspended solids.⁷⁸

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

Zoning: The division of a city by legislative regulations into areas, or zones, that specify allowable uses for real property and size restrictions for buildings within these areas; a program that implements policies of the general plan.

⁷⁸ <http://ga.water.usgs.gov/edu/wuww.html>, February 3, 2011.

REFERENCES

- Brelje & Race Consulting Civil Engineers, "Preliminary Engineering Report Bonanza Springs Water System CSA #7 Lake County Special Districts", December 2006, page 6.
- California Water Association, <http://www.calwaterassn.com/conservation.htm>, July 26, 2010.
- Clearlake Oaks County Water District, 2010/2011 Fiscal Year Budget, "A Message from the President of the Board of Directors," September 22, 2010.
- Clearlake Oaks County Water District, Larry Swift, E-Mail: l.swift@clocwd.org, Phone: 707-998-3322, September 24, 2010, June 9, 2011.
- Clearlake Oaks County Water District, fax: 707-998-9783, September 28, 2010.
- Clearlake Oaks County Water District, "Financial Statements June 30, 2009," Prepared by Larry Bain CPA, 2148 Frascati Drive, El Dorado Hills, CA 95762.
- Clearlake Oaks County Water District, <http://clocwd.org/about.html>, June 14, 2010.
- Clearlake Oaks County Water District, LAFCO Questionnaire, July 29, 2010.
- Clearlake Oaks County Water District, Ordinance No. 68, November 4, 2008.
- Clearlake Oaks County Water District, Ordinance No. 71, November 6, 2008.
- <http://ga.water.usgs.gov/edu/dictionary.html>
- <http://ga.water.usgs.gov/edu/dictionary.html#P>, February 3, 2011.
- <http://ohioline.osu.edu/aex-fact/0768.html>, February 3, 2011.
- <http://rubicon.water.ca.gov/v1cwp/glssry.html>
- <http://water.me.vccs.edu/courses/ENV149/coliform.htm>, February 3, 2011.
- http://www.californiataxdata.com/A_Free_Resources/glossary_PS.asp#ps_08
- <http://www.relocateamerica.com/california/cities/clearlake-oaks>, June 16, 2010.
- <http://www.scadaworld.net/>, July 3, 2009.
- <http://www.waterandwastewater.com/cgi-bin/yabb/YaBB.pl?num=1237248109>, February 3, 2011.
- Konocti Unified School District <http://www.konoctiusd.org/index.cfm?fuseaction=schools>, February 4, 2011.
- Lake County General Plan Page 2-3.
<http://www.co.lake.ca.us/Assets/CDD/2008+General+Plan+Final+Version/2008+General+Plan+Docs/CH2.pdf>, June 16, 2010.
- Lake County,
<http://www.co.lake.ca.us/Assets/CDD/2008+General+Plan+Final+Version/2008+General+Plan+Docs/Maps1.pdf>, February 2, 2011.

Lake County,

http://www.co.lake.ca.us/Government/DepartmentDirectory/Water_Resources/Division_Programs/Groundwater_Management.htm

Lake County, Mark Dellinger, Special Districts Administrator, 230A Main Street, Lakeport, CA 95453, Ph: (707) 263-0119 F: (707) 263-3826, October 22, 2008.

Lake County, Special Districts Administration,

http://www.co.lake.ca.us/Government/Directory/Special_Districts/Wastewater_Systems/Effluent_Pipeline.htm, February 3, 2011.

Lake County Water Demand Forecast by CDM and California DWR Northern District, P. A-14.

Lake County Watershed Protection District, "Lake County Water Inventory and Analysis", March 2006.

NSF International, "Feasibility of an Economically Sustainable Point-of-Use/Point-of-Entry Decentralized Public Water System Final Report", March 2005, p18.
nsf.org/business/.../pdf/GrimesFinalReport_Dec05.pdf

Remy, Michael H., Tina A. Thomas, James G. Moose, Whitman F. Manley, Guide to CEQA, Solano Press Books, Point Arena, CA, February 2007, page 111.

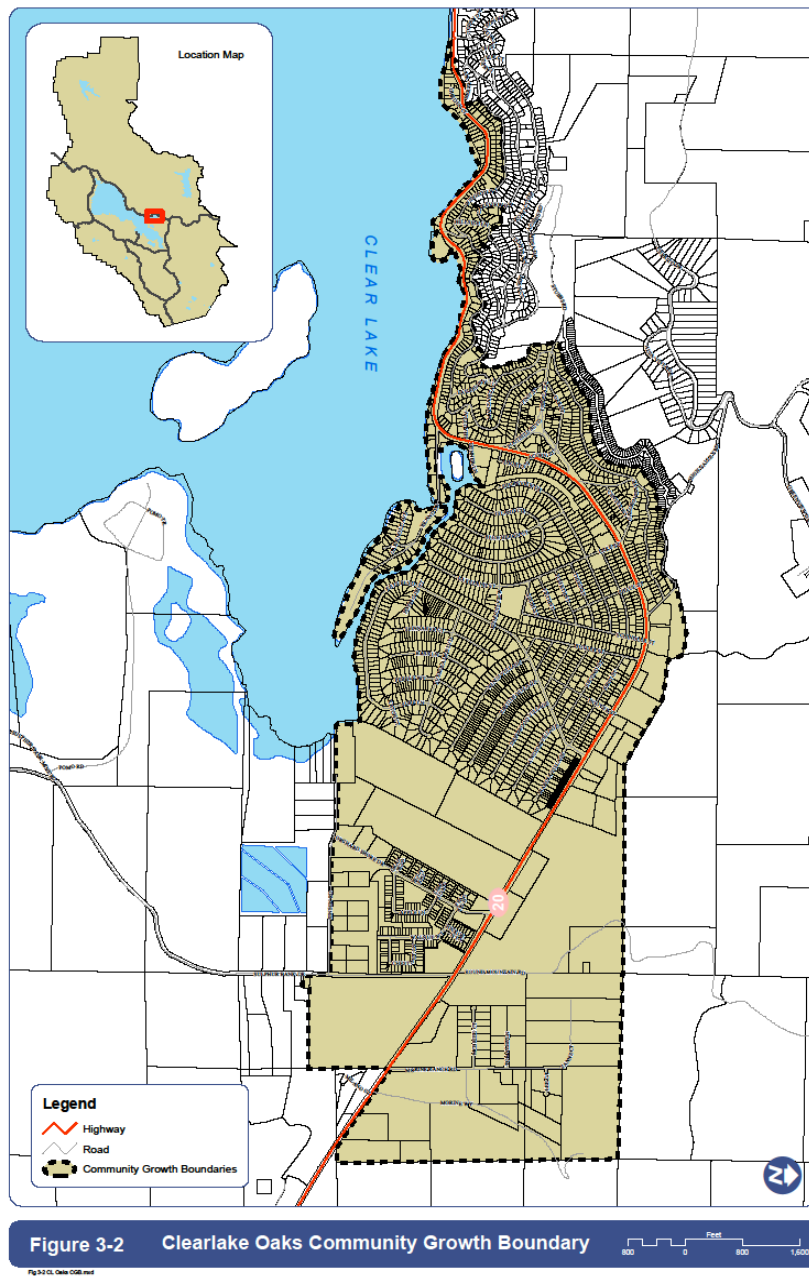
State of California, 2008-2009 Project Priority List for State Revolving Fund Program, August 28, 2008, Page 14.

State of California, Central Valley Regional Water Quality Control Board, Agenda, July 26, 2001, http://www.waterboards.ca.gov/centralvalley/board_info/meetings/0107ag.pdf, February 7, 2010.

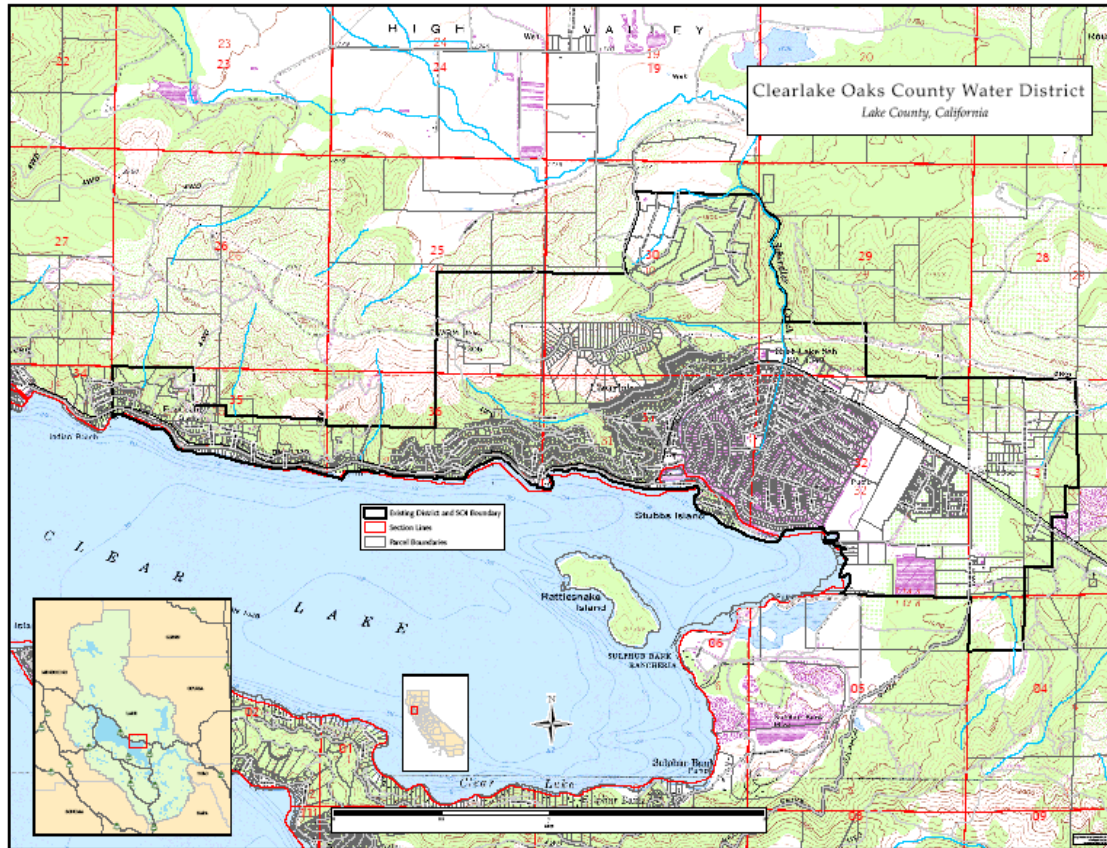
State of California, Department of Finance, E-4 Population Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.

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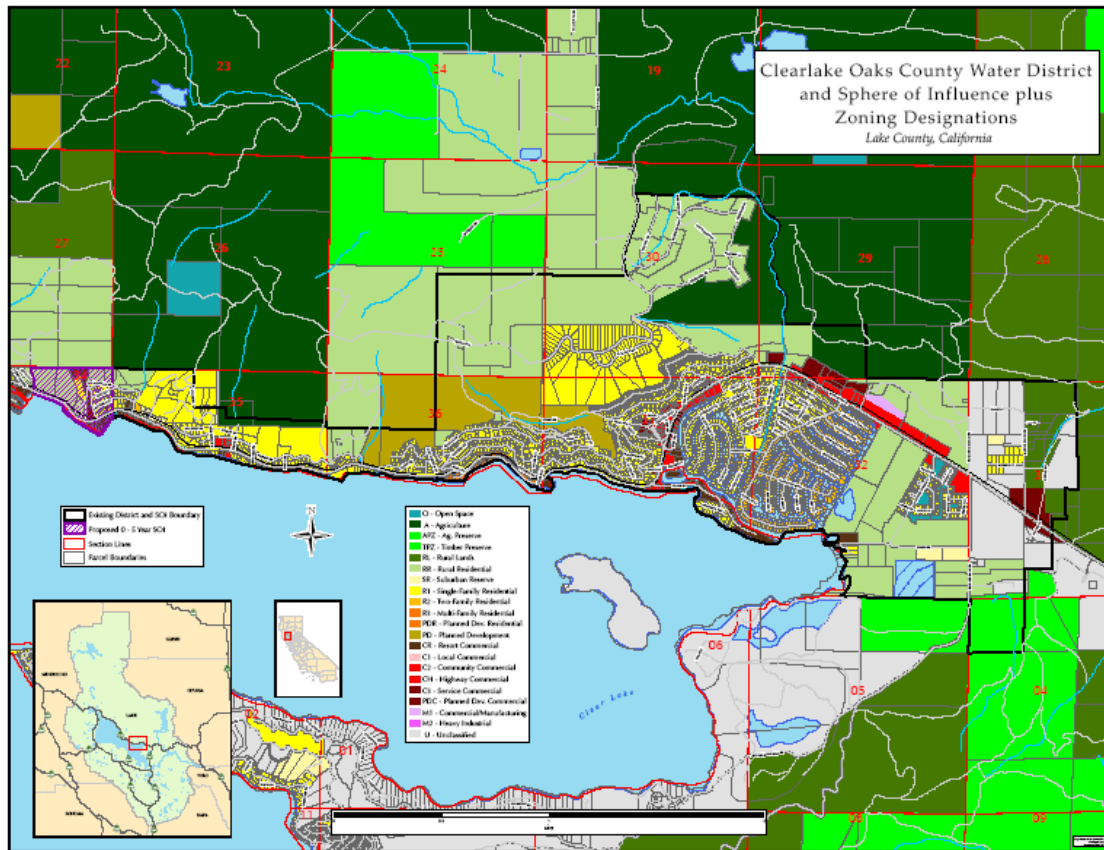
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