CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor

Report to the City Council
City of San José

SEWER RATES: REVIEWING RATE MODEL ASSUMPTIONS AND DEVELOPING RESERVE POLICIES WOULD IMPROVE THE RATE-SETTING PROCESS

Report 26-01
February 2026

This page was intentionally left blank

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Office of the City Auditor
Joe Rois, City Auditor

February 2, 2026

Honorable Mayor and Members
Of the City Council
200 East Santa Clara Street
San José, CA 95113

Sewer Rates: Reviewing Rate Model Assumptions and Developing Reserve Policies Would Improve the Rate-Setting Process

The City of San José sets sewer rates to recover the costs of providing sanitary sewer and wastewater treatment services to residents and businesses. These rates fund the operation, maintenance, and capital improvements to the City's sanitary sewer network and the City's share of the San José–Santa Clara Regional Wastewater Facility (RWF).

The Environmental Services Department (ESD) sets the rates based on the overall volume of a customer's wastewater and the concentration of pollutants (i.e., strength) of the wastewater that require treatment. Though all customers pay the same unit rate for each wastewater component that ESD treats, how a customer is billed depends on the type of residence or business and the assumed or actual volume and strength of their wastewater. The objective of this audit was to assess the City's process for setting sewer rates.

Finding 1: ESD Should Review Assumptions Within Its Rate Model. ESD's rate model follows guidelines set by the state, which provide a reasonable basis for allocating costs to users. Integral to the rate model are assumptions about the volume and strength of wastewater, which affect how San José sets sewer rates. We found:

- In 2014, the state determined that the City's rate model complied with Clean Water State Revolving Fund requirements.
- A 2015 consultant study found that the strength of wastewater reaching the RWF did not match what was assumed in the rate model and should be reviewed further.
- Until field sampling occurs, the study determined that the City should continue with the current strength parameters. This field sampling has not yet occurred.
- ESD does not have clear guidance for regularly reviewing assumptions in its rate model.

Recommendations: To ensure its rate model assumptions reflect current conditions, ESD should:

→ Study assumptions in the rate model and update them as necessary.

→ Update procedures around when assumptions should be reviewed.

→ Consider implementing a software solution for rate calculations.

Finding 2: ESD Should Develop Formal Reserve Policies. ESD maintains reserves in the Sewer Service and Use Charge Fund for operations and capital projects. We found:

- The amount of funds held in reserves and unrestricted fund balance has fluctuated over time.
- ESD does not have a formal policy that defines the intended purpose or sets target levels for reserves in the Sewer Service and Use Charge Fund.
- Formal reserve policies or practices are common among other wastewater utilities.

Recommendation: To enhance risk management and planning for future needs, ESD should:

→ Develop a formal policy for sewer fund reserves that defines their intended use and target levels.

Finding 3: ESD Can Improve Transparency Around the Rate-Setting Process. Documentation of current practices and further information for stakeholders would help ESD communicate how rates are calculated. We found:

- Consolidating procedures on the frequency of wastewater sampling would improve transparency for how bills are calculated for industrial users.
- ESD's sewer rate web page could be enhanced with clearer explanations of how rates are set, including sample calculations.

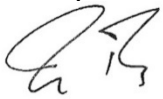
Recommendations: To improve transparency, ESD should:

→ Document procedures for sampling decisions and notify users of changes as appropriate.

→ Update the sewer rate web page and add clear rate setting explanations.

This report has 6 recommendations. We plan to present this report at the February 9, 2026, meeting of the Transportation and Environment Committee of the City Council. We would like to thank the Environmental Services Department for their time and insight during the audit process. The Administration has reviewed the information in this report, and their response is shown on the yellow pages.

Respectfully submitted,



Joe Rois
City Auditor

Audit staff: Alison Pauly
Ebelechukwu Obi
Hiwad Haider

cc: Jennifer Maguire, Susana Alcala Wood, Manuel Pineda, Rosa Tsongtaatarii, Wesley Klimczak, Jeffrey Provenzano, Nick Ajluni, Laura Burke, Jim Shannon, Claudia Chang, Richard Luna, Rajani Nair, Casey Fitzgerald, Katherine Estrada

This report is also available online at www.sanjoseca.gov/audits

Table of Contents

Table of Exhibits

Background

The City of San José sets sewer rates to recover the costs of providing sanitary sewer and wastewater treatment services to residents and businesses. These rates help fund the operation, maintenance, and capital improvements to the City's sanitary sewer collection system and the City's share of the San José–Santa Clara Regional Wastewater Facility (RWF).[1] Rates cannot exceed cost recovery and must be reasonably allocated in proportion to the services available and used by different users.

While the City's methodology for determining sewer rates and cost accounting is shaped by requirements and guidelines from the State of California, the Environmental Services Department (ESD) manages the process. The objective of this audit was to assess the City's process for setting sewer rates.

Rates Are Based on the Amount and Strength of Wastewater

What a user pays in their sewer rate is based on the volume and strength of their wastewater (assumed or actual, depending on the user). If a user has—or is assumed to have—a higher volume of wastewater or wastewater that has more pollutants, they can expect to pay more. This is to recover the costs necessary to manage wastewater volume and treat those pollutants.

The **flow** is the overall volume of wastewater that a user (whether a business or a resident) puts into the sewer system. Higher flow means more wastewater down the drain.

The **strength,** or contents, of the wastewater are the pollutants that are in the sewage. Higher-strength wastewater requires more treatment capacity and chemicals, increasing operational costs. San José's rates include the three strength components that are treated by the RWF:

- Biochemical oxygen demand (BOD), a measure of organic material;
- Suspended solids (also referred to as total suspended solids [TSS]); and
- Ammonia (NH_3).

[1] The RWF is jointly owned with the City of Santa Clara. The RWF treats wastewater from residential, commercial, and industrial users across the South Bay region, providing essential operations, maintenance, and regulatory compliance services for all participating agencies. The agencies that discharge into the RWF include San José, Santa Clara, Milpitas, Cupertino Sanitary District, County Sanitation District Nos. 2-3, West Valley Sanitation District, and Burbank Sanitary District.

Rate Model and Customer Categories

The City has a rate model that calculates sewer rates based on whether the user is a residential, commercial, or industrial customer.

- **Residential users** are all assigned a flat rate based on the assumed average discharge from their property type: single-family, multi-family, or mobile home. Actual wastewater discharges are not directly measured for each residence. Instead, ESD uses standard assumptions to estimate the typical flow and strength of residential wastewater from each property type. Residential users are billed annually via the Santa Clara County property tax roll.
- **Commercial/Light Industrial customers** are businesses that discharge less than 25,000 gallons per day.[2] To estimate total flow, ESD takes water usage data provided by local water retailers from January through March. This is done to avoid the effects of water use for irrigation. The strength of the wastewater is based on California State Water Resources Control Board (SWRCB) assumptions and other sources for the commercial customer's industry. Commercial customers are billed annually via the Santa Clara County property tax roll.
- **Industrial customers** (monitored customers) discharge over 25,000 gallons per day or discharge wastewater with excessive strength. These customers are billed based on actual metered flow and actual tests for the strength of the three components: BOD, suspended solids, and ammonia. These customers are billed monthly by the City based on the results of sampling performed by ESD staff. Due to the high strength of their wastewater, staff report most industrial customers perform "pretreatment" to reduce the amount of pollutants (and thus their bill) before discharging their wastewater into the sewer system.

Costs for Treating Wastewater Fluctuate

The costs for treating flow and strength reflect the resources required to operate, maintain, and upgrade the City's sanitary sewer system and the RWF.

- **Operations and Maintenance (O&M) costs** associated with sewage treatment are divided between flow and the strength components based on fixed percentages:
    - 34 percent is allocated to flow, and
    - 22 percent is allocated to each of the three strength components (BOD, suspended solids, and ammonia).

[2] This category includes businesses, institutions (including schools), and light industrial facilities that discharge wastewater below the 25,000 gallons per day limit. There are around 60 different classifications within this category (e.g., business office, retail, restaurant, medical center).

Costs can fluctuate due to inflationary factors for chemicals and energy, and ensuring compliance with environmental regulations.

- **Capital costs** are allocated to the component (flow or a strength component) that the capital project is intended to treat. For example, capital improvements to the nutrient removal process would be allocated to BOD and ammonia. This cost allocation approach means that, over time, the cost of treating certain components will change due to project types and evolving operations.

Overall, ESD allocated $211 million in expected costs through the rate model in FY 2025-26. Projected operations and maintenance costs totaled $161 million and capital costs totaled $50 million.

Collectively, residential users were allocated 84 percent of the $211 million projected costs in 2025-26. Less than 3 percent of costs were allocated across all industrial customers combined.

All Customers Pay the Same Unit Rate, but Overall Bills Vary Based on the Flow and Strength of Wastewater

ESD allocates costs to create a unit rate for each component: flow, BOD, suspended solids, and ammonia. Every user pays the same unit rate. The number of units—how much flow, how much BOD—is based on the user's assumed or actual wastewater discharge. This affects the eventual rate that a user pays. Since there are many factors that affect user wastewater discharge amounts and strength, and there are about 350,000 users, some assumptions must be used to estimate discharges for each customer. Reasonable estimates are in line with guidance from Proposition 218.

For instance, to calculate residential sewer rates, the City multiplies the unit rates by the assumed amount of wastewater flow and pollutant strength levels generated by a typical household based on its flow study.

2025-26 Single-Family Residential Rate Calculation

In 2025-26, all single-family residences combined had an assumed flow of about 13,300 million gallons for the entire year. ESD then applied the unit rates for flow—one for capital and one for O&M—to create a total cost for treating flow from all single-family residences. This same process was repeated for the assumed amounts of BOD, suspended solids, and ammonia.

The calculated total cost to treat all single-family residential wastewater was $110 million in 2025-26. This was then divided by the number of single-family residences (182,500) to create the annual sewer rate a single-family residence was charged: $605.04. Similar calculations are done for each of the residential user property types.

What the residential rate calculation has in common with the commercial and industrial rate calculations are the unit rates. What varies is the assumed or actual flow and strength plugged into the calculation.

For examples of how changes in units and wastewater composition can affect unit rates, see Appendix B.

State and Local Laws Guide Sewer Rate Setting

The City's authority to establish and collect sewer service charges is governed by a combination of state law and the Municipal Code, which set the framework for rate setting, public engagement, and financial oversight.

- **Proposition 218** updated the California Constitution, and is central to how local agencies in the state, including San José, can impose property-related fees, including sewer service charges. Its key requirements include:
  - *Cost of service:* Fees must not exceed the proportional cost of providing the service.
  - *Use of Revenues:* Fees must be limited to services used by, or immediately available to, the property owner and may not be used to fund programs unrelated to the service provided.
  - *Public notice and hearing:* Agencies must notify ratepayers and allow for protest before implementing new or increased rates.
- **San José Municipal Code, Chapter 15.12** authorizes the City to construct, operate, and maintain the sanitary sewer system, enforce discharge requirements, and collect service charges to fund system reconstruction and improvements.

ESD Divisions Collaborate on Rate Setting

Divisions within ESD coordinate to set sewer rates.

- **Utility Financial and Business Operations Division** leads the rate-setting process and oversees long-term financial planning. Staff develop financial models to ensure that rates fully recover the costs of operations, maintenance, capital improvements, and debt service.
- **Watershed Protection Division** supplies industrial discharge data, oversees the pretreatment program, and ensures compliance with federal and state regulatory requirements. The pretreatment program monitors industrial users that discharge more than 25,000 gallons per day or that discharge wastewater with excessive strength, collecting flow and sample data that is used by ESD's finance staff for billing. The pretreatment team works with the majority of industrial users who treat their wastewater

beyond minimum requirements before discharge, which reduces costs for those users and helps the RWF manage capacity.

Consultant Will Be Reviewing Flow and Strength

In 2015, ESD released a consultant study of wastewater flow and strength. Part of the analysis included a review of the baseline data used to estimate the volume of wastewater generated by residential users. Based on those results, the City updated the rate model's flow estimates for residential users to better reflect their proportional use. The study also measured and analyzed flow and strength entering into the RWF against the assumed levels. The study determined that the City should continue with the current strength parameters until field sampling could be conducted.

In 2025, the City issued a request for proposal for an updated flow and loading study, seeking a consultant to review and update sewage flow and strength characteristics used to allocate costs and set rates for users of the RWF. At the time of the audit, staff had received approval from City Council to negotiate and execute the contract with the selected consultant. The study is estimated to take about two years to complete.

This page was intentionally left blank

Finding 1 ESD Should Review Assumptions Within Its Rate Model

Summary

ESD uses a rate model that follows guidelines set out by the California State Water Resources Control Board (SWRCB) for allocating costs. However, some of the assumptions which drive the calculations within the model have not been reviewed in many years to determine if they reflect current conditions. In some cases, the assumptions date back to at least the 1970s. A 2015 consultant study found that the strength of wastewater reaching the San José–Santa Clara Regional Wastewater Facility (RWF) did not match what was assumed in the rate model and should be reviewed further. Until field sampling occurs, the study determined that the City should continue with the current strength parameters. This is expected to be addressed in an upcoming flow and loading study. ESD should review the rate model assumptions for calculating sewer rates to ensure they reflect current conditions and update them as applicable. ESD also should clarify and strengthen its procedures around how often assumptions in the rate model should be reviewed. In addition, ESD should consider implementing a software solution for its rate model, as its current model is Excel-based and relies on many Excel formulas and manual data entry inputs.

The Rate Model Follows Cost Allocation Procedures, but ESD Should Review the Model's Assumptions

In 2014, the California State Water Resources Control Board (SWRCB) determined that San José's rate model complied with Clean Water State Revolving Fund (SRF) requirements. ESD's rate model is based on the SWRCB 1998 guidelines for revenue programs. The guidelines provide a reasonable basis for allocating costs to users and includes guidance for cost allocation and wastewater strength.[3] According to staff, the cost allocation process has remained the same since the 2014 approval by the SWRCB.

The City Should Review Assumptions Within the Rate Model

Many of the assumptions which drive the calculations within the model have not been reviewed for many years to determine if they reflect current conditions. In some cases, the assumptions date back to at least the 1970s. It is important that

[3] These are the Revenue Program Guidelines from the Policy for Implementing the State Revolving Fund for Construction of Wastewater Treatment Facilities. The 1998 guidelines state that they apply to all recipients of State Revolving Fund loans. At the time of the state's approval, the City had a State Revolving Fund loan. According to the guidelines, a revenue program is a "formally documented determination of a user charge system" that is "designed to provide a source of revenue for operation, maintenance, and replacement (O. M. & R.) costs of the wastewater system."

assumptions reflect current conditions to ensure costs are allocated as accurately as possible. Changing assumptions, however, can lead to higher or lower unit rates for aspects within the rate model, and can impact customer categories differently. Some may have higher bills, and others could have lower as a result.

Strength Components Should Be Reviewed

Strength components for BOD, suspended solids, and ammonia for residential users date back to 1975. For commercial users, strength components for BOD and suspended solids are adapted in part from the 1998 SWRCB guidelines, some of which are the same as SWRCB guidance from at least the 1970s. The source of assumed ammonia strengths for commercial users are from at least the 1970s per staff, but they are not in the state guidelines.

The City's 2015 consultant flow and strength study of the RWF's revenue program found: "The loading values for the current revenue plan understate the amount of BOD, TSS, and NH_3 entering the plant."[4] In other words, the strength of the wastewater coming into the facility did not match the assumptions in the model. Exhibit 1 presents the study results comparing the measured BOD, suspended solids, and ammonia entering the facility versus the rate model assumptions. The 2015 consultant study determined that the City should continue with the current strength parameters until field sampling could be conducted.

Exhibit 1: The 2015 Consultant Analysis Showed Strength (Load) Assumptions Underestimated Actual Influent[5]

	Flow (mgd)	BOD (lbs/day)	Suspended Solids (lbs/day)	Ammonia (lbs/day)
2015 Flow and Strength Study Results	113	273,302	260,579	29,347
Rate model assumptions	115	192,782	181,459	24,553

Source: Auditor adapted from the 2015 Phase 3 Flow and Load Study.

Note: The first row of the table shows the measured flow, BOD, suspended solids, and ammonia values at the facility. The second row shows the values based on the flow and strength assumptions used in the rate model at the time.

Other jurisdictions have found a need to update their strength assumptions in recent studies that reviewed flow and strength. Palo Alto revised its strength components upward based on a 2021 study. The study noted that wastewater flows had decreased due to conservation since a prior study, leading to an increased concentration of solids and organics. Union Sanitary District also revised

[4] The agencies that comprise the RWF's revenue program consist of San José, Santa Clara, Milpitas, Cupertino Sanitary District, County Sanitation District Nos. 2-3, West Valley Sanitation District, and Burbank Sanitary District.

[5] Influent refers to the wastewater entering the RWF, before any treatment takes place at the facility. Strength is a measure of the concentration of pollutants in wastewater. Loading measures that same strength multiplied by flow to achieve a measure of the pounds of pollutants discharged per day. For the purposes of this audit, these terms (strength and loading) are interchangeably used.

its strength assumptions based on a 2024 study, which attributed this to a shift in the relative flows, loadings, and accounts among customer categories since the last study.

Because the City's 2015 study did not look at the source of the influent by customer category, the study called for additional review around the strength assumptions. The consultant also noted that "It is unknown whether the cause of the discrepancy is due to residential or non-residential loading assumptions." At the time of the audit, this review had not yet been conducted, however staff reported it was expected to be addressed in the upcoming flow and strength study.

Other Assumptions May Need Review

Many other assumptions are included in the current rate model. Others that may need review include:

- **Working days in a year:** This assumption helps to establish how much sewage a user discharges in a day and is used to allocate capital costs. The assumptions for the different users generally date back to at least the 1970s–1980s. Changing the number of working days for one customer category could impact the capital unit rate that all users pay. This in turn could lead to a higher or lower capital costs for that customer category and potentially affect the costs for others.
- **Operations and Maintenance (O&M) cost allocations:** O&M costs associated with sewage treatment are allocated based on fixed percentages: flow (34 percent), BOD (22 percent), suspended solids (22 percent), and ammonia (22 percent). These allocations are also from at least the 1970s.

ESD Should Clarify and Strengthen Its Procedures for Regularly Reviewing the Rate Model

Over time, societal and technological changes can impact wastewater characteristics. According to staff, high efficiency housing appliances and changes in water usage across the local economy have led to more concentration in sewage discharge. Shifts like this underscore the importance of regularly reviewing rate model assumptions.

ESD's current internal rate model procedures can be strengthened to require more regular reviews of the model assumptions. Currently, the procedures only "[recommend] that the [rate model] assumptions be updated every ten years to ensure accuracy and equity." It further states that this *may* include updating household densities used to estimate residential sewer flows based on the latest census information and reviewing water consumption data,[6] and that this *may*

[6] As a result of a recommendation from the 2012 *Audit of Environmental Services: A Department at a Critical Juncture*, ESD updated residential assumptions regarding wastewater flow and household sizes.

include updating residential and non-residential strength components based on more current data.

At the time of the audit, staff had received City Council approval to negotiate and execute a contract with a consultant to perform a new flow and loading study. However, updating the assumptions based on the study results will happen beyond the 10-year mark of the last study.

Other agencies use comprehensive studies to update assumptions or provide recommended sewer rates directly. The review of wastewater assumptions can be based on various factors, such as a comparison with other agencies, prior studies, and/or actual quantities received at treatment facilities.

ESD Should Consider Exploring Software Options for Its Rate Model

ESD's rate model is Excel-based and relies on numerous Excel formulas and over 100 manual data entry inputs. Reliance on formulas and manual data entry can pose a risk for input errors or version control issues. The FY 2025-26 rate model is used to allocate more than $200 million in projected costs, which further highlights the value of software tools to safeguard against such potential risks.

In 2020, the City of Sacramento replaced its Excel-based model with a rate model software. Sacramento staff reported that it was preferable as it provided them flexibility in running scenarios and improved internal controls over data entry (e.g., version control).

ESD's current rate model allocates costs using a variety of forms that are consistent with the SWRCB 1998 revenue program guidance. The SWRCB's forms provide step-by-step cost allocation and rate calculations. These forms are no longer specifically included in the state's policy, which allows ESD to explore other options.[7] Other jurisdictions' consultant reports have referenced guidance from the Water Environment Federation on establishing rates for wastewater systems.[8] When determining whether to replace the current Excel-based method of calculating rates, there may also be opportunities to update the process of allocating costs.

Recommendations:

1: The Environmental Services Department should review the rate model assumptions for calculating sewer rates to ensure they reflect current conditions and update as applicable, including:

a. Strength assumptions for non-monitored users,

[7] The revenue program guidelines were removed from the SWRCB's Policy for Implementing the Clean Water State Revolving Fund in 2008.

[8] The Water Environment Federation is a not-for-profit technical and educational organization that provides water quality professionals with water quality education, training, and business opportunities.

b. **Working days in a year for non-residential users,**

c. **Allocations of operations and maintenance costs, and**

d. **Other assumptions as necessary that impact user rates.**

2: The Environmental Services Department should strengthen its sewer rate model procedures to clarify how often strength, flow, and other assumptions should be reviewed and updated.

3: To improve the workflow for calculating sewer rates, the Environmental Services Department should consider implementing:

a. **A rate model software solution, and**

b. **A more streamlined way to allocate costs, potentially with the use of a consultant.**

This page was intentionally left blank

Finding 2 ESD Should Develop Formal Reserve Policies

Summary

ESD does not have a formal policy that sets target levels or defines the purpose for reserves in the Sewer Service and Use Charge Fund. The amount of funds held in reserves and unrestricted fund balance has fluctuated over time. Having formal reserve policies can help ESD manage financial risks, address unanticipated costs, and plan for future needs. Formal reserve policies or practices are common among other wastewater utilities.

ESD Maintains Multiple Reserves Within the Sewer Service and Use Charge Fund

ESD does not currently have formal reserve policies for the Sewer Service and Use Charge Fund (Fund 541).[9] ESD maintains several categories of reserves within this fund that are set annually through the budget and rate-setting processes. These include operations and maintenance, capital program and financing, rate stabilization, and workers' compensation claims reserves. While not technically a reserve, the fund also includes an unrestricted ending balance.[10]

In some cases, budgeted reserves have fluctuated over time. For example:

- Between FY 2016-17 and FY 2023-24, the budgeted rate stabilization reserve held steady at $2 million, but then grew to $21 million in FY 2024-25.
- The budgeted unrestricted ending fund balance varied greatly over the past ten years, ranging from $700,000 to $22 million.

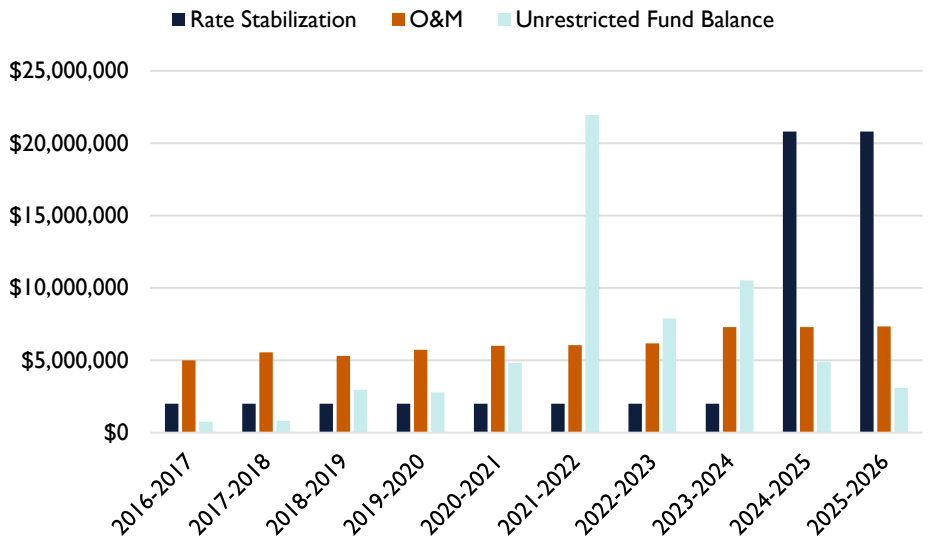
The budgeted operations and maintenance reserve steadily grew from about $5 million in FY 2016-17 to about $7 million in FY 2025-26. According to staff, ESD has used an informal target of two months of operating expenditures to guide the operations and maintenance reserve. ESD stated this level of reserve was modeled after language in the City's Municipal Code for the City's water utility, but the target has not been formally adopted for Fund 541.

[9] Fund 541, the Sewer Service and Use Charge Fund, accounts for revenues and interest collected from ratepayers to finance, construct, operate, and maintain the City's sewage collection system and for the City's share of the San José–Santa Clara Regional Wastewater Facility.

[10] Per the Budget Office, the unrestricted ending balance in the Sewer Service and Use Charge Fund (Fund 541) refers to the difference between total revenue sources and total expenditure uses in the fund. Money set aside in a reserve is calculated as part of the expenditure use. These funds are available as a funding source for the current or upcoming fiscal year.

Exhibit 2 shows how the budgeted non-capital reserve levels and unrestricted fund balance have fluctuated over a 10-year period.

Exhibit 2: Non-Capital Budgeted Reserve Levels and Unrestricted Fund Balance in Fund 541 (FY 2016-17 to FY 2025-26)



Source: Auditor analysis of Fund 541 Source and Use of Funds statements from adopted operating budgets.

At the time of the audit, the Administration was drafting an update to Council Policy 1-18, the Operating Budget and Capital Improvement Program Policy, that is expected to provide high-level direction on utility rate setting but does not yet address reserve policies for fee-related funds.[11]

Best Practices Recommend Clear Reserve Targets and Policies

Professional standards emphasize the importance of formal reserve policies to address unanticipated costs or other risks to operations such as reduced revenues or natural disasters. For the General Fund, the Government Finance Officers Association (GFOA) recommends that governments:

- Maintain an operating reserve of at least two months of expenditures, and
- Establish separate capital reserves with defined purposes, such as pay-as-you-go funding, repair and replacement, and emergency needs, based on capital improvement plans and organizational risk tolerance.

Similar principles apply for utility funds. For example, the California State Water Resources Control Board (SWRCB) in its 1998 guidelines encourages wastewater utilities to maintain operating reserves, stating that that typical reserves among

[11] This is in response to audit recommendations regarding rate setting from the 2012 *Audit of Environmental Services: A Department at a Critical Juncture*.

California wastewater agencies range from 10 to 50 percent of annual revenue requirements.

Standards such as these highlight that reserves serve multiple functions: operating stability, managing rates, capital readiness, and risk mitigation.

Peer Agencies Have Adopted Formal Reserve Policies or Practices

Other wastewater agencies have established formal reserve policies or practices, which define target levels and/or intended uses for the reserves.

Exhibit 3: Peer Agencies Maintain Formal Reserve Policies or Practices

Agency	Description	Target Level
City of Palo Alto	Documented management practices reviewed annually by Council	105 days of O&M costs
Union Sanitary District	Policy established by district for reserve types and targets	Target balance plus 25% of annual operating expenses for operating cashflow
City of Los Angeles	Reserves required by city policies and bond resolutions	45 days of budgeted O&M expenses
Orange County Sanitation District	Seven different reserve policy criteria included in the budget	Various targets such as 50% next year operating expense
East Bay Municipal Utility District	Designated operating reserve policy	Working capital reserve of at least 3x net monthly O&M expenses
City of Sacramento	Council-adopted designated reserve policy	120 days working capital for O&M; one year of major capital expenses for capital

Source: Auditor summary of interviews with benchmark agencies and program materials.

Compared to these agencies, San José stands out in terms of not having formal reserve policies or practices for its sewer fund. ESD's reporting on sewer reserve activity is also limited to Citywide budget documents, which reduces transparency. To better inform the City Council and the public about actual and targeted sewer reserve levels, ESD should include this information in its annual rate proposal memo.

Recommendation:

4: To better manage risk and plan for future needs in the Sewer Service and Use Charge Fund, the Environmental Services Department should:

a. Develop and adopt a formal sewer reserve policy that defines reserve types with intended uses and target levels, and

b. Report on targeted and actual reserve levels in the annual rate proposal memo to the City Council.

Finding 3 ESD Can Improve Transparency Around the Rate-Setting Process

Summary

Improved documentation of current practices and further information for stakeholders would help ESD better communicate how rates are calculated. Consolidating procedures on the frequency of wastewater sampling would improve transparency around how bills are calculated for industrial users. In addition, ESD could improve the accessibility of information it provides to the public about how sewer rates are calculated. Currently, walkthroughs of rate calculations are not published on the sewer rate web page, and the Frequently Asked Questions (FAQ) resource is difficult to locate. Peer agencies provide some useful examples of websites with clear, detailed information, in line with industry guidance.

ESD Should Consolidate Revenue Program Sampling and Billing Methodology Procedures for Industrial Users

Consolidating procedures on the frequency of wastewater sampling would improve transparency around how bills are calculated for industrial users. As noted in the Background, the ESD Watershed Protection Division's pretreatment program samples wastewater from industrial users to test for BOD, suspended solids, and ammonia. The results of these tests are then used to calculate the user's sewer bill.

Revenue Program Sampling Frequency and Calculation Methods Can Vary

- **Sampling frequency:** How often the pretreatment team takes samples of industrial users for billing purposes has varied over time. For example, staff report that prior to 2010 or 2011, samples were taken four times a month. This was reduced to twice a month. In FY 2022-23, staff started sampling twice a quarter. In some instances, users have been assigned fixed loading values based on the user's flow data. According to staff, there has been little to no change in operations in many years for these users. In these instances, there are users that do not get sampled (e.g., data centers and power plants or other operations using cooling towers).

  More frequent sampling can lead to more precise billings for customers but comes at a cost. According to ESD, the pretreatment team balances resource constraints with its sampling decisions. Staff report all industrial users are reviewed on an annual basis to determine if routine sampling for billing purposes is appropriate for them. However, the current sampling

frequency of twice-per-quarter or criteria for potential future changes to that frequency are not consolidated in a policy or formal procedures.[12]

- **Rolling average using 30 months of data**:[13] Generally, industrial users are billed based on a 30-month rolling average of their sample results. Staff report this is done to account for production and economic variability. Per staff, the pretreatment team set a precedent for using a 30-month interval based on an analysis of some customers, and this precedent has historically been used across industrial users. Though staff have documentation for the basis and guidance for applying the 30-month interval, the criteria for when ESD uses this methodology can be better defined and consolidated in procedure or policy.

In response to a customer concern, ESD began a pilot sampling program in fall 2024 for an industrial user. The pilot program involved collecting samples more frequently (two samples every month) and using the average of samples collected during the month to compute monthly billing (utilizing a monthly average, rather than a 30-month average).

Based on a review of the data collected during the pilot sampling program, staff determined that a 12-month rolling average more appropriately captured the variations in the user's particular operation. Staff report that while the 30-month rolling average was originally selected to account for seasonal and economic variations in users' flows, the program determines that alternate timeframes may better reflect a user's particular operation.

ESD should document how they determined which methodology is most appropriate for a user. They should also inform users about the sampling methodologies used and the rationale of any changes in their sampling methodology. This notification could occur through channels such as ESD's website, billing, or as a part of the rate notice.

Recommendation:

5: To enhance transparency around sewer rate setting for monitored users, the Environmental Services Department should document procedures for:

a. Setting and reviewing sampling frequencies and calculation methodologies (e.g., rolling averages), and

[12] The pretreatment program has internal guidance around cost-benefit considerations in sampling frequency determination for low-loading sites or sites with similar considerations. Such sites are then assigned fixed loading values.

[13] The 30 months consists of months that samples were collected. Under this approach, results from the previous 30 months where samples were collected are compiled into a running average. As a new "data month" is added, the oldest "data month" is removed from the calculations.

b. Notifying users as appropriate, including for the rationale of any changes in their sampling methodology.

ESD Should Enhance Online Sewer Rate Setting Information for the Public

ESD's online sewer rate resources could be enhanced to provide additional or more accessible information about how sewer rates are calculated. Examples include:

- Sample rate calculations or other examples on how rates are set for each customer category, and
- Links to flow, engineering, and other supporting studies used to inform rates.

Though ESD provides a sewer rates Frequently Asked Questions (FAQ) resource that includes rate tables, a multi-year residential rate history, and a high-level explanation of rate increases, the resource is not easily accessible on the main sewer rates web page, requiring extra navigation to locate. It also does not provide a thorough explanation of how sewer rates are calculated.

While full technical details may be complex, providing high-level sample rate calculations could improve understanding without overwhelming the public.

Peer Agencies Provide Transparent, User-Friendly Rate Information

Other wastewater agencies demonstrate that technical content can be both informative and accessible in common areas of interest:

Exhibit 4: Comparison of San José's Sewer Rates Web Page With Peer Agencies

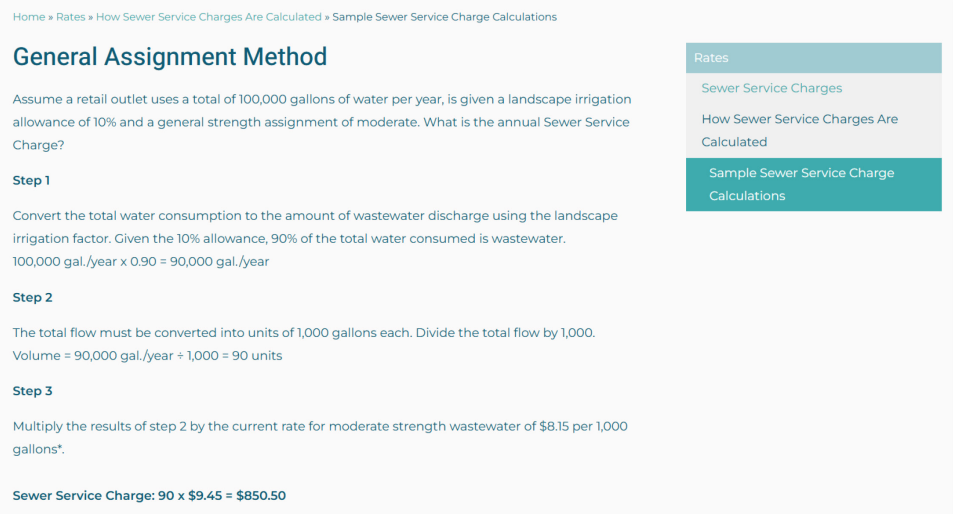
Category	San José	Peer Agencies
FAQs and General Information	The FAQ is not directly linked on the main sewer rates web page.	Orange County Sanitation District and City of Los Angeles link FAQs directly from their primary rate pages.
Sample Calculations and Customer Tools	No example calculations or bill calculator are provided.	Union Sanitary District, San Francisco Public Utilities Commission, and City of Los Angeles provide some sample calculations and/or a bill calculator to demonstrate how customer charges are determined.

Rate-Related Studies	Flow study and capital cost allocation studies are not posted online.	Union Sanitary District, Orange County Sanitation District, and City of San Diego post cost-of-service studies directly on their rate pages.

Source: City's sewer rates web page and peer agency sewer web pages.

Union Sanitary District's Sewer Service Charges web page provides an example of how technical content can be transparent and accessible when organized effectively.

Exhibit 5: Union Sanitary District Sewer Service Charges Web Page



Source: Union Sanitary District's website.

Industry Standards Emphasize Transparency

Best practices recommend that utilities clearly explain rates and make information publicly accessible. The GFOA encourages providing information on fees and charges to the public, particularly when existing rates are changed. GFOA guidance addresses information about cost recovery, the amounts of charges (current and proposed), and the anticipated impact of the new fee on providing the service in future years. The American Water Works Association (AWWA) also recommends making rate-related study materials, presentations made to utility decision makers, and general reference data available online to enhance community understanding of rate issues and gain acceptance of any proposed rate changes.[14]

Publishing clear, centralized materials such as cost-of-service studies, rate formulas, sample bills, and explanatory narratives would help ratepayers understand how fees are determined and why changes are necessary.

[14] The American Water Works Association (AWWA) is an industry organization that develops standards and best practices for the management, treatment, and delivery of water and wastewater services.

Recommendation:

6. **To improve the transparency and public understanding of sewer rate setting, the Environmental Services Department should update their sewer rate web page to:**

   a. **Make the "Frequently Asked Questions" information easily accessible, and**

   b. **Add descriptions of how rates are calculated for each customer category, including sample calculations and links to supporting studies.**

This page was intentionally left blank

Conclusion

The City of San José sets sewer rates to recover the costs of providing sanitary sewer and wastewater treatment services to residents and businesses. ESD uses a rate model that follows guidelines set out by the California State Water Resources Control Board (SWRCB) for allocating costs. Assumptions affect how costs are distributed to users, and a 2015 consultant flow and loading study found that assumptions in the San José–Santa Clara Regional Wastewater Facility (RWF) revenue program understate wastewater strength entering the facility. Further, some assumptions in the City's rate model date back to at least the 1970s. ESD should review its rate model to ensure assumptions are representative of current conditions and strengthen its procedures around how often assumptions in the rate model should be reviewed. In addition, ESD manages multiple sewer fund reserves but does not have a formal reserve policy, unlike other peer agencies. ESD should develop and adopt a formal sewer reserve policy to better manage risk and plan for future needs. Finally, clearer documentation and information would improve transparency around rate setting decisions, such as documentation of sampling decisions for industrial users and additional, accessible information for ratepayers on the sewer rates web page.

RECOMMENDATIONS

Finding 1: ESD Should Review Assumptions Within Its Rate Model

Recommendation #1: The Environmental Services Department should review the rate model assumptions for calculating sewer rates to ensure they reflect current conditions and update as applicable, including:

a. Strength assumptions for non-monitored users,

b. Working days in a year for non-residential users,

c. Allocations of operations and maintenance costs, and

d. Other assumptions as necessary that impact user rates.

Recommendation #2: The Environmental Services Department should strengthen its sewer rate model procedures to clarify how often strength, flow, and other assumptions should be reviewed and updated.

Recommendation #3: To improve the workflow for calculating sewer rates, the Environmental Services Department should consider implementing:

a. A rate model software solution, and

b. A more streamlined way to allocate costs, potentially with the use of a consultant.

Finding 2: ESD Should Develop Formal Reserve Policies

Recommendation #4: To better manage risk and plan for future needs in the Sewer Service and Use Charge Fund, the Environmental Services Department should:

a. Develop and adopt a formal sewer reserve policy that defines reserve types with intended uses and target levels, and

b. Report on targeted and actual reserve levels in the annual rate proposal memo to the City Council.

Finding 3: ESD Can Improve Transparency Around the Rate-Setting Process

Recommendation #5: To enhance transparency around sewer rate setting for monitored users, the Environmental Services Department should document procedures for:

a. Setting and reviewing sampling frequencies and calculation methodologies (e.g., rolling averages), and

b. Notifying users as appropriate, including for the rationale of any changes in their sampling methodology.

Recommendation #6: To improve the transparency and public understanding of sewer rate setting, the Environmental Services Department should update their sewer rate web page to:

a. Make the "Frequently Asked Questions" information easily accessible, and

b. Add descriptions of how rates are calculated for each customer category, including sample calculations and links to supporting studies.

APPENDIX A

Audit Objective, Scope, and Methodology

The mission of the City Auditor's Office is to identify ways to increase the economy, efficiency, effectiveness, equity, and accountability of City government by independently assessing and reporting on City operations and services. The audit function is an essential element of San José's public accountability, and our audits provide independent analysis, reliable information, and recommendations for improvement to the City Council, City Administration, and the public. In accordance with the City Auditor's Fiscal Year (FY) 2025-26 Audit Work Plan, we have completed an audit of the City's process for setting sewer rates. The audit was conducted in response to a request from a Councilmember.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The objective of this audit was to assess the City's process for setting sewer rates. We sought to understand the relevant internal controls over setting sewer rates, and have performed the following to achieve the audit objective:

- To understand the City's process for setting sewer rates, we interviewed staff in the Environmental Services Department (ESD), and reviewed:
    - The City's 2025-26 San José-Santa Clara Regional Wastewater Facility Revenue Program and related forms for calculating sewer rates
    - ESD's Utility Financial and Business Operations Division's procedures on the San José-Santa Clara Regional Wastewater Facility Revenue Program and Watershed Protection Division's pretreatment program procedures
    - Annual Sewer Service and Use Charge memoranda and City Council resolutions from FY 2015-16 to FY 2025-26
    - California State Water Resources Control Board's 1998 Revenue Program Guidelines from the Policy for Implementing the State Revolving Fund for Construction of Wastewater Treatment Facilities
    - Sewer Service and Use Charge Fund (Fund 541) Source and Use statements from FY 2016-17 to FY 2025-26 from adopted operating budgets
    - ESD's sewer rates web page and online resources
    - The Carollo Engineers 2015 Phase 3 Flow and Load Study
    - The 2025 request for proposal and draft scope of work for a flow and loading study
    - The City's draft updates to Council Policy 1-18 Operating Budget and Capital Improvement Program Policy
- To understand industry standards around fund balances and reserves, rate model review, and/or transparency around sewer rate resources:
    - Benchmarked with following agencies:

        - City of Palo Alto
        - City of Sacramento
        - East Bay Municipal Utility District
        - City of Los Angeles
        - Orange County Sanitation District
        - Union Sanitary District
        - City of San Diego
    - Reviewed resources and guidance from the Government Finance Officers Association (GFOA) and the American Water Works Association (AWWA)
        - GFOA's Fund Balance Guidelines for the General Fund
        - GFOA's Strategies for Establishing Capital Asset Renewal and Replacement Reserve Policies
        - GFOA's Establishing Government Charges and Fees
        - AWWA's M1 Manual of Water Supply Practices: Principles of Water – Rates, Fees, and Charges, Seventh Edition
- To understand laws, regulations, and City policies relevant to the audit objectives, we reviewed:
    - Articles XIII C and D of the California Constitution resulting from Proposition 218
    - California State Water Resources Control Board's Policy for Implementing the Clean Water State Revolving Fund
    - California Government Code §53750–§53756
    - San José Municipal Code:
        - Chapter 15.12
        - Chapter 15.16
        - Chapter 4.80 Part 12 and Part 60
    - Federal Clean Water Act

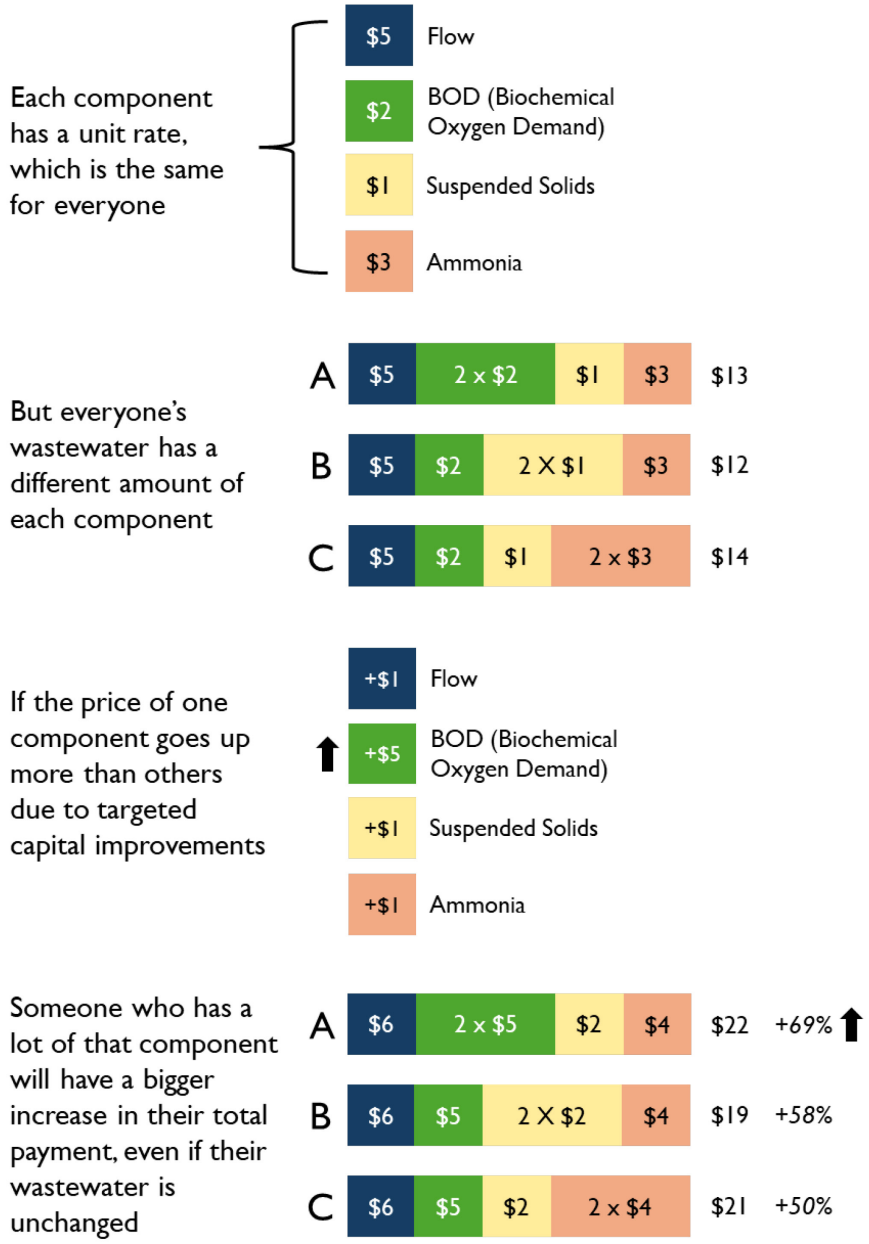
We would like to thank the Environmental Services Department for their time and insight during the audit process.

APPENDIX B

Examples of Rate Changes Based on Units, Costs, and Wastewater Composition

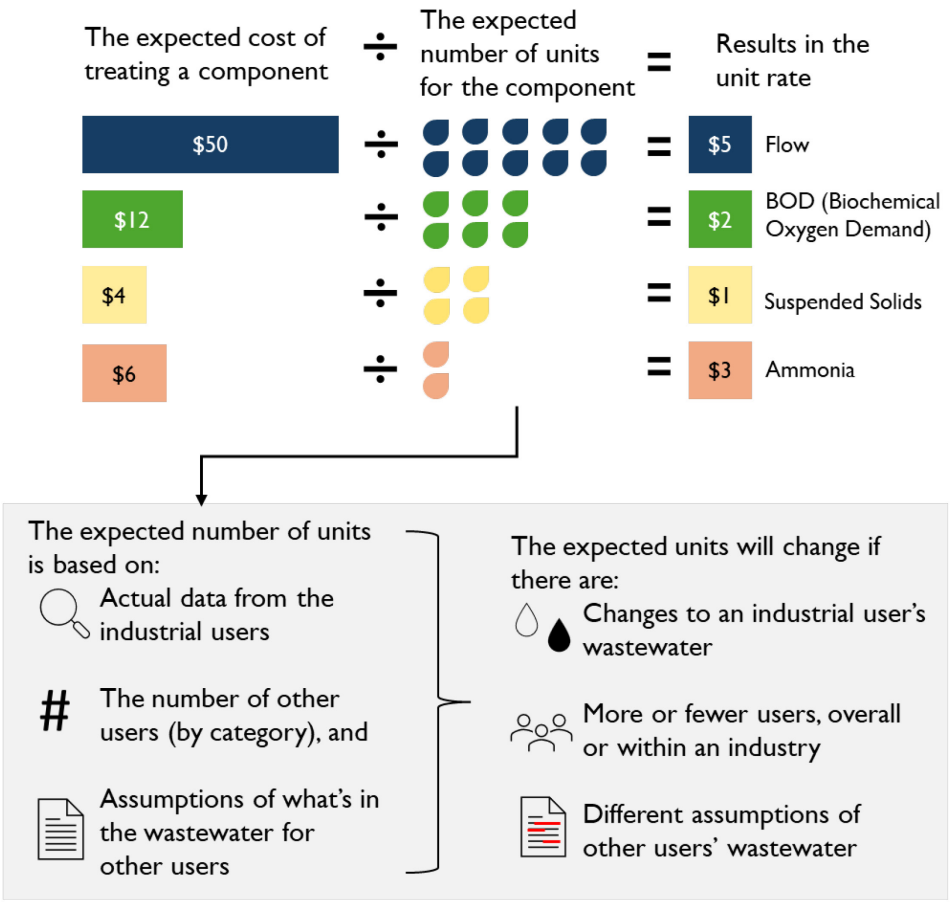
Note: all data used is just for example purposes

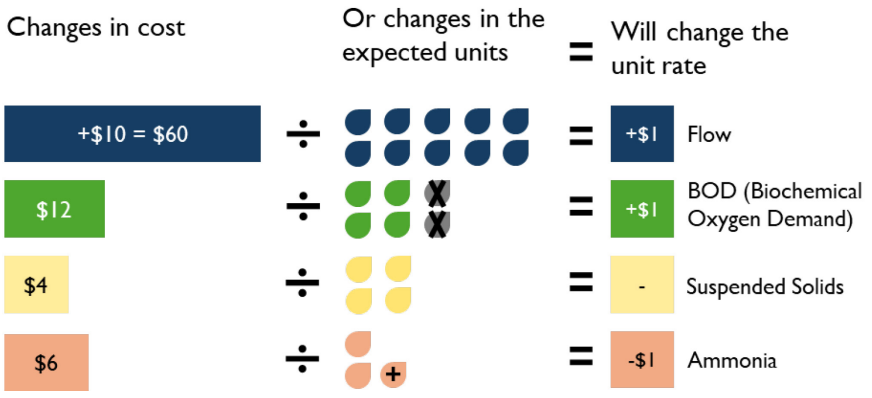
Changes to Unit Rates Affect Users Differently



Source: Auditor summary of ESD rate model program materials and staff interviews.

Changes to Costs and Assumed Inflow Affect Unit Rate





Source: Auditor summary of ESD rate model program materials and staff interviews.

Note: This graphic is a simplified representation. For more comprehensive details, see the Background of the report.

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY

Memorandum

TO: Joseph Rois **FROM:** Jeff Provenzano

SUBJECT: See Below **DATE:** January 26, 2026

Approved Manuel Pineda Date
Email: manuel.pineda@sanioseca.gov
Date: 01/27/2026 PST

SUBJECT: ADMINISTRATION RESPONSE TO AUDIT OF SEWER RATES

BACKGROUND

As part of the June 3, 2025, Sewer Service and Use Charge utility rate hearing, Vice Mayor Foley requested that an audit be conducted of the Environmental Service Department's (ESD's) sanitary sewer rate-setting process. In fall 2025, the City Auditor's Office conducted a review of the department's rate modeling assumptions and applications, conducted interviews with City staff and external subject matter experts, and produced a report of their findings.

The Administration has reviewed the draft audit report – *Sewer Rates: Reviewing Rate Model Assumptions and Developing Reserve Policies Would Improve the Rate -Setting Process* and agrees with the three (3) findings and six (6) recommendations identified in the report. This memorandum captures the Administration's response to each recommendation, including the actions to be taken in order to close out each recommendation (indicated by "Green" and "Target Completion Date").

RECOMMENDATIONS AND ADMINISTRATION RESPONSES

Finding 1: ESD Should Review Assumptions Within Its Rate Model.

Administration Response to Finding #1: The Administration is appreciative of this finding and will be reviewing its rate model assumptions in alignment with best practices.

> Recommendation #1: The Environmental Services Department should review the rate model assumptions for calculating sewer rates to ensure they reflect current conditions and update as applicable, including:
>
> a. Strength assumptions for non-monitored users,
> b. Working days in a year for non-residential users,
> c. Allocations of operations and maintenance costs, and
> d. Other assumptions as necessary that impact user rates.

Administration Response to Recommendation #1: The Administration agrees with this recommendation.

Green: ESD has initiated a two-year, comprehensive study of sanitary sewer flows and strengths from all user types within the San José / Santa Clara Regional Wastewater Facility service area. Further, the department will work with its consultants and subject matter experts during this time to review or update assumptions on working days for non-residential users, allocations of operations and maintenance costs, and other assumptions that impact user rates using industry best practices.

Target Completion Date: December 31, 2027

> Recommendation #2: The Environmental Services Department should strengthen its sewer rate model procedures to clarify how often strength, flow, and other assumptions should be reviewed and updated.

Administration Response to Recommendation #2: The Administration agrees with this recommendation.

Green: While the department has had a standing practice of studying strength and flow assumptions approximately every 10 years, the department will formalize and document this procedure, stipulating to scope and frequency of recurrence.

Target Completion Date: December 31, 2026

> Recommendation #3: To improve the workflow for calculating sewer rates, the Environmental Services Department should consider implementing:
>
> a. A rate model software solution, and
> b. A more streamlined way to allocate costs, potentially with the use of a consultant.

Administration Response to Recommendation #3: The Administration agrees with this recommendation.

Green: Implementation of a rate modeling software solution will minimize manual entry of data into Excel spreadsheets and will decrease the opportunity for human error, as well as increase the department's ability to model scenarios in real time. Utilization of a consultant in performing a cost-of-service study will provide a greater degree of objectivity in analysis of variables which contribute to sanitary sewer rates. It is important to note that a review of industry best practices may result in recommended methodological changes which impact rates for different user categories and incorporation of loading values from the sanitary flow and loading study currently underway and may impact costs allocated to various users as well.

Target Completion Date: December 31, 2027

Finding 2: ESD Should Develop Formal Reserve Policies.

Administration Response to Finding #2: The Administration agrees with this finding.

> Recommendation #4: To better manage risk and plan for future needs in the Sewer Service and Use Charge Fund, the Environmental Services Department should:
>
> a. Develop and adopt a formal sewer reserve policy that defines reserve types with intended uses and target levels, and
> b. Report on targeted and actual reserve levels in the annual rate proposal memo to the City Council.

Administration Response to Recommendation #4: The Administration agrees with this recommendation.

Green: ESD and the City Manager's Budget Office will submit an update to Council Policy 1-18 providing guidelines on the use of reserves for each major utility fund, inclusive of the Sewer Service and Use Charge Fund (541). The departments will present simplified source and use statements from the Proposed Budget (including reserve levels) as part of the annual utility rate hearing.

Target Completion Date: June 30, 2026

Finding 3: ESD Can Improve Transparency Around the Rate-Setting Process.

Administration Response to Finding #3: The Administration agrees with this finding.

> Recommendation #5: To enhance transparency around sewer rate setting for monitored users, the Environmental Services Department should document procedures for:

> a. Setting and reviewing sampling frequencies and calculation methodologies (e.g., rolling averages), and
> b. Notifying users as appropriate, including for the rationale of any changes in their sampling methodology.

Administration Response to Recommendation #5: The Administration agrees with this recommendation.

Green: ESD will document, review and update its sampling procedures for monitored industrial users to include a) parameters in determining sampling frequency; and b) notification to users of changes in their sampling methodology.

Target Completion Date: June 30, 2026

> Recommendation #6: To improve the transparency and public understanding of sewer rate setting, the Environmental Services Department should update their sewer rate web page to:
> a. Make the "Frequently Asked Questions" information easily accessible, and
> b. Add descriptions of how rates are calculated for each customer category, including sample calculations and links to supporting studies.

Administration Response to Recommendation #6: The Administration agrees with this recommendation.

Green: ESD will include responses, infographics and sample calculations for each customer category as part of its spring 2026 rate noticing communications. Further, the department will move the FAQ section of its rate noticing websites to a higher level and more easily accessible utility rates webpage.

Target Completion Date: June 30, 2026

COORDINATION

This memorandum has been coordinated with the City Attorney's Office and City Manager's Budget Office.

CONCLUSION

We thank the City Auditor and his staff for the recent audit, *Sewer Rates: Reviewing Rate Model Assumptions and Developing Reserve Policies Would Improve the Rate -*

Setting Process. The audit report contains six recommendations that are intended to assure accuracy and improve transparency in the rate-setting process. The Administration will take action to implement these recommendations.

For questions, please contact Nick Ajluni, Division Manager, Environmental Services Department at nick.ajluni@sanjoseca.gov.