

Wastewater Revenue Program Report

January 2021



**LOS ANGELES COUNTY
SANITATION DISTRICTS**

Converting Waste Into Resources

TABLE OF CONTENTS

INTRODUCTION.....	1
Key Objectives.....	1
Meet On-Going Expenses.....	1
Credit Rating.....	2
Prudent Reserves	2
THE SANITATION DISTRICTS OF LOS ANGELES COUNTY.....	3
Joint Outfall System.....	7
Outlying Districts.....	8
Contract Districts	9
BUDGETARY POLICIES AND REQUIREMENTS	10
California Constitution	10
California Health & Safety Code	11
Amended Joint Administration Agreement (2014)	11
Joint Outfall Agreement (July 1, 2020)	12
Investment Policy	13
Debt Management Policy	14
Financial Reserve Policy	15
DEVELOPMENT OF EXISTING REVENUE PROGRAM	17
Existing Sources of Revenue.....	17
Charge Structure	18
Mass Loadings.....	18
Sewage Units.....	21
Total System Loadings	23
Rate Development	23
Method Of Collection	24
IMPLEMENTATION PROCESS	26
Notification.....	26
Public Hearing	26
Ordinances	27
CONNECTION FEE PROGRAM	28

TABLE OF CONTENTS cont

Development	28
Mass Loadings.....	28
Capacity Units.....	29
Implementation	30

TABLE OF CONTENTS cont

INTRODUCTION

Operating a large regional wastewater management (sewerage) system that complies with the myriad of state and federal regulations is an expensive undertaking. As documented elsewhere, the Sanitation Districts have taken a number of steps to reduce costs and to generate income by turning wastewater into resources. Despite those efforts, the sewerage system does not generate enough revenue to be financially self-sufficient. As a result, the Districts must levy charges against the users of the sewerage system to make up this shortfall. The process for doing this is outlined in the revenue program developed by the Districts and discussed below.

The report first provides an overview of the Districts and the various wastewater systems operated by the Districts. It will then identify and summarize the applicable statutory requirements pertaining to revenue programs, budgeting processes, and rate setting. This will, in turn, be followed by a description of the existing revenue program and the elements that went into its development. Finally, the report will summarize all of the Districts' budgetary information and provide the applicable ordinances.

KEY OBJECTIVES

The entire revenue program is predicated on three key objectives:

- Revenues must be sufficient to meet all current on-going operational and financial obligations
- Maximize the Districts' credit rating to optimize financial terms for funding future capital improvements
- Maintain financial stability of the organization through the establishment of prudent reserves

Meet On-Going Expenses

On the surface this appears to be self-evident; revenues should equal expenses. However, it must be remembered that expenses, particularly those related to capital projects, can vary significantly from year to year. Literally, this means that user rates (which generate the bulk of the revenue) should also vary significantly from year to year. Unfortunately, this wouldn't allow ratepayers, whether residential or commercial, to effectively budget for expenses. To eliminate this problem, rate projections must be made over an extended period with smooth transitions from year to year. In some years, rates would be slightly higher than needed, allowing a limited amount of funds to be placed into reserves. In other years, rates would be slightly less than needed and the limited funds previously accumulated in reserves could be used to meet the shortfall.

Credit Rating

The Districts¹ are currently rated Aa1 (Moody's) and AAA (S&P). This has allowed the Districts to fund certain capital projects with bonds issued at historically low interest rates, which translates to lower user charge rates. In fact, in 2011 and 2013 combined, the Districts were able to save \$40 million by refinancing existing debt at those low rates. In looking to the future, there are additional capital projects (such as the Clearwater project) that will require some type of long-term financing. Protecting the Districts' credit rating will go a long way to minimizing the cost of this vital project.

One of the key criteria the rating agencies use in evaluating credit worthiness is a factor known as the "coverage ratio." This is essentially a ratio of net revenues to debt service. In general, bond covenants require a minimum of ratio of 1.1 to 1.2. In order to protect the Districts credit rating, it is recommended that this ratio be maintained at a level of 1.5.

Prudent Reserves

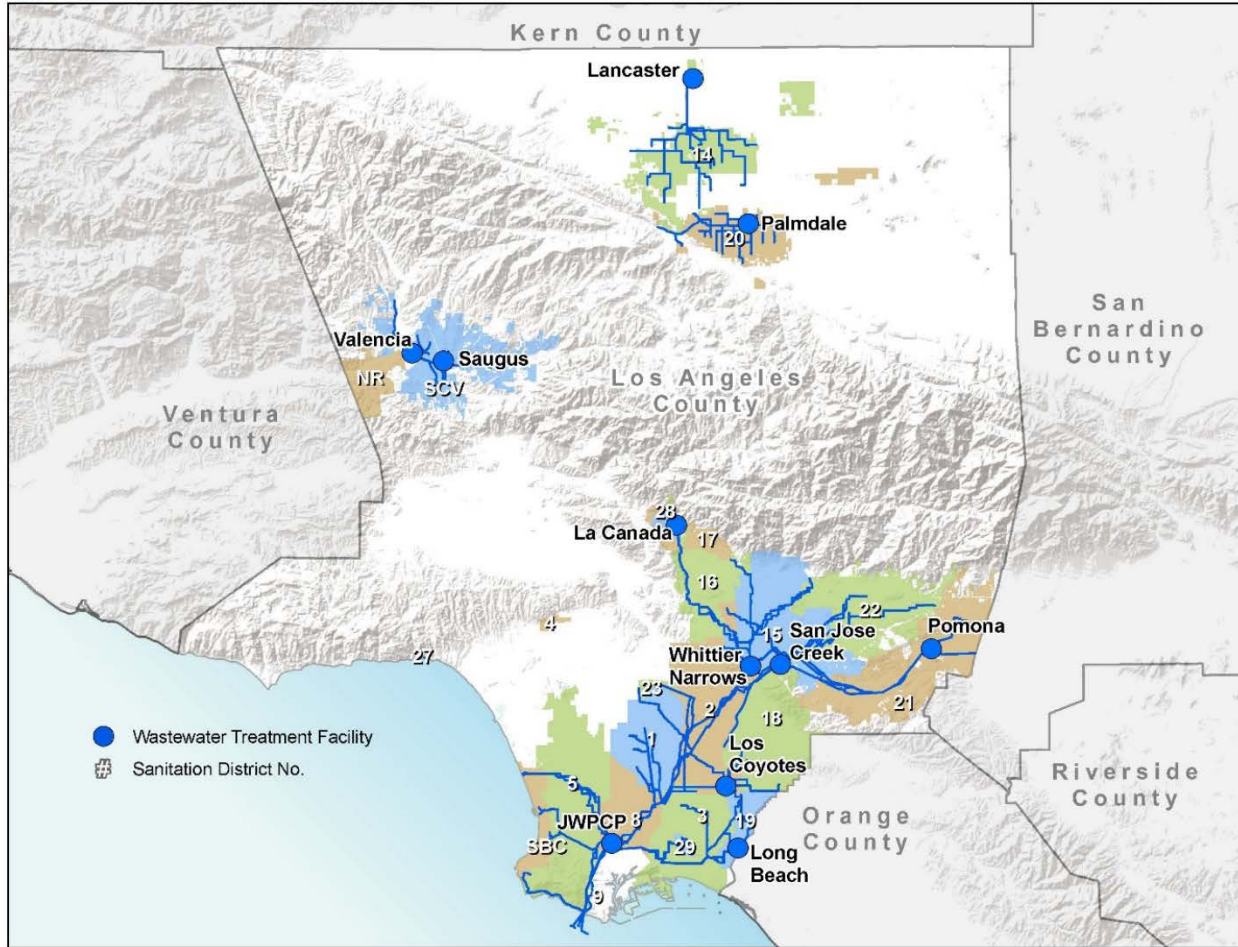
Prudent reserves are another key factor the rating agencies use in evaluating credit worthiness. They want to ensure that an agency has the financial stability to weather economic downturns and unexpected emergencies/unplanned capital projects. For purposes of demonstrating the Districts' financial stability, it is proposed that the targeted level of reserves be set equal to six months of operations and maintenance (O&M) plus one year of debt service.

¹ Based on the most recent ratings of the Joint Acquisition Agreement Bonds. Individual Districts may have a different rating on individual District bonds.

THE SANITATION DISTRICTS OF LOS ANGELES COUNTY

The Sanitation Districts of Los Angeles County are a confederation of 24 independent special districts that provide environmentally sound, cost-effective wastewater and solid waste management for approximately 5.6 million people in Los Angeles County. The Sanitation Districts' service area covers approximately 800 square miles and encompasses 78 cities and unincorporated territory within the County. The Districts were formed under the authority provided by the County Sanitation District Act of 1923 (the Act), which authorized the formation of sanitation districts based on topographical boundaries that determine efficient wastewater management, rather than political boundaries. As authorized by the Act, the Districts' role is to construct, operate, and maintain facilities to collect, treat, and dispose of wastewater and industrial wastes. Following a 1949 amendment to the Act, the Districts were empowered to provide solid waste management and disposal services including refuse transfer and resource recovery. In general, local sewers and laterals that connect to the Districts' trunk sewers and solid waste collection are the responsibility of the local jurisdictions within the Districts' service area. The Districts' service area and wastewater facilities are shown in Figure 1.

Figure 1
Sanitation Districts Service Area



The 24 individual districts work cooperatively with one another under a Joint Administration Agreement (JAA) with one administrative staff headquartered near the city of Whittier. Each District has its own Board of Directors, usually consisting of the presiding officers of the governing bodies of each local jurisdiction located within that District (typically the mayor of each City and the Chair of the County Board of Supervisors for county unincorporated territory). In limited situations where there are less than three jurisdictions within a District, one of the local jurisdictions may have more than one representative on the Board of Directors in conformance with the Health and Safety Code, Section 4730. The list of the cities in each District is provided in Table 1. Each District pays its proportionate share of joint administrative costs.

THE SANITATION DISTRICTS OF LOS ANGELES COUNTY *cont...*

Table 1
Jurisdictions Within Each District

District	Jurisdictions
South Bay Cities	El Segundo, Hermosa Beach, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills Estates, Torrance
District No. 1	Bell, Compton, Cudahy, Huntington Park, Long Beach, Los Angeles City, Lynwood, Maywood, Paramount, South Gate, Vernon, Los Angeles County
District No. 2	Alhambra, Artesia, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Downey, Long Beach, Los Angeles City, Montebello, Monterey Park, Norwalk, Paramount, Pico Rivera, San Gabriel, South Gate, Vernon, Whittier, Los Angeles County
District No. 3	Bellflower, Cerritos, Lakewood, Long Beach, Los Angeles City, Signal Hill, Los Angeles County
District No. 4	Beverly Hills, Los Angeles City, West Hollywood
District No. 5	Culver City, El Segundo, Gardena, Hawthorne, Inglewood, Lawndale, Lomita, Los Angeles City, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Torrance, Los Angeles County
District No. 8	Carson, Compton, Long Beach, Los Angeles City, Los Angeles County
District No. 9	Los Angeles City, Los Angeles County
District No. 14	Lancaster, Palmdale, Los Angeles County

Table 1 *cont...*

District	Jurisdictions
District No. 15	Arcadia, Baldwin Park, Bradbury, Duarte, El Monte, Industry, Irwindale, La Puente, Monrovia, Montebello, Monterey Park, Pasadena, Rosemead, San Gabriel, San Marino, Sierra Madre, South El Monte, Temple City, West Covina, Whittier, Los Angeles County
District No. 16	Alhambra, Los Angeles City, Pasadena, San Marino, South Pasadena, Los Angeles County
District No. 17	Pasadena, Los Angeles County

THE SANITATION DISTRICTS OF LOS ANGELES COUNTY *cont...*

District No. 18	Artesia, Bellflower, Cerritos, Downey, Industry, La Habra Heights, La Mirada, Norwalk, Pico Rivera, Santa Fe Springs, Whittier, Los Angeles County
District No. 19	Artesia, Cerritos, Hawaiian Gardens, Lakewood, Long Beach, Los Angeles County
District No. 20	Palmdale, Los Angeles County
District No. 21	Claremont, Diamond Bar, Industry, La Puente, La Verne, Pomona, San Dimas, Walnut, West Covina, Los Angeles County
District No. 22	Arcadia, Azusa, Baldwin Park, Bradbury, Covina, Duarte, Glendora, Irwindale, La Verne, Monrovia, San Dimas, Walnut, West Covina, Los Angeles County
District No. 23	Vernon
District No. 27	Los Angeles County
District No. 28	La Cañada Flintridge
District No. 29	Signal Hill
Newhall Ranch	Los Angeles County
Santa Clarita Valley	Santa Clarita, Los Angeles County
District No. 34	La Cañada Flintridge

Collectively, the Districts own, operate, and maintain over 1,400 miles of trunk sewers and 11 wastewater treatment plants, which can treat, in total, up to 650 million gallons per day (mgd). Ten of the Districts' treatment plants (all except JWPCP) produce recycled water a level that is suitable for reuse in the dry Southern California climate. This wastewater system is divided into three major categories (as discussed below): the Joint Outfall System, outlying Districts, and Districts that contract with the City of Los Angeles. The level of treatment, capacity, and current flows being treated at each of the wastewater treatment facilities is shown in Table 2. The Districts also operate two active landfills, two landfill energy recovery facilities, one recycle center, a transfer station, and two materials recovery facilities; maintain four closed landfills; participate in the operation of one refuse-to-energy facility; and have developed one remote landfill site.

Table 2
Level of Treatment and Design Capacity

Facility	Level of Treatment	Design Capacity (MGD)
JWPCP	Secondary	400.0
San Jose Creek WRP	Tertiary	100.0
Los Coyotes WRP	Tertiary	37.5
Long Beach WRP	Tertiary	25.0
Whittier Narrows WRP	Tertiary	15.0
Pomona WRP	Tertiary	15.0
La Cañada WRP	Secondary	0.2
Lancaster WRP	Tertiary	18.0
Palmdale WRP	Tertiary	12.0
Saugus WRP	Tertiary	6.5
Valencia WRP	Tertiary	21.3
Total		650.8

JOINT OUTFALL SYSTEM

In conformance with the Districts’ regional approach to administration, 17 of the Districts are signatory to the Joint Outfall Agreement (JOA), an agreement that provides for collective ownership and operation of shared wastewater conveyance, treatment and disposal facilities. These 17 Districts (Nos. 1, 2, 3, 5, 8, 15, 16, 17, 18, 19, 21, 22, 23, 28, 29, and 34 and South Bay Cities) are known collectively as the Joint Outfall Districts (JOD). District No. 2 is the appointed agent for all of the signatory Districts with respect to matters necessary to carry out the purposes of the JOA. The JOD are located in the central, southern, and eastern portions of the county. The JOD extend south from the foothills of the San Gabriel Mountains to the Palos Verdes Peninsula and are bounded on the east by Orange and San Bernardino counties, on the west by the cities of Glendale and Los Angeles, and Santa Monica Bay, and on the south by San Pedro Bay.

The JOD have constructed a regional, interconnected system of wastewater conveyance and treatment facilities known as the Joint Outfall System (JOS). The JOS provides wastewater treatment and disposal service for residential, commercial, and industrial users. It currently consists of seven wastewater treatment plants, more than 500 miles of trunk sewers, and 13 pumping plants. In addition to the collectively-owned facilities, the individual Districts own a combined total of over 730 miles of sewers and 34 pumping plants. The seven wastewater treatment plants included in the JOS are: the Joint Water Pollution Control Plant (JWPCP) located in the city of Carson, the Pomona Water

Reclamation Plant (PWRP) located in the city of Pomona, the San Jose Creek Water Reclamation Plant (SJCWRP) located adjacent to the City of Industry, the Whittier Narrows Water Reclamation Plant (WNWRP) located near the city of South El Monte, the Los Coyotes Water Reclamation Plant (LCWRP) located in the city of Cerritos, the Long Beach Water Reclamation Plant (LBWRP) located in the city of Long Beach, and the La Cañada Water Reclamation Plant located in the city of La Cañada Flintridge. The WRPs, located upstream of JWPCP, provide hydraulic relief of the downstream conveyance, treatment, and disposal system. The water reclaimed at these plants is either utilized for beneficial reuse or discharged to the San Gabriel River, the Rio Hondo River, or their tributaries, all of which eventually flow to the Pacific Ocean.

OUTLYING DISTRICTS

Four of the Districts (Nos. 14 and 20, Santa Clarita Valley, and Newhall Ranch) are stand-alone Districts in that they are not interconnected with any other District, nor do they share common facilities.

District No. 14 is located in the Antelope Valley in northern Los Angeles County and primarily serves the city of Lancaster, adjacent unincorporated areas of Los Angeles County and a small portion of the city of Palmdale. It currently operates the Lancaster Water Reclamation Plant, a 18 mgd tertiary level treatment facility with effluent storage facilities to enhance the opportunities for beneficial reuse.

District No. 20 is also located in the Antelope Valley in northern Los Angeles County and serves the majority of the city of Palmdale, and adjacent unincorporated areas of Los Angeles County. It currently operates the Palmdale Water Reclamation Plant, a 12 mgd tertiary level treatment facility with effluent storage facilities to enhance the opportunities for beneficial reuse.

The Santa Clarita Valley Sanitation District (SCVSD) provides wastewater management services to the city of Santa Clarita and the surrounding unincorporated area. It currently operates two water reclamation plants, the Saugus WRP and the Valencia WRP. The two plants, which are interconnected, provide tertiary level treatment with a combined capacity of 28.1 mgd.

The Newhall Ranch Sanitation District (NRSD) was formed by the County Board of Supervisors to address the sewage treatment needs of the proposed Newhall Ranch development. This District is directly adjacent to and west of the Santa Clarita Valley Sanitation District. Although NRSD will ultimately have its own treatment plant, treatment is currently provided by the Valencia WRP on an interim basis through an agreement with the SCVSD.

CONTRACT DISTRICTS

Three of the Districts (Nos. 4, 9, and 27), because of their locations, contract with the City of Los Angeles for wastewater treatment. These Districts directly pay the City of Los Angeles their proportionate share of the costs of the service provided to them.

BUDGETARY POLICIES AND REQUIREMENTS

The single most important principle relating to the Districts' budgetary process is that the Districts are non-profit entities. The Districts are designed to operate at neither a profit nor a loss. Any revenues generated in excess of immediate budgetary needs must be returned to the ratepayers in the form of lower future rates (whether through rate stabilization or a direct lowering of the rates). Likewise, the Districts cannot operate at a loss. All expenses must be met on an annual basis, with any shortfall covered by accumulated reserves or some form of long-term debt financing (e.g. bonds or loans).

The Districts' budgetary process is governed by a number of policies, some mandated by outside governing bodies (e.g. the State of California) and others imposed by the Districts' own Boards of Directors. These policies are embodied in a number of documents including the State Constitution, the California Health and Safety Code, various contractual agreements among the Districts, ordinances adopted by the Districts pertaining to the imposition of rates and to the disposal of industrial wastewater, the Investment Policy, and the covenants arising from revenue bond sales. Each of these policies results in specific practices being implemented during the preparation of the budget and setting of rates. The policies and ensuing practices are discussed below:

CALIFORNIA CONSTITUTION

Article 13A allows special districts to impose special taxes, *except ad valorem taxes on real property*, within the district by a two-thirds vote. Special districts are prohibited from levying their own ad valorem property taxes, but are allocated a proportionate share of the one percent (1%) general tax levy imposed by the state pursuant to Article 13A. Originally, the proportionate share was based on the District's percentage of the total property taxes levied in 1978 prior to the enactment of Proposition 13. This percentage was reduced in fiscal year 1992-93 with the enactment of the Educational Relief Augmentation Fund (ERAF) program, which took 40% of the Districts' property taxes. The exceptions to the amounts taken under the ERAF diversion were Districts Nos. 23, 27, 28, and 29. Districts Nos. 23, 28, and 29 were exempted because their boundaries are entirely within a single city. District No. 27's loss was limited to 10% because of the percentage of total revenues in that District that are constituted by ad valorem taxes.

Article 13B requires every local governmental agency to establish an appropriations limit regarding the proceeds of taxes. If the amount of tax proceeds received by an agency exceeds this limit, the agency must return all of the excess to the taxpayers within the next two fiscal years. The appropriations limit does not limit the use of other sources of funding to the degree that they do not exceed the reasonable cost of providing service. The original appropriations limit was established using fiscal year 1978-79 as the base year. Subsequent appropriations limits are calculated off this base year taking changes in population and changes in the cost of living into account and adding new mandated costs.

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

Article 13D was added to the Constitution as a result of Proposition 218. This Article explicitly states that revenues derived from fees and charges shall not exceed the funds required to provide the property-related service and that they shall not be used for any purpose other than that for which they were imposed. It furthermore states that the fee or charge imposed shall not exceed the proportional cost of the service attributable to the parcel upon which it is being imposed. It also requires that the service for which a fee is being imposed must actually be used by, or be immediately available to, the owner of the property in question; stand-by charges are considered assessments and not fees. Lastly, Article 13D has provisions regarding individual mailed notification and balloting requirements for implementing new fees or increasing existing fees. It should be noted that sewer, water, and refuse collection services are exempted from the voting requirement.

CALIFORNIA HEALTH & SAFETY CODE

Section 5471 provides the power and authority to prescribe and collect fees, tolls, rates, rentals or other charges and then defines the use of those revenues. Such authority is applicable to both connection fees (a one-time charge made when a new burden is imposed on the sewerage system) and service charges (annual fees to cover the yearly cost of service). A key provision under this section is that it prohibits the use of these funds for the acquisition or construction of new local street sewers or laterals as distinguished from main trunk, interceptor, or outfall sewers. This becomes important if cities desire to shift ownership of their local sewer systems to the Districts. While this statute does not outright prohibit the Districts from owning and maintaining local sewer systems, it would definitely prevent the Districts from constructing or paying for any new relief sewers and probably prevent the Districts from constructing any replacement sewers.

AMENDED JOINT ADMINISTRATION AGREEMENT (2014)

All of the members of the Sanitation Districts of Los Angeles County are signatory to the Amended Joint Administration Agreement. This is the agreement that provides for the hiring of a single staff to administer all of the day-to-day operations of the Districts. It also defines the responsibilities of each of the Districts regarding payment for joint expenses incurred on their behalf and for ownership of any jointly owned facilities.

Expenses are defined as “the compensation of all such officers and employees and all other expenses of said Joint Administrative Organization and all costs incurred in connection with the operation and maintenance thereof.” If any of the expenses can be readily segregated and allocated, they shall be charged directly to the District that benefited from those expenses. All other expenses which cannot be readily segregated shall be apportioned and charged to the respective Districts using the applicable following methods:

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

- Except as provided below, the amount apportioned to each District shall be in the ratio that the number of equivalent users (sewage units) attributable to that District bears to the aggregate number of sewage units attributable to all of the Districts.
- Since District No. 34 does not have an active sewerage system and since Districts Nos. 4, 9, and 27 contract for their sewage disposal with the City of Los Angeles, each of these Districts shall pay as its proportionate share one one-hundredth of one percent (0.01%).

Refuse transfer and disposal costs are to be recovered from the fees directly received from these operations and not from wastewater-related revenues. Costs that cannot be readily identified (e.g. use of the Joint Administration Building, etc.) shall be borne by the wastewater system and proportionately distributed to the individual Districts. The solid waste system shall reimburse the wastewater system for its estimated share of the costs that cannot be segregated in the form of a contract payment.

JOINT OUTFALL AGREEMENT (JULY 1, 2020)

As mentioned previously, 17 of the 24 Districts are signatory to the Amended Joint Outfall Agreement. This is the agreement that provides for the coordinated operation and maintenance (O&M) and capital construction of facilities for the conveyance, treatment, and disposal of wastewater generated within the Joint Outfall System. It also defines the responsibilities of each of the Districts regarding payment for joint expenses incurred on their behalf and for ownership of any jointly owned facilities.

Expenses are defined as the cost of constructing, operating, and maintaining any facilities jointly owned by the Joint Outfall Districts, including the compensation of all employees working for the direct benefit of the Joint Outfall System. If any of the expenses can be readily segregated and allocated, they are charged directly to the District that benefited from those expenses. All other expenses which cannot be readily segregated shall be apportioned and charged to the respective Districts using the applicable following methods:

- Capital and O&M expenditures which are attributable to the Joint Outfall System shall be apportioned to each District in the ratio that the number of sewage units attributable to that District bears to the aggregate number of sewage units attributable to all of the Districts who are members of the Joint Outfall System.
- All District specific costs (those that are specific to only one District) shall be paid by the District for whose benefit such costs were incurred and shall not be allocated to any other of the Joint Outfall Districts.

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

The distribution of revenue derived under the Industrial Wastewater Ordinance is handled in two separate ways. All revenue, except for the revenue obtained from the peak flow charge in the wastewater treatment surcharge formula, shall be distributed to the District from which the wastewater originated. The peak flow revenue shall be apportioned to each District in the ratio that the number of sewage units attributable to that District bears to the aggregate number of sewage units attributable to all of the Districts who are members of the Joint Outfall System.

All other revenues (e.g. revenue arising from the sale of biosolids, effluent, electrical power, or other byproducts) shall be apportioned to each District in the ratio that the number of sewage units attributable to that District bears to the aggregate number of sewage units attributable to all of the Districts who are members of the Joint Outfall System.

Pursuant to the Master Connection Fee Ordinance of each District, connection fees are levied whenever an added burden is imposed upon the sewerage system. The Joint Outfall Capital Fund has been officially designated as the repository for the portion of the connection fee that is related to the Joint Outfall System facilities. All amounts paid into the Joint Outfall Capital Fund shall be apportioned to each District in the ratio that the number of sewage units attributable to that District bears to the aggregate number of sewage units attributable to all of the Districts who are members of the Joint Outfall System.

The disposal of wastewater originating outside the Districts is dependent on the flow entitlement of each respective contract.

- If the contracted entitlement does not exceed one one-hundredth of one percent (0.01%) of the total flow in the Joint Outfall System, the wastewater received from the outside source shall be regarded as wastewater of the District receiving the flow for purposes of establishing the Joint Outfall Distribution Schedules.
- If the contracted entitlement does exceed one one-hundredth of one percent (0.01%) of the total flow of the Joint Outfall System, the consent of all of the Joint Outfall Districts shall be required before the waste discharge can be accepted. For purposes of establishing the Joint Outfall Distribution Schedules, the sewage units associated with the contract shall be apportioned to each District in the ratio that the number of sewage units originating in that District bears to the aggregate number of sewage units originating in all of the Districts who are members of the Joint Outfall System.

INVESTMENT POLICY

Pursuant to Section 53600 et al of the Government Code, each Board of Directors has adopted an investment policy for its respective District. Each District may invest 100% in

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

US Treasuries and all short-term operating funds may be placed in the Los Angeles County Pooled Surplus Investment Fund (PSIF). Except for Districts Nos. 17, 27, and Newhall Ranch Sanitation District, additional limitations have been included in each District's policy to ensure:

- **Safety of Principal**

- Investments over one year are only made in U.S. Treasuries, U.S. Agencies, or A or AA-rated medium-term corporate notes (MTCN).
- Investments in U.S. Agencies are limited to 60% in any one Agency.
- No more than 10% may be invested in any single MTCN rated AA or greater.
- No more than 2% may be invested in any single MTCN rated A or greater.
- The aggregate of all MTCNs may not exceed 30%.
- No more than 20% of the District's funds may be invested in Money Market Funds, and no more than 10% of the District's funds may be invested in any single Money Market Fund.

- **Return on Investment**

- Investments are continually managed to produce a market rate of return after considering safety of principal and liquidity.
- Investments in Callable Agencies are monitored closely to ensure proper duration.

- **Liquidity**

- The Districts have sufficient liquidity to meet short-term operating needs.
- Investments are placed in accordance with cash flow requirements.
- Operating balances are kept in the Los Angeles County Pooled Surplus Investment Fund.

DEBT MANAGEMENT POLICY

Section 8855(i) of the Government Code mandates that any local governmental agency proposing to issue debt must have an adopted debt management policy. The debt management policy will assist in determining appropriate uses for debt financing, structuring of debt, and meeting the Districts' financial objectives. While long-term financing is an effective way to spread these costs over time, the Districts must also

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

consider maintaining and improving credit strength, providing certainty and cash flow flexibility in the annual budgeting process, and prioritizing future capital infrastructure needs. Accordingly, the debt management policy focuses on three key areas:

- **Purpose of Debt**
 - Long-term capital improvements
 - Refunding/refinancing of existing debt
 - Emergencies that threaten the Districts' ability to continue operations

- **Allowable Debt Instruments including:**
 - Revenue Bonds
 - Clean Water State Revolving Fund (SRF) Loans
 - Land Secured Financing
 - Commercial Paper
 - Clean Renewable Energy Bonds (CREBs)
 - County Sanitation Districts of Los Angeles County Debt Instruments
 - Leases

- **Debt Metrics**

Metric (all District debt)	Targeted Goal
Debt Service Coverage Ratio	≥ 1.30
Total debt service as a percent of total operating expenses plus debt service	$\leq 30\%$
Debt-to-Capitalization Ratio	$\leq 50\%$

FINANCIAL RESERVE POLICY

Although not required by statute, the Districts have each adopted a Wastewater Financial Reserve Policy. Maintaining prudent levels of reserves provides significant benefits including: (1) stabilizes user charge rates, creating more certainty so ratepayers can better plan their budgets; (2) minimizes risk associated with borrowing, which can result in lower interest costs; (3) demonstrates the Districts' financial stability to credit rating

BUDGETARY POLICIES AND REQUIREMENTS *cont...*

agencies; (4) improves liquidity so capital projects can be constructed in a timely fashion, despite fluctuations in cost from year to year; and (5) allows the Districts to effectively respond to economic, environmental, and regulatory changes.

The Districts maintain their financial assets in various “Funds”, with balances maintained in amounts sufficient to meet appropriate target goals, as established in the Wastewater Financial Reserve Policy in cash and/or cash equivalents, and permitted investments as prescribed in the Districts’ Investment Policy. The Districts’ Funds are categorized under this Policy as Unrestricted, Designated, and Restricted as follows:

- **Unrestricted**

- The Unrestricted Fund includes all monies collected or generated by or on behalf of the Districts, without regard to the source, except those that have been deemed to be Designated or Restricted.

- **Designated**

- Designated Reserve Funds are the group of Reserve Funds for which the Boards have imposed restrictions on the use of the monies in them for specific purposes such as capital facilities, land acquisition, and repair and replacement of existing assets. The Boards may designate these purposes either through specific action or through approval of the annual budget. These monies are not otherwise legally restricted, and the Boards have the discretion to re-designate the actual or intended usage of these monies.

- **Restricted**

- Restricted Reserve Funds are the group of Reserve Funds that have been established to comply with restrictions that have been imposed externally through law (federal, state, or local governments), administrative action (Districts adopted ordinances), or contractual arrangements (e.g., bond indentures, State Revolving Fund installment sales agreements). The monies in Restricted Reserve Funds can only be used for the purpose for which they were established or dedicated until the restrictions are removed by the party that imposed them or the contractual agreement that created them has expired.

DEVELOPMENT OF EXISTING REVENUE PROGRAM

In fiscal year 1978-79, with the passage of Proposition 13 and the subsequent reduction in ad valorem taxes, the Districts' expenses began to exceed available revenues. In order to remain solvent, the Districts utilized available cash reserves that had been accumulated in anticipation of future capital projects. Although these reserves served to keep the Districts solvent in the near term, some type of user charge program was needed for a long-term solution to supplement the existing sources of revenue.

Possible user charge systems were evaluated in terms of two basic perspectives: charge structure and method of collection. As part of the development process, an extensive public information program was conducted. The key factors that the public thought should be incorporated into the charge system were 1) low administrative costs, 2) low payment delinquency factor, and 3) equity. In terms of equity, the public repeatedly emphasized that existing users of the sewerage system should not be required to subsidize new growth. A separate connection free program, as discussed later in this report, was developed as a direct response to this input.

EXISTING SOURCES OF REVENUE

Ad Valorem Taxes — The Districts continue to receive a pro rata share of the general 1% ad valorem (property tax) levy. The pro rata share is based upon the percentage of the total tax levy each District received prior to the implementation of Proposition 13 in fiscal year 1978-79. Accordingly, the pro rata share (and, hence, the amount received per equivalent user) varies from District to District.

Contracts — The Districts generate additional revenue through disposal contracts. The sewage disposal contracts compensate the Districts for providing sewerage services to certain facilities located outside of the Districts' boundaries. Disposal contracts are designed to recover the total cost of services rendered to these facilities. The Districts also receive revenue from the sale of reclaimed water to various water purveyors throughout the service area.

Grants & Loans — Under P.L. 92-500, the *Federal Water Pollution Control Act Amendments of 1972*, a joint federal/state construction grant program was established. This program made grant funding available for projects, covering up to 87½% of the eligible project cost (75% federal share and 12½% state share). In addition, the grant program made another 10% award for projects that were classified as Innovative or Alternative. After July 1, 1989, the grant program became a low-interest revolving loan program. Under the loan program, funds are made available for up to 30 years at an interest rate equal to one-half the state's general obligation (GO) bond rate. Some limited amounts of grants are still available under California's various water bond acts (e.g. Proposition 84).

Industrial Wastewater Surcharge — In 1972, the Districts instituted a user charge program for industrial wastewater discharges in accordance with the Clean Water Act. It

requires industrial dischargers to pay for O&M and upgrade capital according to their usage of the sewerage system. Usage is measured in terms of three parameters: flow, chemical oxygen demand, and suspended solids. In addition, dischargers with excessive peak flows must pay a supplemental peak flow charge. The method for determining the industrial wastewater surcharge rates is similar to that for determining the service charge rate as discussed later.

Investment Income — This refers to interest received during the fiscal year. This source of revenue is variable and depends on the cash balance maintained by each District as well as the prevailing interest rate. All funds are invested in conformance with the Investment Policy.

Annexation Fees — Annexation fees are paid by each property owner annexing into a District. The annexation fee program is in conformance with the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000, Government Code of 56000. The revenue received from annexation fees varies considerably and unpredictably. Since each annexation fee solely covers the cost of processing each annexation request, this revenue source is not relied upon during budget preparation.

CHARGE STRUCTURE

The basic charge structure is nothing more than dividing each District's budgetary shortfall by the total discharge to determine unit rates and then multiplying any given user's discharge by those unit rates to determine that particular user's charge. As simple as this appears, this process does involve many other steps: determining the mass loading for each discharger, combining the disparate mass loadings into a single comparable unit of measure, calculating the total discharge from each District, and developing each District's budget. Each of these steps is discussed below.

Mass Loadings

From the input received at the public meetings, two major alternatives were developed for determining the mass loadings for each discharger:

- **User Categories** – Under this alternative, each user would be placed in a user category. Each category would be assigned a standard loading (flow and strength) per unit of usage (e.g., number of units, square footage) that reflects the expected discharge from that category. Given the number of units of usage for a given parcel, the total loadings from each parcel can be determined.
- **Water Consumption** – Under this alternative, the annual user charge would be based on a percentage of water usage. An assumption would be made for the percentage of water usage that goes to non-sewer uses (e.g., irrigation) to avoid charging for water that never reaches the sewerage system.

Both of these proposals have the drawback of relying upon certain assumptions that must be made (e.g., standard loadings for user categories, non-sewer use factors for water consumption). Additionally, the use of water consumption only addresses the flow component; it does not address strength issues. The installation of individual wastewater meters and sampling devices would be the only way to eliminate these assumptions; however, the cost associated with such a system is prohibitive, especially for residential users. Given this constraint, the Districts evaluated the two alternatives listed above in terms of ease of implementation.

Accessibility and reliability of the database formed the major criteria for implementation. In theory, the acquisition of water consumption data appears to be very straightforward. However, at the time the revenue program was being developed, there were more than 120 water purveyors within the Districts' service area. Separate working agreements would have had to be reached with each of these purveyors for this to be a viable option. In preliminary discussions with the water purveyors, several indicated that they would be willing to make the data available at no or minimal cost; some would provide it at a substantial cost; and some outright refused to provide the data under any conditions. Even if they had all agreed, this alternative would have entailed developing separate computer interfaces for each company. The major problem, however, was that some of the smaller, primarily residential, water companies did not meter individual users, which would have resulted in the Districts having incomplete information. As a result of these problems, the water consumption alternative was eliminated from further discussion.

Under the user category alternative, data from the County Assessor's tax roll could be used. The County Assessor's tax roll contains information, including square footage and /or number of units, for all parcels within the Districts. The tax roll also classifies all of the parcels into type of use categories. Lastly, the tax roll provides a single source for all of the necessary data and is updated annually. Thus, the user category alternative utilizing the tax roll information was selected as the preferred alternative.

Once the decision was made to go with user categories, standard loadings had to be established for each category. The Districts' used a combination of actual field studies, literature surveys, and water consumption analysis to establish the average values for flow, chemical oxygen demand (COD), and suspended solids for the various user categories. The respective values, measured in gallons per day and pounds per day, along with their respective categories are shown in Table 3.

DEVELOPMENT OF EXISTING REVENUE PROGRAM *cont...*

**Table 3
User Categories and Mean Loadings of Usage**

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons per Day)	COD (Pounds per Day)	SUSPENDED SOLIDS (Pounds per Day)
RESIDENTIAL				
Single Family Home	Dwelling Unit	260	1.22	0.59
Condominiums	Dwelling Unit	195	0.92	0.44
Multi-Unit Residential	Dwelling Unit	156	0.73	0.35
Mobile Home Parks	No. of Spaces	156	0.73	0.35
COMMERCIAL				
Hotel/Motel/Rooming House	Room	125	0.54	0.28
Store	1000 ft ²	100	0.43	0.23
Supermarket	1000 ft ²	150	2.00	1.00
Shopping Center	1000 ft ²	325	3.00	1.17
Regional Mall	1000 ft ²	150	2.10	0.77
Office Building	1000 ft ²	200	0.86	0.45
Medical, Dental, Veterinary Clinic or Building	1000 ft ²	300	1.29	0.68
Restaurant*	1000 ft ²	1,000	16.68	5.00
Indoor Theatre	1000 ft ²	125	0.54	0.28
Car Wash				
Tunnel - No Recycling	1000 ft ²	3,700	15.86	8.33
Tunnel - Recycling	1000 ft ²	2,700	11.74	6.16
Wand	1000 ft ²	700	3.00	1.58
Bank, Credit Union	1000 ft ²	100	0.43	0.23
Service Shop, Vehicle Maintenance & Repair Shop	1000 ft ²	100	0.43	0.23
Animal Kennels	1000 ft ²	100	0.43	0.23
Gas Station	1000 ft ²	100	0.43	0.23
Auto Sales	1000 ft ²	100	0.43	0.23
Wholesale Outlet	1000 ft ²	100	0.43	0.23
Nursery/Greenhouse	1000 ft ²	25	0.11	0.06
Manufacturing	1000 ft ²	200	1.86	0.70
Light Manufacturing	1000 ft ²	25	0.23	0.09
Lumber Yard	1000 ft ²	25	0.23	0.09
Warehousing	1000 ft ²	25	0.23	0.09
Open Storage	1000 ft ²	25	0.23	0.09
Drive-in Theatre	1000 ft ²	20	0.09	0.05
Night Club	1000 ft ²	350	1.50	0.79
Bowling/Skating	1000 ft ²	150	1.76	0.55
Club & Lodge Halls	1000 ft ²	125	0.54	0.27
Auditorium, Amusement	1000 ft ²	350	1.50	0.79
Golf Course and Park (Structures and Improvements)	1000 ft ²	100	0.43	0.23
Campground, Marina, Recreational Vehicle Park	Sites, Slips, or Spaces	55	0.34	0.14
Convalescent Home	Bed	125	0.54	0.28

DEVELOPMENT OF EXISTING REVENUE PROGRAM *cont...*

Table 3 *cont...*
User Categories and Mean Loadings of Usage

DESCRIPTION	UNIT OF MEASURE	FLOW (Gallons per Day)	COD (Pounds per Day)	SUSPENDED SOLIDS (Pounds per Day)
Horse Stables	Stalls	25	0.23	0.09
Laundromat	1000 ft ²	3,825	16.40	8.61
Mortuary, Funeral Home	1000 ft ²	100	1.33	0.67
Health Spa, Gymnasium				
With Showers	1000 ft ²	600	2.58	1.35
Without Showers	1000 ft ²	300	1.29	0.68
Convention Center, Fairground, Racetrack, Sports Stadium/Arena	Average Daily Attendance	10	0.04	0.02
INSTITUTIONAL				
College/University	Student	20	0.09	0.05
Private School	1000 ft ²	200	0.86	0.45
Library, Museum	1000 ft ²	100	0.43	0.23
Post Office (Local)	1000 ft ²	100	0.43	0.23
Post Office (Regional)	1000 ft ²	25	0.23	0.09
Church	1000 ft ²	50	0.21	0.11

*Districts Nos. 14 & 20 restaurant loadings were adjusted in August 2012 to be 620 gpd, 10.34 ppd COD, and 3.10 ppd SS.

Sewage Units

Using the appropriate user category and the associated mass loadings, the total discharge from any given user can be calculated. However, since that discharge is made up of three very dissimilar components (flow, COD, and suspended solids), the problem still remains as to how to compare one discharger against another. In order to answer that question, a formula was developed to combine them into a single factor, the sewage unit (SU). A single sewage unit is defined as the quantity and strength of wastewater discharged from a single family home. The number of sewage units from any other parcel can then be determined by using the assumed loadings in the following sewage unit equation:

$$\text{Billable SU} = \text{WCF} \left(A \left(\frac{\text{FLOW}_{\text{avg}}}{\text{FLOW}_{\text{sfh}}} \right) + B \left(\frac{\text{COD}_{\text{avg}}}{\text{COD}_{\text{sfh}}} \right) + C \left(\frac{\text{SS}_{\text{avg}}}{\text{SS}_{\text{sfh}}} \right) \right)$$

where:

DEVELOPMENT OF EXISTING REVENUE PROGRAM *cont...*

- A = The proportion of the total operation and maintenance and net capital costs required for conveyance, treatment, and disposal of wastewater for each relevant fiscal year that is attributable to flow;
- B = The proportion of the total operation and maintenance and net capital costs required for conveyance, treatment, and disposal of wastewater for each relevant fiscal year that is attributable to COD;
- C = The proportion of the total operation and maintenance and net capital costs required for conveyance, treatment, and disposal of wastewater for each relevant fiscal year that is attributable to suspended solids;
- $FLOW_{sft}$ = Average flow of wastewater from a single family home in gallons per day;
- COD_{sft} = Average loading of COD in the wastewater from a single family home in pounds per day;
- SS_{sft} = Average loading of suspended solids in the wastewater from a single family home in pounds per day;
- $FLOW_{avg}$ = Estimated flow of wastewater that will enter the sewerage system from a facility in gallons per day;
- COD_{avg} = Estimated loading of COD that will enter the sewerage system from a facility in pounds per day;
- SS_{avg} = Estimated loading of suspended solids that will enter the sewerage system from a facility in pounds per day.
- WCF = Water consumption factor (see below).

Water Consumption Factor

One concern that was consistently raised was that, in certain cases, a parcel's actual usage might be significantly less than that estimated from the standard loadings. Since the goal of the revenue program is to charge all users fairly and equitably, a provision had to be made to account for this situation. The program was therefore amended to allow users to submit verifiable water use (usually in the form of copies of water bills) to demonstrate that their actual usage was indeed significantly lower. To take irrigation losses into account, users are allowed to submit both annual and winter water for this analysis. Depending on their level of use, single-family homeowners can qualify for a water consumption factor of 60% or 75%, condominiums can qualify for a water consumption factor of 80%, and commercial parcel owners can qualify for a water consumption factor of 20%, 40%, 60%, or 80%. Details of this program can be found under the Low-Water Rebate Program on the Districts website, www.lacsd.org.

Total System Loadings

Residential/Commercial: Using the cost allocation factors and the standard loading factors, in combination with the user category information supplied by the County Assessor's Office, the estimated number of sewage units for any given residential or commercial discharger can be determined. The total number of residential and commercial sewage units in each District can then be determined by summing the individual sewage units associated with each parcel. This information is summarized for each District in Appendix A.

Industrial: Because of the size and variability of industrial dischargers, it would be nearly impossible to develop standard loading factors that would accurately estimate the discharge from these facilities. Instead, industrial dischargers are required to meter their discharged flow and take periodic samples for COD and suspended solids. This data is reported to the Districts' Industrial Waste Section, which has a group of inspectors that independently verify the integrity of the data. In a limited number of cases, water consumption data can be used in lieu of metering the waste discharge. Information on industrial dischargers, by District, is summarized in Appendix B.

Rate Development

Budgets are developed for each District. On the expense side, the budget considers O&M, capital, and debt service. In those Districts that jointly share facilities, the proportionate share of the cost is allocated to each District based on its proportion of sewage units to the total sewage units of the system. Capital projects include replacement of existing facilities, upgrades to higher levels of treatment, and expansion of capacity. Debt service includes both bonds and State Revolving Fund (SRF) or other loans.

The expenses are then offset by known revenue sources. These include cash on hand, investment income, contract revenues, bond and loan proceeds, property taxes, and connection fees. Any remaining deficit must be made up through the collection of user charges or transfers from reserves established pursuant to the District's Wastewater Reserve Policy.

When determining user charges (service charge for residential and commercial properties, and industrial wastewater surcharge for industrial dischargers) a two-step process is followed. The industrial wastewater surcharge rates are determined first and then the residential/commercial rates are determined. It is done this way for two reasons: (a) the industrial wastewater surcharge rates include a component for the overhead related to the operation of the Industrial Waste Section (a cost that would not otherwise be incurred if not for the existence of industry) and (b) it allows separate rates to be calculated for flow, COD, and suspended solids given the variability in industrial discharges. Once the industrial wastewater surcharge rates are determined, the associated revenue can be plugged back into the budgetary model and the residential/commercial rates can be determined.

METHOD OF COLLECTION

The development of the Districts’ user charge system was evaluated next in terms of its method of collection. The study of the method of collection yielded the following three alternatives:

1. Specific Lien – Incorporating the charge as a separate line item on the property tax bill.
2. Direct Billing – Establishing a separate billing and collection department to mail and process all bills.
3. Water Bills – Incorporating the charge into the structure of the water utility bill.

All three alternatives had positive features; however, two unique features of the specific lien process established it as the preferred method. The first significant feature was its low delinquency factor compared to the direct billing or water bill alternatives. The second, and more significant, feature was the low cost associated with the specific lien alternative.

Table 6 shows that collection of the proposed service charge by specific lien (on the property tax roll) was the least costly alternative. The cost associated with delinquent payments was projected to be very high for the direct billing method as this would be a new bill with no previous payment record. While the use of water bills would have a very low delinquency factor (as an established bill), the cost of billing services would be very high as a result of utilizing multiple private companies. Collection of the proposed service charge by direct billing or on the water bill would cost approximately \$5,000,000 (or higher, depending on the level of delinquencies), and would increase the service charge by nearly \$5.00 per parcel.

Table 6
COMPARISON OF ANNUAL COSTS OF BILLING ALTERNATIVES

Methods of Collection			
Function	Specific Lien	Direct Billing	Water Bill
Produce Billing Information	\$ 200,000	\$ 200,000	\$ 350,000
Billing Services	\$ 100,000 to \$ 250,000	\$ 1,000,000	\$ 3,500,000
Processing of Payments	Part of Basic Service	\$ 3,250,000	\$ 250,000
Delinquency Factor	\$0	\$ 4,500,000 to \$ 12,500,000	\$ 800,000 to \$ 1,600,000

DEVELOPMENT OF EXISTING REVENUE PROGRAM *cont...*

Table 6 *cont...*
COMPARISON OF ANNUAL COSTS OF BILLING ALTERNATIVES

Methods of Collection			
Function	Specific Lien	Direct Billing	Water Bill
Total Annual Collection Costs for the Joint Outfall Districts	\$ 300,000 to \$ 450,000	\$ 8,950,000 to \$ 16,950,000	\$ 4,900,000 to \$ 5,700,000
Annual Collection Costs Per Single Family Home in JOS Districts	\$0.30 to \$0.45	\$ 8.25 to \$15.60	\$ 4.50 to \$ 5.30

IMPLEMENTATION PROCESS

The development of the rates is purely theoretical until they are actually implemented. Implementation occurs through a series of steps that includes proper notification, a public hearing, and enactment of appropriate ordinances. Each of these steps, as discussed below, must follow specific procedures mandated by law.

NOTIFICATION

The notification requirements that the Districts must follow are directly related to the means by which the charges are collected, namely on the property tax bill. As such, the charges can be construed to be a property-related fee or charge incident of property ownership, making them subject to Proposition 218 (California Constitution, Article XIID). Additionally, collection on the tax roll makes the charges subject to California Health & Safety Code, Section 5473.1.

Proposition 218 requires that, whenever a rate increase is proposed, a public hearing must be held to consider the proposed increase. It further requires that individual mailed notices must be sent to every affected property owner at least 45 days prior to the public hearing. Minimally, the notice is only required to provide the date, time, and place of the public hearing and the specific charge that is proposed for each particular parcel. However, in the spirit of Proposition 218's intentions and to promote transparent government, the Districts believe that the notice should include much more information related to the underlying reasons for the proposed rate increase and how the property owner can obtain detailed answers to their questions.

California Health & Safety Code, Section 5473 provides that a sanitation district may collect user charges on the tax roll, but in order to do so must first prepare a report (the Service Charge Report) that contains a description of each parcel being charged and the amount of the charge. Sections 5473.1 and 5473.2 require that a public hearing be held on the report following proper noticing. Specifically, two newspaper notices must be published one and two weeks prior to the public hearing.

PUBLIC HEARING

Both Proposition 218 and the Health & Safety Code require that a public hearing be held. Specifically, Proposition 218 requires the public hearing be held to discuss the proposed rate increase while the Health & Safety Code requires that the public hearing focus on the proposed collection of the charges on the tax roll. Because both issues deal with rates and their implementation, a single public hearing is held that considers both issues. The hearing, which must be held before a quorum of the Board of Directors, generally includes a short presentation by staff on the merits of the proposed rate increase and provides an opportunity for the public to address the Board.

ORDINANCES

Following the close of the public hearing, the Board of Directors must consider introduction and adoption of the appropriate ordinances to implement the proposed rates. In the case of the Districts, this involves two ordinances:

- Service Charge Rate Ordinance — This ordinance is prepared pursuant to the direction of the Master Service Charge Ordinance. It contains the list of user categories and standard loading, sets the service charge rate, and provides for the collection of the charges on the tax roll.
- Industrial Wastewater Surcharge Ordinance — This ordinance sets the rates for industrial wastewater dischargers. As opposed to the Service Charge Rate Ordinance, which provides a rate per sewage unit, this ordinance sets individual rates for each of the parameters of flow, COD, and suspended solids.

CONNECTION FEE PROGRAM

The Districts' sewer connection fees are fees users must pay when they connect to the sewer system for the first time or need to increase the amount and/or strength of the wastewater discharged to the sewer system from a parcel that is already connected to the system. In California, the basic statutory standards governing water and sewer system development fees are embodied in Government Code Sections 66013, 66016, and 66022. The essence of Section 66013 is that a connection fee may be no higher than the estimated reasonable cost of providing service to new customers unless the voters have specifically approved a higher level for the fee.

The three most common approaches for calculating the connection fee for a given system are the Expansion Approach, Buy-in Approach and the Hybrid Approach. The Expansion Approach bases connection fees on capital expenses required to construct future expansions of the system. The Buy-in Approach determines the connection fee based on the total value of existing assets (net of liabilities), essentially having new users "buy-in" to the existing system. The Hybrid Approach combines aspects from each of the aforementioned approaches.

In 2020, the majority of Districts adopted new connection fee ordinances which included implementation of the Buy-in Approach. Districts No. 4, 9 and 27 were not updated as they discharge 100% of their flow to the City of Los Angeles and ordinances for those Districts have been developed to collect the amount of money that will be passed through to the City of Los Angeles.

DEVELOPMENT

The basic connection fee structure is nothing more than dividing the wastewater system's current value (e.g., the system or District's Total Net Position) and dividing it by the number of active users in the system. Because the service charge is collected on the property tax bill, there is a potential one-year lag between the time a connection takes place and when the service charge is first levied. Consequently, one year's worth of service charge is included to establish the total connection fee rate. As was the case for the service charge program, this process involves two key steps: determining the mass loading for each discharger and combining the disparate mass loadings into a single comparable unit of measure.

Mass Loadings

Fortunately, most of the groundwork was laid in the development of the service charge program. The connection fee program utilizes user categories with associated standard loadings to estimate the anticipated discharge from any new connection. For ease of implementation and consistency with the service charge program, the same user

CONNECTION FEE PROGRAM *cont...*

categories and standard loadings shown in Table 3 are used in the connection fee program.

Capacity Units

Using the appropriate user category and the associated mass loadings, the proposed discharge from any new user can be calculated. However, since that discharge is made up of three very dissimilar components (flow, COD, and suspended solids), the problem still remains as to how to compare one discharger against another. In order to answer that question, a formula was developed to combine them into a single factor, the capacity unit (CU). A single capacity unit is defined as the quantity and strength of wastewater that would be discharged from a single family home. The number of capacity units from any other parcel can then be determined by using the assumed loadings in the following sewage unit equation:

$$CU = X \left(\frac{FLOW_{avg}}{FLOW_{sfh}} \right) + Y \left(\frac{COD_{avg}}{COD_{sfh}} \right) + Z \left(\frac{SS_{avg}}{SS_{sfh}} \right)$$

where:

X = The proportion of the total capital cost of an incremental expansion of the sewerage system that is attributable to flow;

Y = The proportion of the total capital cost of an incremental expansion of the sewerage system that is attributable to COD;

Z = The proportion of the total capital cost of an incremental expansion of the sewerage system that is attributable to suspended solids;

FLOW_{sfh} = Average flow of wastewater from a single family home in gallons per day;

COD_{sfh} = Average loading of COD in the wastewater from a single family home in pounds per day;

SS_{sfh} = Average loading of suspended solids in the wastewater from a single family home in pounds per day;

FLOW_{avg} = Estimated flow of wastewater that will enter the sewerage system from a facility in gallons per day;

COD_{avg} = Estimated loading of COD that will enter the sewerage system from a facility in pounds per day;

CONNECTION FEE PROGRAM *cont...*

SS_{avg} = Estimated loading of suspended solids that will enter the sewerage system from a facility in pounds per day.

IMPLEMENTATION

As was the case for the service charge program, the connection fee program is implemented through two ordinances. The Master Connection Fee Ordinance establishes the basis for the charge, who is subject to the charge, how capacity units are to be calculated, how the rate is to be determined, what credits or reductions might be available, and how the charge is to be levied. The Connection Fee Rate Ordinance is prepared pursuant to the direction of the Master Connection Fee Ordinance and contains the list of user categories and standard loading and sets the connection fee rate.