THE CITY OF SAN DIEGO

OFFICE OF THE INDEPENDENT BUDGET ANALYST REPORT

Date Issued: July 14, 2025 **IBA Report Number:** 25-24

Independent Review of the Public Utilities Department's Wastewater Cost of Service Study and Request for Rate Increase for FY 2026-2029

BACKGROUND

Based on Council direction provided in June 2017,[1] our Office hired an independent consultant, Stantec Consulting Services Inc. (Stantec), to review the most recent water and wastewater Cost-of-Service (COS) studies provided by the Public Utilities Department (PUD). The work of that consultant can be found in IBA Report 21-14 *Independent Review of the Public Utilities Department's Wastewater Cost of Service Study and Request for Rate Increase* as well as IBA Report 23-07 *Independent Review of the Public Utilities Department's Water Cost of Service Study and Request for Rate Increase for FY 2024-2025*.

In preparation for the release of another wastewater COS study, our Office once again hired Stantec through a competitive RFP process. Stantec is a consulting firm with expertise in rate development and evaluation, and conducted an in-depth review of the current wastewater COS study and proposed rate increases.

In December 2024, PUD released a *Wastewater Financial Plan, Cost of Service, and Rate Study* that includes proposed wastewater rate increases. A preliminary analysis of the cost of providing wastewater service (as well as water service) was included in the *IBA Review of the Public Utilities Department FY 2026-2030 Five-Year Financial Outlook* (IBA Report 25-02).

[1] *Resolution R-311180: A resolution of the Council of the City of San Diego directing the Independent Budget Analyst to include as a budget priority, the hiring of a consultant to advise the City Council and the Independent Rates Oversight Committee on water and wastewater cost of service studies and rate design*

FISCAL/POLICY ANALYSIS

Upon PUD's release of the *Wastewater Financial Plan, Cost of Service, and Rate Study* dated December 4, 2024, Stantec began conducting a detailed analysis of that study and the costs of providing wastewater services, allocation of those costs, and the rates being proposed by PUD. Stantec reviewed the model used by PUD and their consultant Raftelis and received additional backup documentation when requested. Meetings were held with PUD and Raftelis to ensure a clear understanding of the PUD's rate proposal put forth for the public and the City Council's consideration.

The attached report was prepared by Stantec and provides their independent analysis and recommendations regarding PUD's wastewater cost of service and rate study. In summary, Stantec found that the Financial Plan contained within the COS study is sound and tracks with historical trends. Additionally, Stantec confirmed that the most important recommendations from the previous review have been incorporated into the current COS study. For this report, Stantec recommended the following:

- Additional explanation should be provided on significant changes that were observed in the billed flows for each customer class, including an explanation on trends and usage patterns as well as discussion of the factors driving the changes to help support the analysis;
- PUD should in future studies update the wastewater strength assumptions for the non-single family residential classes;
- The narrative in the wastewater COS study on how PUD allocated costs for fixed assets and the five-year Capital Improvements Program (CIP) did not match the model, and should be amended to either match the allocation that was done in the water COS study, or provide an explanation of why the wastewater allocation factors are different;
- CIP allocations categorized as "Miscellaneous Projects" could be directly allocated to system functions; and
- More explanation should be provided on the change in cost allocations for sewer pipelines from the 100% allocation to fixed charges that was utilized in the most recent COS study to the current allocation of 67% fixed and 33% volumetric.

NEXT STEPS

PUD is bringing forward the Wastewater COS study to the Environment Committee on July 17th, 2025, in order to begin the official rate adoption process that is required under Proposition 218. If approved by the Environment Committee, a notice setting a public hearing on the potential rates will need to be approved in July, with final rates set sometime in September.

While the COS study and rates are sound, there may still be potential changes that can be made to the Financial Plan that could bring down rates further, such as updating reserves and revenues based on FY 2025 actuals. Our Office and Stantec will continue to work with PUD on these issues prior to final rate adoption. However, if the Council has specific recommendations for these rates,

we would encourage Councilmembers to make those recommendations known during the item setting the public hearing date in order to give staff time to address those recommendations.

Our Office and Stantec will continue to be available to the City Council and the public through the remainder of the process.

Jordan More
Principal Fiscal and Policy Analyst

APPROVED: Charles Modica
Independent Budget Analyst

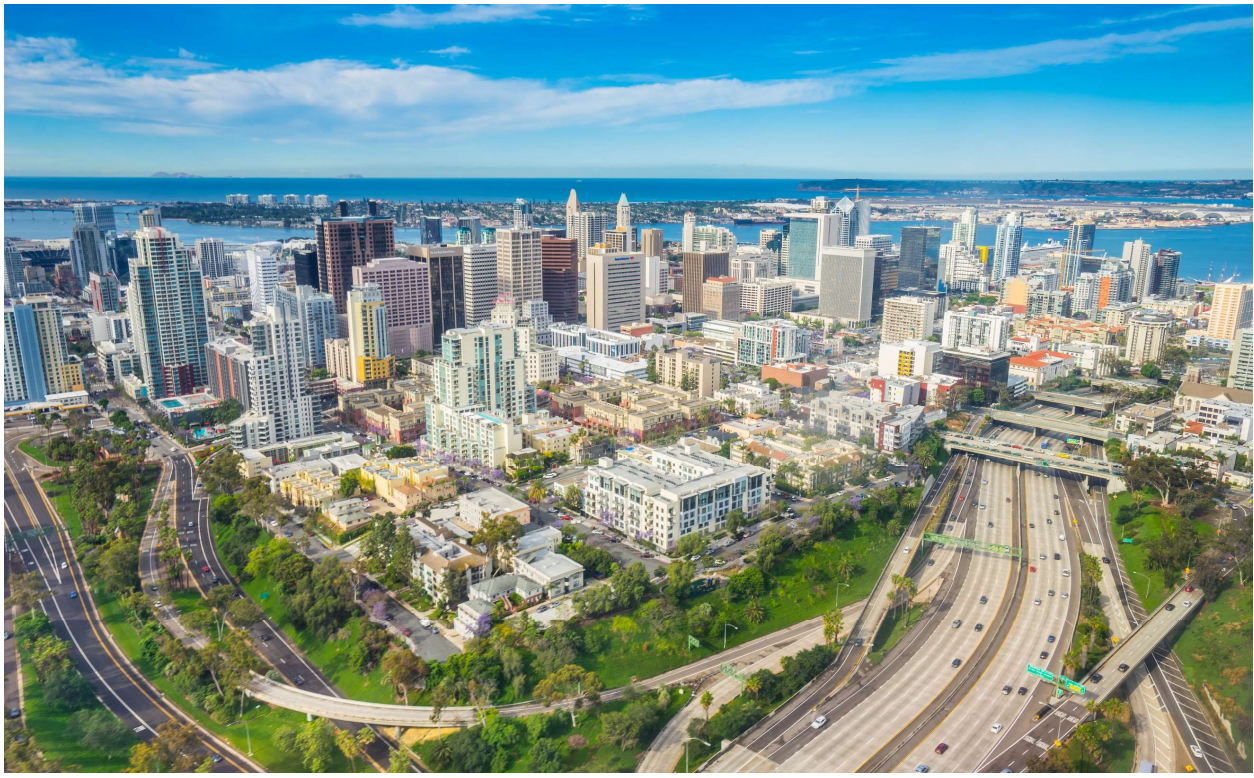
Attachment: *Independent Review of Wastewater Financial Plan, Cost of Service, and Rate Study Report* prepared by Stantec Consulting Services Inc. dated July 11, 2025

Independent Review of Wastewater Financial Plan, Cost of Service, and Rate Study Report

Prepared for:
City of San Diego, Office of the Independent Budget Analyst

July 11, 2025

Prepared by:
Stantec Consulting Services Inc.



Stantec Consulting Services Inc.

Disclaimer

The conclusions in the Report titled Independent Review of Water Financial Plan, Cost of Service, and Rate Study Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Table of Contents

Executive Summary **1**
1 Introduction & Background **2**
1.1 Rate Setting Process 2
1.2 Proposition 218 and Wastewater Rates 3
1.3 Objective, Scope, and Methodology 6

2 Financial Plan and Revenue Requirements **7**
2.1 Wastewater Accounts and Billed Flows Forecast 8
2.2 Budget vs Actual Operations and Maintenance Expenses 10

3 Cost of Service Analysis and Rate Design **12**
3.1 Billed Flows for Each Customer Class 12
3.2 Single Family Residential Wastewater Strength Data 13
3.3 Non-Residential Wastewater Strength Data 15
3.4 Basis of Capital Cost Allocation Factors 15
3.5 Miscellaneous Projects in Capital Improvement Plan 16
3.6 Supporting Documentation for Cost Allocations to Rate Components 17
3.7 Wastewater Rate Structure Observations 17

4 Conclusions **19**

List of Tables

Table 1: Comparison of Billed Flows by Class in FY 2026 Updated, FY 2026 Draft and FY 2022 COSS Reports 13
Table 2: Summary of Key Findings, Observations and Recommendations 19

List of Figures

Figure 1: Overview of Proposition 218 Requirements for Property Related Fees 5
Figure 2: Key Elements of Financial Plan and Revenue Requirements 7
Figure 3: Historical and Projected Water Sales, FY 2015 to FY 2029 9
Figure 4: Historical and Projected Operations & Maintenance Expenses 11
Figure 5: Single Family Residential Wastewater Strength Data Box & Whisker Plots 14

Executive Summary

Background

This review was conducted to support the Office of the Independent Budget Analyst (IBA) and provide an objective and independent assessment of the wastewater utility financial plan and rate proposals for FY 2026 – FY 2029 submitted by the Public Utility Department (PUD). The review included analysis of historical and forecasted financial information, PUD's rate model and proposed Cost of Service Study (COSS), as well as supplemental data used to develop key inputs and assumptions. The goal of this review is to assist the City Council in understanding and evaluating PUD's proposed update to wastewater rates and identifying alternative approaches for consideration.

Recommendations & Findings

The COSS developed by PUD and their consultant was generally conducted thoughtfully and consistent with industry practices. Additionally, the information shared by PUD and their consultant enabled a review of data, assumptions, methods, and models used in the COSS. We appreciate their cooperation and conduct during the completion of this review.

In our review, we identified a number of findings and recommendations for consideration by Council. The key findings and recommendations of the review are outlined below, organized by phase of the COSS.

Financial Plan (Section 2):

1. Historical billed wastewater flows have displayed some volatility as the City has experienced a series of dry and wet years. The forecast of billed flows appears reasonable, maintaining a balance between conservatism and realistic expectations for the future.
2. Budgets and forecasts for operations and maintenance (O&M) track with historical trends in budget and actual expenditures after adjusting for recent one-time step increases in energy and utilities costs and trends in inflation.

Cost of Service & Rate Design (Section 3):

1. Billed flows by customer class have changed considerably between the FY 2022 COSS, draft FY 2026 COSS, and the updated FY 2026 COSS. This should be clearly explained in the report, and consideration should be given to revising the test year billed units to rely on a multi-year average to mitigate swings in billed flows and resulting cost allocations.
2. Whereas the prior wastewater COSS reviewed in FY 2021 showed discrepancies in the data used to estimate COD strength for single family residential (SFR) customers, this study re-evaluated basins thought to be representative of the SFR customer class to update chemical oxygen demand (COD) and total suspended solids (TSS) strength estimates. The data used in this study demonstrate greater consistency and appear to validate the average COD and TSS concentrations used in estimating SFR loadings and in determining strength-related cost allocations and rates. This analysis and the basis for the SFR loading assumptions should be described in detail in the COSS report.
3. Consistent with the review of the FY 2021 wastewater COSS review, one area for improvement would be an update to wastewater strength assumptions for the non-SFR classes. While the current approach of using SIC codes to identify specific types of businesses and assigning typical COD, TSS and sewage return flow factors to each customer based on SIC code is common, these factors could be updated through local sampling studies, identification of potential updates to more current and well-documented industry guidelines, or some combination thereof.
4. The wastewater COSS approach to calculating capital cost allocation factors is inconsistent between the model and the report, as the report states both the fixed assets and the Capital Improvement Plan (CIP) were combined to calculate allocation factors while the model shows only the fixed assets were used as the basis. This asset-only approach is also inconsistent with the water COSS. The report and model should be updated to be consistent in methodology. Additionally, either a clear justification for changing approaches between the water and wastewater COSS studies should be added, or the wastewater COSS should be amended to be consistent with the water COSS. If the wastewater COSS approach is updated to align with the water COSS, the asset valuation approach should be modified from *replacement cost* to *replacement cost less depreciation* to avoid potential double-counting of asset values that may be included in both the asset register and the CIP.
5. It appears that some projects in the CIP currently categorized as "Miscellaneous Projects" could be directly allocated to specific system functions to reduce the costs that are indirectly allocated, and more closely align capital costs with system functions.
6. Supporting data and analyses should be provided to justify the adjustment in the allocation of sewer pipeline costs from a 100% allocation to fixed charges in prior studies to a 67% and 33% split allocation to fixed and volumetric charges, respectively.
7. Applying key points from the Coziahr v Otay Water District decision to wastewater rates, PUD should consider enhancing the underlying data embedded in the current wastewater rate structure to strengthen the assumptions used in determining customer bills. For example, verifying or updating the 95% return flow factor, winter average water usage, and the 20 hundred cubic feet (HCF) cap used for billing SFR customers would enhance the basis for the SFR rate structure. Similar improvements could be applied to MFR and Commercial/Industrial customer classes through sampling studies and data analyses. Additionally, wastewater strength characteristics for each customer class could be updated with local data instead of national estimates.

1 Introduction & Background

The mission of the Office of the IBA is to provide clear, objective and unbiased analysis and advice to the City Council (Council) and the public regarding all legislative items bearing financial and policy impacts to the City. Following the approval of the water rates proposed in FY 2016, the Utility Consumers' Action Network (UCAN) recommended to the Council at the Environment Committee meeting of October 12, 2016, that the IBA be authorized to hire an outside consultant to evaluate future rate proposals. The IBA issued a report on February 9, 2017, supporting the recommendation that the IBA be authorized to engage a consultant on an as-needed basis to review the next cost of service study. This culminated in City Council adopting San Diego Resolution R-311180 (June 13, 2017), titled *A resolution of the Council of the City of San Diego directing the Independent Budget Analyst to include as a budget priority, the hiring of a consultant to advise the City Council and the Independent Rates Oversight Committee on water and wastewater cost of service studies and rate design*, directing the Independent Budget Analyst to include as a budget priority, the hiring of a consultant to advise the City Council and the Independent Rates Oversight Committee on water and wastewater cost of service studies and rate design, directing the IBA "to include the engagement of an as-needed consultant to review the water and wastewater cost of service studies and rate designs, under the direction of the IBA and funded by the Water and Sewer Funds… for the fiscal year when the City anticipates bringing forward the next cost of service studies."

In that capacity, the IBA sought the support of an independent consultant to evaluate the cost-of-service study (COSS), *Wastewater Financial Plan, Cost of Service, and Rate Study*, prepared by the City's Public Utilities Department (PUD) and its rate consultant. Specifically, the IBA required independent technical assistance in reviewing any proposed changes to wastewater rates with a focus on accuracy, clarity, and fiscal responsibility to ensure the lowest possible rates for customers while maintaining safe and reliable service. This Independent Review of Wastewater Financial Plan, Cost of Service and Rate Study Report (Study) summarizes the findings of the independent review of the wastewater rates proposal as reflected in the COSS Report dated December 4, 2024, prepared by Raftelis Financial Consultants, Inc. (Raftelis) on behalf of the PUD.

1.1 Rate Setting Process

The process of determining water and wastewater rates generally follows three distinct steps:

Revenue Requirements Analysis (RRA) – Determine the level of annual revenue required to satisfy projected annual operating expenses, debt service (including coverage), and capital costs while maintaining adequate reserves.

Cost of Service Analysis (COSA) – Using test year revenue requirements from the financial planning phase, a detailed analysis is completed following industry standard cost allocation principles to determine the proper distribution of revenue requirements to functions and cost categories. The ultimate purpose of a COSA is to allocate the total costs associated with

providing wastewater service to each customer classification so that the revenue requirements may be proportionally collected through rates.

The COSA employed methods promulgated in Water Environment Federation's *Manual of Practice 27: Financing & Charges for Wastewater Systems (MOP 27)* for the sewer system along with general guidance from American Water Works Association's (AWWA) Manual, *Principles of Water Rates, Fees, and Charges, M1 (M1)* [1]. The COSA generally includes the following steps:

- Step 1: Functionalize costs to the appropriate system components
- Step 2: Allocate the costs of each function to specific service and usage parameters
- Step 3: Calculate unit costs
- Step 4: Distribute costs to customer classes based on service and usage characteristics
- Step 5: Credit any offsetting revenue from other fees and charges

Rate Design Analysis – Using the results of the RRA and COSA, rates are designed to recover the allocation of required rate revenue from each customer class or category. Properly designed rates should reflect City objectives to the greatest extent possible, while:

- Fairly and equitably recovering costs through rates;
- Conforming to accepted industry practice and legal requirements;
- Providing fiscal stability and recovery of fixed costs of the system; and
- Meeting the substantive requirements of Proposition 218 (described in Section 1.2).

1.2 Proposition 218 and Wastewater Rates

Proposition 218 is a State of California constitutional amendment passed in November 1996 that modified Articles XIII C and Articles XIII D of the state constitution. While Article XIII C pertains specifically to general and special taxes, Article XIII D created a new category of fees called "property related fees" and established substantive and procedural requirements for the development of new or increased property related fees. Under Proposition 218, wastewater rates are considered a property related fee. As such, the substantive requirements of Proposition 218 require a COSS to demonstrate that revenues from fees charged to customers do not exceed the cost of serving rate payers, and that the fee charged to a parcel or person does not exceed the proportional cost of service attributable to the parcel. One critical aspect of Proposition 218 is that it prohibits PUD from using funds collected for one utility to cover costs associated with a different utility or City department. Funds collected from wastewater rates cannot be used to pay for projects that are unrelated to the provision of wastewater service. Additionally, Proposition 218 strengthens the proportionality requirements for cost-of-service based rates beyond generalized industry-

[1] Although the AWWA M1 is primarily focused on water and recycled water rate setting, many concepts and principles are transferrable to and often applied in wastewater rate setting as well.

accepted practices. For example, the AWWA M1 states that "a work-backwards-from-total-cost methodology in setting rates" is a reasonable approach, but California courts have determined that simple adherence to industry standards does not establish compliance with Proposition 218. The standard of "reasonableness" allowable elsewhere in the country, and under Article XIII A for, say, regulatory fees, does not meet the more stringent standards for property related fees under Article XIII D[2]. Any differentiation in rates charged to different customer classes or charged at different tiers of usage (for water rates) must be supported by the unique cost to provide service to those customers or at that level of usage[3]. Furthermore, the courts have held that the burden of proof to demonstrate adherence to Proposition 218 is the sole responsibility of the agency and that the deferential standards usually applicable in challenges to governmental action do not apply in Proposition 218 cases. It is not enough to simply have substantial evidence, but rather that evidence must be able to withstand independent review by the courts[4]. As such, it is imperative that a COSS conducted in California maintain strict adherence to cost of service principles and clearly document all source data, inputs, assumptions, and supporting analyses relied upon to arrive at the resulting rate structure.

In 2024, the California Court of Appeals decision in the case of *Coziahr v Otay Water District*[5] further heightened the level of scrutiny and detail required in developing water rates. This case is discussed in greater detail in the accompanying report on the review of water rates, *Independent Review of Water Financial Plan, Cost of Service, and Rate Study Report,* but a few key overarching points are worth reiterating here as they may become greater areas of focus for wastewater rates in the future.

- Inputs used in the determination of cost allocations and rates must be informed by data and cannot rely on high-level estimates or typical values. In the case itself, this focused on peaking factors for water rates, but similar scrutiny may be applied to estimates and assumptions for inputs such as chemical oxygen demand (COD) and total suspended solids (TSS) strengths for each customer class, or estimates of inflow and infiltration (I&I) flows and the basis for allocating I&I related costs to customers. Reliance on industry standard estimates or assumed values for these inputs carries increased risk, as it could become a target of future wastewater rate challenges.

- Use of different rate structures for different customer classes must be supported by data and justified on a cost basis. Again, this focused on tiered water rates for single family residential (SFR) customers and uniform volumetric water rates for non-SFR customers in the water rate challenge; however, this could apply to elements of the wastewater rate structure such as the use of winter average water usage as the basis for SFR wastewater customers' volumetric charges, and total monthly water usage for non-SFR wastewater customers' volumetric charges.

While Coziahr v Otay Water District case could be further elevated to the State Supreme Court and these updates to the level of rigor and specificity in allocating costs and calculating rates could be overturned,

[2] Capistrano Taxpayers Assn., Inc v. City of San Juan Capistrano (2015) 235 Cal. App 4th 1493
[3] City of Palmdale v. Palmdale Water Dist (2011) 198 Cal.App.4th 926, 933
[4] Silicon Valley Taxpayers' Assn., Inc. v. Santa Clara County Open 25 Space Authority (2008) 44 Cal. 4th 431, 448.
[5] Mark Coziahr v. Otay Water District (2024) 323 Cal.Rptr.3d 441

this most recent decision is instructive as to the level of care and substantiation to be considered in the use of data and assumptions in determining not only water rates, but to wastewater rates as well.

The procedural requirements of Proposition 218 vary based on the type of fee, assessment or tax being implemented or increased. It is worth noting that wastewater rates are granted the same exemption provided to water and solid waste property related fees, which exempts these rates from the requirement to obtain a 2/3 majority vote, or a simple majority vote among affected property owners. This exemption allows water, wastewater, and solid waste rates to be adopted or increased by the City Council after the 45-day public comment period as long as a majority of rate payers do not issue formal written protest votes against the rate implementation or change (a process known as a "majority protest" vote). Figure 1 outlines the process for changing or increasing wastewater property related fees.

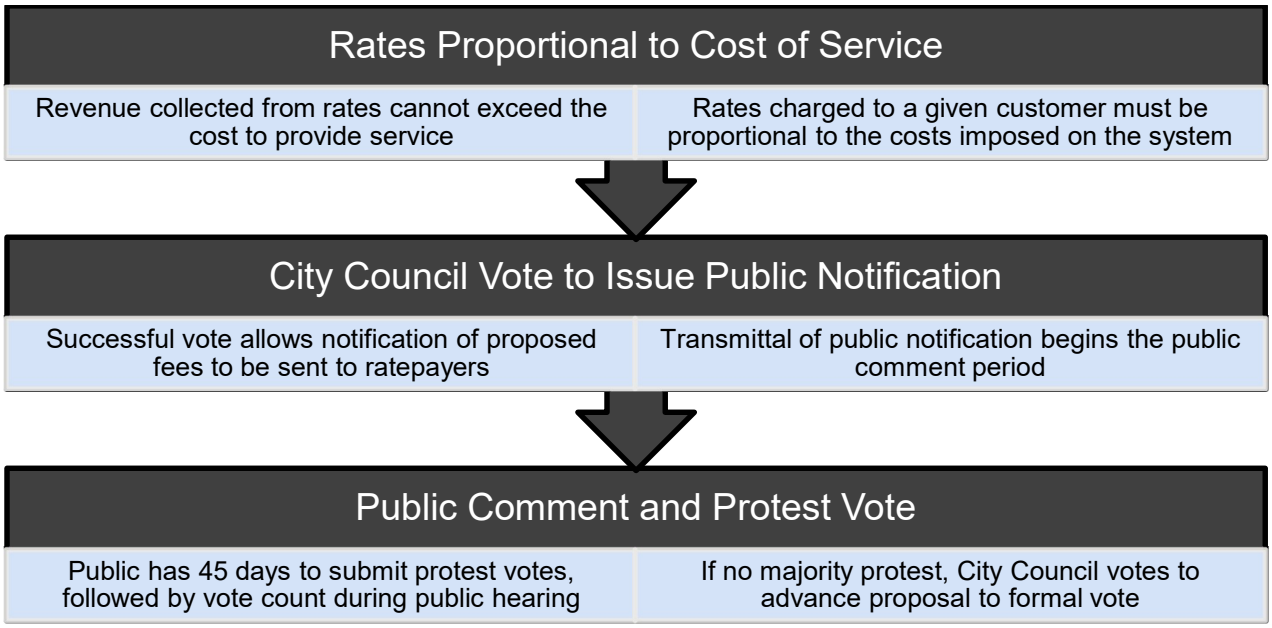


Figure 1: Overview of Proposition 218 Requirements for Property Related Fees

Additionally, Assembly Bill (AB) 2257 was passed in 2024 and took effect in 2025, and adds an optional step to the process, providing an opportunity for administrative remedies to objections to proposed rate structures. AB 2257 requires agencies to publish the basis of the updated rates on their website with instructions on how to submit a written objection within at least 45 days following the publication of the report. The objection must be submitted before the deadline and must state the basis for alleging the rates do not comply with Proposition 218. The agency must then provide written responses to each objection prior to the public hearing where protests may be voiced, and protest votes are tallied. These objections and the agency's response must be heard and considered during the public hearing and determine whether to proceed as planned, reduce the rates, or further review the issue before voting to adopt the proposed rates. If the rates are approved and adopted, only a person who submitted a timely written objection may file litigation, and the evidence to be considered during litigation would be limited to a record of the proceedings for the rate-setting public hearing.

The City and PUD have completed the first phase of this process with the release of the COSS. The remaining required steps involving votes by City Council and the public protest vote (as well as any optional steps to comply with AB 2257, if appropriate) must be completed before adoption of any proposed rate changes.

1.3 Objective, Scope, and Methodology

The objective of this Study was to support the IBA and provide an independent and objective assessment of the financial plan and rate proposals for FY 2026 through FY 2029 brought forth by PUD for the wastewater utility. The scope of this review included historical and forecasted financial information, PUD's rate model and draft COSS report, and supplemental data and information used to support key inputs and assumptions relied upon in the COSS. The ultimate goal of the independent review process is to support the City Council's evaluation of rate proposals and decision-making process.

The PUD is responsible for managing and operating the City's utility systems, including developing sustainable rates and funding approaches to meet operating and infrastructure investment needs. The IBA is responsible for reviewing and analyzing PUD's proposals. The Council must make rate decisions. Our role is to provide independent technical assistance, including:

- independent review of the cost of service and rate proposals for accuracy and compliance with industry practices and substantive requirements of Proposition 218,
- perspective from rate and user charge strategies used in other communities,
- analysis in response to IBA or Council questions or comments,
- input and alternative solutions as might be beneficial from other rate proceeding processes, and
- assistance in communicating the implications of any proposed changes in rates.

In summary, our role is to assist the IBA to independently assess the accuracy, clarity, and fiscal responsibility and appropriateness of any rate proposals, and offer recommendations to City Council for their consideration. This review follows the steps outlined in Section 1.1.

2 Financial Plan and Revenue Requirements

The first step in reviewing the City's COSS was to evaluate the long-term financial plan with a specific focus on the four-year rate-setting period of FY 2026 through FY 2029. This financial plan forms the revenue requirements used to calculate wastewater rates. This review included the following tasks:

1. Test model inputs and calculations for accuracy and completeness,
2. Review inputs and assumptions for reasonableness, and
3. Identify and evaluate key financial policies, targets, and decisions within the four-year forecast that affect the timing and amount of annual revenue requirements.

Any wastewater utility financial plan includes a common set of data, inputs, assumptions, and policy decisions. Figure 2 outlines the primary financial plan elements evaluated as part of this review with key considerations for each area of focus.

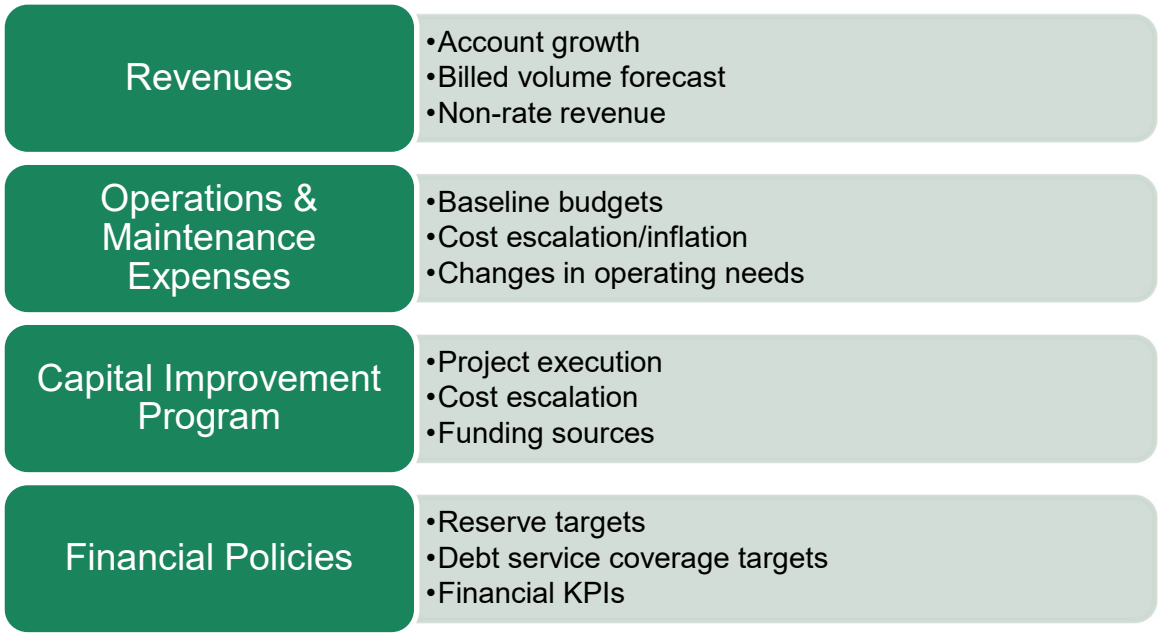


Figure 2: Key Elements of Financial Plan and Revenue Requirements

It should be noted that the reviews conducted for the prior wastewater[6,7] and water[8,9] rate proposals included recommendations regarding financial planning strategies, including adjusting Capacity Charge revenues based on the changes proposed during the last study, updating Industrial Waste Control Program (IWCP) revenues to achieve program cost recovery, and considering alternative capital funding strategies and increased use of reserves to mitigate rate impacts. These recommendations have largely been incorporated into this COSS. As a result, the review of the financial plan and revenue requirements focused on new or updated information, and verifying key inputs and assumptions impacting the forecast.

2.1 Wastewater Accounts and Billed Flows Forecast

Growth in customer accounts and changes in billed volumes of flow are important drivers of future revenues. These revenue drivers are also consistently areas of uncertainty in any financial plan. Various factors can impact future growth and volumes, including, but not limited to, local, state and national economic forces; development; large scale drought; near-term weather variability; and conservation efforts. For this reason, multi-year financial plans often maintain a level of conservatism in the forecasting of account growth and billed volumes, recognizing the potential exposure to revenue volatility.

The City's wastewater billed volume serves as the basis for volumetric rate revenue forecasts. At the time of this review, the FY 2025 wastewater billed flows estimate was estimated with over half of the fiscal year remaining. To the extent feasible, FY 2025 wastewater billed volume estimates should be updated based on year-to-date actual flows. This is especially important for FY 2025, knowing that the year has been distinctly drier than the years immediately prior to the test year (billed wastewater volume is directly linked to water sales). To the extent the higher volume is sustained, higher billed volume in the first year of the forecast could provide some relief from future rate pressures.

The current five-year forecast of revenue is based on two key assumptions applied to all rate classes:

- Account growth of 0.25% per year
- No change in per-account billed volume during the forecast period

To better understand the City's account and volume forecast, two sources of information were used to provide a frame of reference for the rate revenue forecast – the historical account growth and per-account billed volumes for the last five years, and the City's 2020 Draft Urban Water Management Plan (UWMP)[10].

A review of historical billed wastewater flows shows volatility in the period from FY 2015 to FY 2024. A combination of very dry and very wet years led to peaks and valleys in sales over the last ten years; however, wastewater billed flows exhibit a lower degree of volatility than water sales as the exclusion of

[6] City of San Diego, *Wastewater Financial Plan, Cost of Service, and Rate Study: Final Report.* March 23, 2021
[7] City of San Diego, Office of the Independent Budget Analyst. *Independent Review of Wastewater Financial Plan, Cost of Service, and Rate Study Report*. May 17, 2021
[8] City of San Diego. *Water Financial Plan, Cost of Service, and Rate Study: Final Report*. November 10, 2022
[9] City of San Diego, Office of the Independent Budget Analyst. *Independent Review of Water Financial Plan, Cost of Service, and Rate Study Report*. March 23, 2023
[10] *Draft 2020 Urban Water Management Plan*. City of San Diego, Public Utilities. February 2021

irrigation meters and the use of winter average billing for SFR customers in the wastewater billing system suppresses volatility driven by outdoor water usage during the summer months[11]. Figure 3 displays the historical actual billed wastewater flows from retail customers in the solid blue line, the linear trend in historical billed flows over that same period in the dashed green line, and the projected billed flows from the PUD rate model in the blue dashed line. This figure illustrates a degree of volatility as flows have moved above and below the trend line between wet and dry years, and years of drought that may have necessitated water usage reductions.

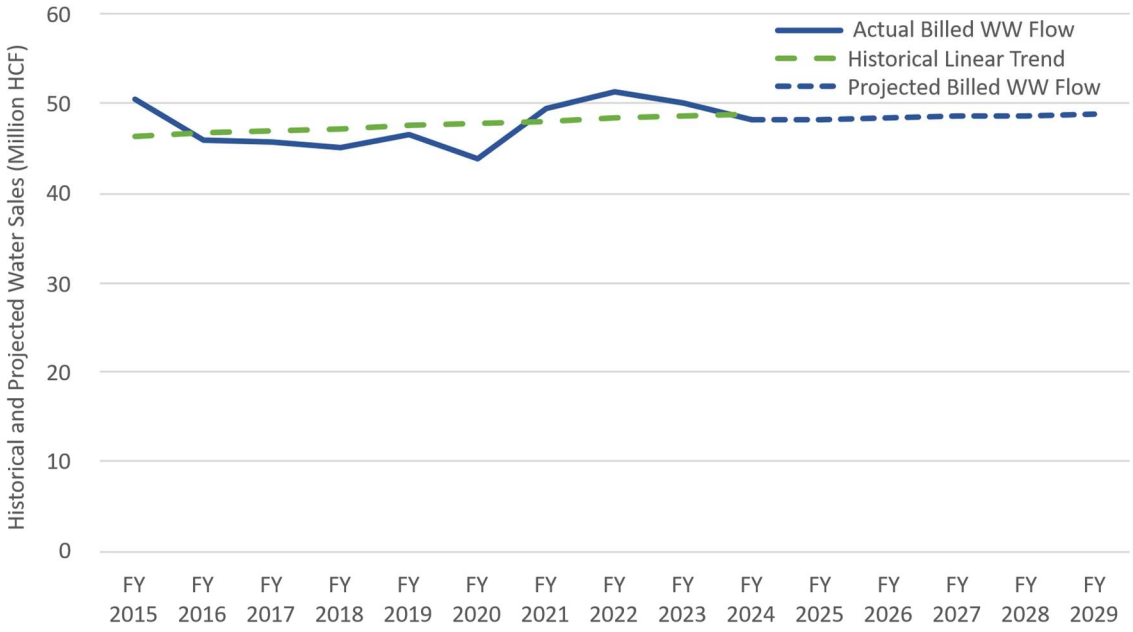


Figure 3: Historical and Projected Water Sales, FY 2015 to FY 2029

The linear trend line for the historical data shows an overall positive trend of approximately a 0.6% per year increase in billed wastewater flows from retail customers. While the overall change in billed volume from FY 2015 to FY 2025 is negative (dropping from 50.5 million HCF to 48.2 million HCF), this fit line is based on a linear regression of the historical data, and shows an overall positive trend through all historical data points, accounting for the variability between years of high and low billed flows.

By contrast, the City's UWMP forecasts annual account growth of 0.40% per year from 2025 to 2030 and annual increases in retail water sales of 0.9% during the period 2025 to 2030. It should be understood that "conservatism" for purposes of infrastructure planning involves forecasting higher growth rates to ensure capacity is available to serve a growing population. In contrast, for financial planning purposes, conservatism means forecasting lower account growth and volume trends to ensure adequate revenue.

[11] See accompanying report for the water utility, *Independent Review of Water Financial Plan, Cost of Service, and Rate Study Report*, dated July 11, 2025

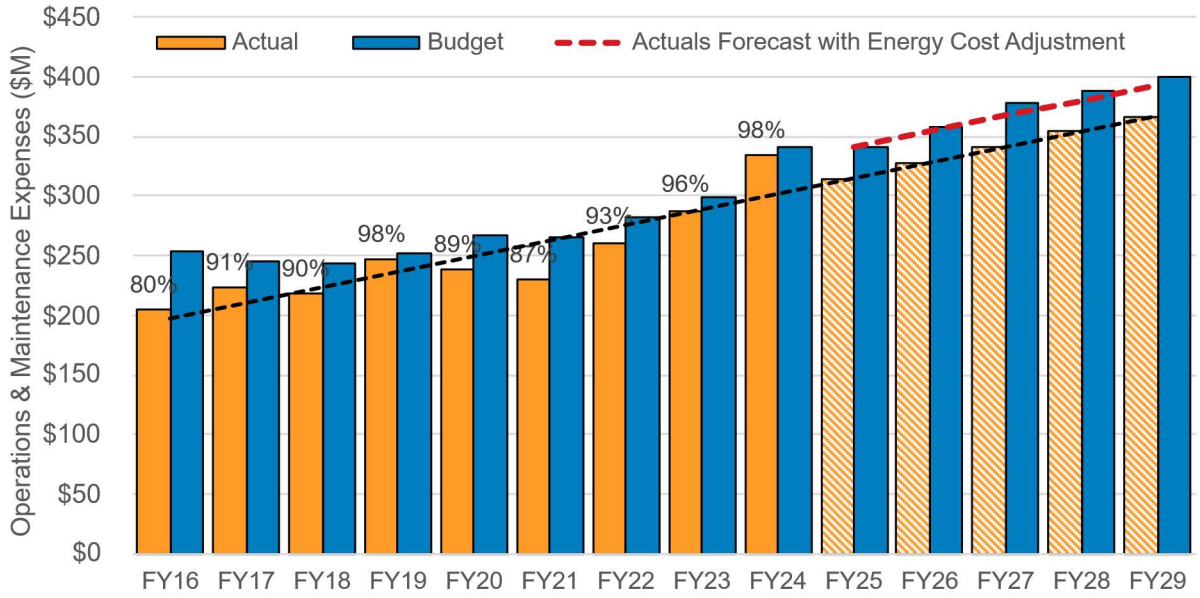
Given this variability in billed flows and the upward trend in billed volumes, the current forecast appears to be a reasonable balance of conservatism and realistic expectations. However, this is a potential area of volatility should economic, climate, or other factors result in slowing growth or rapid changes in customer billed volumes. This volatility will be particularly important to monitor over the coming fiscal years to determine if near-term adjustments to these assumptions will be necessary.

2.2 Budget vs Actual Operations and Maintenance Expenses

The operations and maintenance (O&M) expenditures projected in the financial forecast are based upon escalation of the FY 2025 budget, with the addition of specific budget requests in subsequent years to address specific operating needs. Because the FY 2025 budget serves as the primary basis for the subsequent years' O&M forecasts, it is important to validate this starting point.

This review used information provided during the prior independent review of PUD's COSS, and supplemented with budget and actual expense information from PUD's budget reports from FY 2023 to FY 2026 to analyze the O&M forecast in the financial plan of the current COSS. This information allowed for analysis of the historical relationship between the budget and actual expenditures to verify the use of PUD's budget and escalation factors as the basis for O&M expenditures, and to determine whether adjustments were warranted. Figure 4 presents a summary of the historical budget and actual O&M expenditures represented by the blue and orange columns, respectively, with the addition of the FY 2025 budget and future year forecasts. Additionally, the actual expenditures were extrapolated from the trend in historical actuals, as represented by the black line and hatched orange columns.

The large increase in O&M budget and actuals in FY 2024 was driven by a one-time step increase within Energy & Utilities for the Metro System of approximately $26.5 million. With an adjustment to the forecast of actual expenditures to reflect the increased level of this expense, the linear extrapolation of actual O&M expenses is shown with the red dotted line in Figure 4.



** FY2025-FY2029 Actuals projected using linear forecast of FY2016-FY2024 Actuals*

Figure 4: Historical and Projected Operations & Maintenance Expenses

Based on the analysis presented in Figure 4, historical expenditures from FY 2016 to FY 2024 indicated a general trend of actual expenditures averaging approximately 91% of budgets during that period; however, the most recent three years have been very close to 100%. After adjusting for the increase in Energy & Utilities costs in FY 2024, the forward-looking O&M forecast appears to be an appropriate O&M forecast that maintains a reasonable level of conservatism, accounts for recent increases in O&M, and is consistent with the long-term and near-term trends in O&M expenses.

3 Cost of Service Analysis and Rate Design

As described in Section 1.1, the cost-of-service and rate design phases of the COSS are designed to develop rates that are intended to meet the substantive requirements of Proposition 218. For wastewater systems, a cost of service analysis ultimately allocates test year revenue requirements to each customer class based on their respective use, or costs imposed on the system, as determined by their units of service and demand parameters. This process is completed through the following steps:

1. **Allocate revenue requirements to unit processes and charge parameters.** Following industry cost allocation guidelines, revenue requirements are functionalized to specific components of the wastewater system. Each of these system functions is then allocated to specific parameters of billed volume, accounts, pollutant loading, and inflow and infiltration (I&I) to determine unit costs for each. Using these allocations, expenses are finally distributed to each customer class based on their respective proportional share of each parameter and the calculated unit costs.

2. **Determine rates for service.** Finally, rates are calculated based on the distribution of the cost of service to each customer class and their respective units of service.

A clearly documented COSS that adheres to these steps is intended to produce rates that meet the substantive requirements of Proposition 218 to recover total revenue that does not exceed the total cost to provide service, and to recover revenue from each parcel proportionally to their contribution to the costs to serve. This review is intended to provide an independent and objective perspective of the COSS completed to develop PUD's proposed wastewater rates, including a thorough review of inputs, assumptions, analyses, allocations, methods, and supporting rationale.

3.1 Billed Flows for Each Customer Class

The final FY 2026 wastewater COSS reported updated billed flows for each customer class. These flows were based on projections of FY 2026 billed flows for each class. It was noted that in the revisions from the draft COSS released in December 2024 to the updated reports provided in June 2025, there were considerable changes in the billed flows by class. Table 1 presents the billed flows from the current FY 2026 COSS, the draft FY 2026 COSS released in December 2024, and the FY 2022 COSS released in 2021. These three datasets show considerable variability in the flows by class, including in the comparison of the two versions of the most recent study. This variability is worth explaining in the COSS report to provide the reader with an understanding of the underlying factors driving this change.

Furthermore, given that these billed flows are used in the determination of rates for a multi-year rate schedule, it is worth considering adjusting the test year flow estimates to reflect multi-year averages or trends in billed flows. Relying on averages or trends rather than individual years would help mitigate the potential for basing multi-year rate schedules on data from years that may not be indicative of "typical" consumption patterns and could reduce the likelihood of producing swings in rates by customer class from one rate study to the next.

In addition to the billed flows by customer class, it is notable that the assumptions regarding infiltration and inflow (I&I) flows have been modified since the FY 2022 COSS. Both the draft and updated FY 2026 COSS reports assumed I&I is equivalent to 10% of billed flows, whereas the FY 2022 COSS assumed 4.4% I&I flow. This change may be a reasonable and appropriate adjustment to reflect the most current data, but the report lacks supporting analysis, evidence, or explanation of the basis for the updated assumption. This support should be provided to show the data-driven rationale for estimating I&I flows in the system.

Table 1: Comparison of Billed Flows by Class in FY 2026 Updated, FY 2026 Draft and FY 2022 COSS Reports

Customer Class	Final FY 2026 COSS Test-Year Billed Flow (HCF)	Draft FY 2026 COSS Test-Year Billed Flow (HCF)	FY 2022 COSS Test-Year Billed Flow (HCF)
Single Family Residential	17,029,681	15,675,585	17,778,264
Multi-Family Residential	15,739,823	14,912,490	14,006,986
Commercial / Industrial	18,744,380	17,844,497	14,161,621
Total Retail	**51,513,884**	**48,432,572**	**45,946,871**
Other (Navy, Prisons)	1,384,248	1,384,271	1,668,513
Total Other (Navy, Prisons)	**1,384,248**	**1,384,271**	**1,668,513**
Trucked Waste	77,551	77,552	88,808
Imported Flows (Groundwater Discharge)	133,681	133,681	133,681
Total Trucked Waste	**211,232**	**211,233**	**222,489**
Stormwater Transportation	380,015	380,022	363,828
Total Stormwater Transportation	**380,015**	**380,022**	**363,828**
Total Billed Flow	**53,489,379**	**50,408,099**	**48,201,701**
Assumed I&I %	*10.00%*	*10.00%*	*4.40%*
Estimated I/I	5,348,938	5,040,810	2,120,875
Total Estimated I/I	**5,348,938**	**5,040,810**	**2,120,875**
Estimated Contributed Flow	**58,838,317**	**55,448,908**	**50,322,576**

3.2 Single Family Residential Wastewater Strength Data

During the review of PUD's FY 2022 COSS, source data informing the estimates of COD and TSS strength in the SFR customer class wastewater was evaluated and discussed with PUD and their

consultant. The observation was made that one of the three sampling locations used to calculate the average strength characteristics appeared to yield an abnormally high COD concentration relative to the other locations. While our analysis showed that the SD18 location appeared to be abnormally high and skewing the results, PUD and their consultant determined that the SD18 basin was a representative basin for the SFR class and retained the strength data from SD18 in their analysis.

In reviewing the strength data for this current COSS, SD18 was again included as one of two basins used to calculate the average COD and TSS strengths for the SFR class. In this study, however, the other basins used during the prior COSS were replaced by a new basin, SD1E, which PUD and their consultant deemed to be more representative of the SFR customer class. The data for these two basins were again analyzed to verify their veracity in estimating SFR wastewater strength. Figure 5 shows box and whisker plots representing the distribution and summary statistics for the COD and TSS data from both basins. The 'X' markers and horizontal lines within each box represent the mean and median values for each dataset, respectively. The bottom and top edges of each box represent the lower and upper quartile for each dataset (i.e., the 25th and 75th percentile), and the "whiskers", or the lines extending from the boxes, represent the minimum and maximum values of each dataset, excluding outliers.

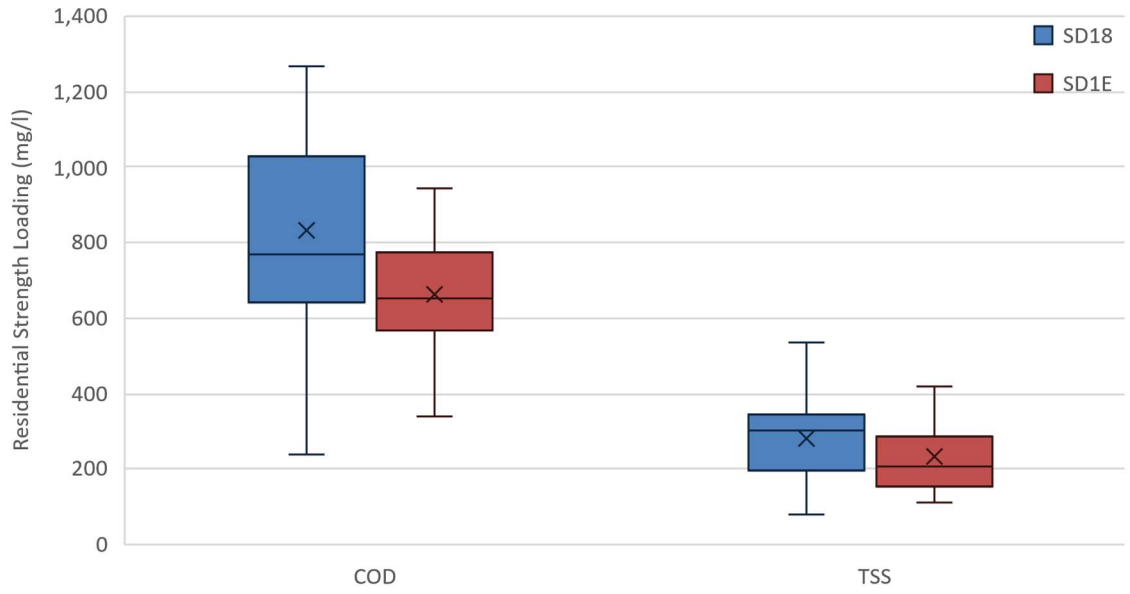


Figure 5: Single Family Residential Wastewater Strength Data Box & Whisker Plots

In contrast to the prior study, where there was little to no overlap between the SD18 COD strength data distribution and the other basins, these two basins show different but generally consistent characteristics for both COD and TSS. Given the available data and contextual discussions with PUD and its consultant, this appears to validate the calculated average COD and TSS concentrations used in estimating SFR loadings and in determining strength-related cost allocations and rates.

While this review of the sampling data indicates that the SFR loading estimates are reflective of the SFR customer class's typical concentrations, it is worth noting that the COSS report does not explain the data sources or the analytical approach to estimating the SFR loading concentrations. The data relied upon for the analysis above was provided as supplemental information as part of this independent review. Recognizing the importance of basing cost allocations and rate structure inputs on data-driven support, it is important that the COSS report explain the approach taken to determining these inputs into the COSS model, beyond stating that the concentrations were "provided by Public Utilities Department staff."

3.3 Non-Residential Wastewater Strength Data

The review of the most recent prior PUD wastewater COSS noted that wastewater strength for the Commercial/Industrial customer class was based on each Commercial/Industrial customer's Standardized Industrial Classification (SIC) code and typical return flow and strength assumptions for businesses in each SIC category. These assumptions are applied to each customer's water usage, and the calculated flow, COD and TSS loadings are each summed to estimate the total sewer flow, and COD and TSS loading for the Commercial/Industrial customer class. This data set was identified during that review as a potential area for improvement that should be investigated in a future COSS. This approach and the underlying assumptions have not been updated as part of the updated study.

That being said, this approach is not uncommon as wastewater flow and the actual pollutant loading from every individual customer cannot feasibly be measured. However, this approach to estimating the total flow and COD and TSS loading from the non-residential customer class should be clearly documented in the COSS report. Based upon discussions with PUD staff, it was determined that these factors were last updated in 2004 and used to develop rates during the wastewater COSS conducted in 2006. Moreover, the current COSS consultant was not aware of any non-residential sampling data compiled by the City that could validate these factors. Recognizing the general trend in water conservation and myriad changes to business operations in various industries, in addition to the fact that these factors have been recently updated for all other customer classes, these factors should be re-evaluated. We recommend that PUD consider performing local sampling studies or at least evaluate the potential to use more current and well-documented industry guidelines.

3.4 Basis of Capital Cost Allocation Factors

The COSS Report indicated that the rate model used the City's fixed assets and the multi-year Capital Improvement Plan (CIP) as the basis for calculating capital cost allocation factors. The individual assets from the City's asset register and the projects included in the City's five-year CIP were stated to have been functionalized to calculate a blended functional basis for the allocation of capital costs that represented historical and future investment in the system.

Upon further review of the wastewater rate model, it was evident that the CIP was not factored into the calculation of allocation factors used to allocate capital costs to system functions. This approach was inconsistent with the language in the wastewater COSS report and differed from the approach taken in

the water COSS. While there may be a justification or a rational basis for calculating capital cost allocation factors based solely on the functionalization of the City's fixed wastewater assets, the approach described in the COSS report should be consistent with the model and the rationale for taking either an asset-only or a combined asset plus CIP approach should be provided. Furthermore, without clear reasoning for taking different approaches in the wastewater and water COSS methodologies, it is recommended that the wastewater COSS model and report be updated to be consistent with the water COSS approach, using both the fixed assets and the CIP of the system.

If PUD decides to update the wastewater COSS modeling approach to combine the fixed assets and the CIP to calculate capital cost allocation factors, modifications to the approach taken to calculate the value of the fixed assets would also be recommended. During the prior COSS, the functionalization of asset values was done using the replacement cost of those assets, calculated by escalating the original asset value to present day dollars using the Engineering News Record Construction Cost Index (ENR CCI); however, in the current COSS, the asset valuation approach was not clearly stated. Based on the review of the model, it appears the replacement cost is still the chosen approach, but this needs to be stated in the report. With the understanding that the model did in fact rely on the replacement cost as the basis for asset valuations, this can be one valid approach to valuing assets for purposes of rate setting, as are methods of using original cost, original cost less depreciation, and replacement cost less depreciation; however, when using undepreciated asset values, especially in combination with the CIP (if the model were to be revised to align with the water COSS approach), there is a potential for effectively "double counting" the value of the same assets. This double-counting occurs because a portion of the capital investment is associated with renewal and replacement, representing investments in the system to repair and replace depreciated assets. For example, if a segment of wastewater collection pipe is old and nearly or fully depreciated, replacement of that pipe may be a component of the five-year CIP. If the depreciation of that pipe is not accounted for, that pipe segment's full original value is escalated to present day dollars, and the cost of replacing that same pipe is also included in the CIP. Therefore, replacement cost less depreciation may be a better valuation approach in determining functional allocations of capital costs, unless there is a documented process that avoids the double-counting of asset values.

3.5 Miscellaneous Projects in Capital Improvement Plan

The City's CIP includes projects that can be functionalized into the various functions of the wastewater utility. As described previously, the distribution of CIP projects into functional categories serves as one part of the basis for allocating capital costs. The majority of these projects could be directly allocated to a specific system function, such as pipelines, pump stations, sewer treatment plants, etc. The remaining projects, however, may not fit neatly into one of these specific functions and are grouped into a "Miscellaneous Projects" functional category. These could be projects that are administrative in nature or that benefit the entire wastewater system (e.g., new or improved office buildings, information technology, etc.). The review of the functional categorization of the individual projects in the City's CIP revealed several projects that could potentially fit within one of the directly allocated functional categories. For example, Advanced Metering Infrastructure projects could be directly allocated to the function of Customers as the technology used to measure water usage is necessary in determining wastewater bills.

The Alvarado Lab Improvement project could be directly allocated to the Sewer Treatment Plant function. Any changes to the functional categorization of projects should be vetted by City staff with direct knowledge of the projects to ensure project names are interpreted correctly.

3.6 Supporting Documentation for Cost Allocations to Rate Components

One component of the allocations of functionalized costs to components of the rate structure was modified from the FY 2022 COSS. The current FY 2026 COSS allocates 67% of sewer pipeline costs to fixed charges and 33% to volumetric charges, which is a departure from the previous study which allocated 100% of sewer pipeline costs to the fixed charge. The COSS states that costs associated with sewer pipelines are fixed costs, which could justify the 100% allocation of these costs to the fixed charge. There may be a rational basis for the revised approach; however, the COSS report does not provide any explanation or supporting data to justify why the allocations changed from the prior study. An explanation should be provided not only to explain why these costs should be split between fixed and volumetric rates, but also why the specific split between fixed and volumetric rates should be 67% and 33%, respectively. The current lack of documentation of the rationale presents an area of risk within the current rate structure proposals, particularly in the current legal environment discussed in Section 1.2, where scrutiny on data, assumptions, and justifications for every component of the rate-setting process has been increased.

3.7 Wastewater Rate Structure Observations

The COSS showed that the proposed wastewater rate structure was generally consistent with the prior study and independent review. The approach, methodology, and structure allocate costs to the appropriate rate structure components to recover costs based on the relevant customer characteristics (e.g., flow, COD, TSS, etc.). With that said, there are areas for improvement that are worth consideration, particularly in applying the key points from the Coziahr v Otay Water District decision to wastewater rates. For example, the SFR customer class is currently billed based on each customer's winter average water usage and a 95% return flow factor to estimate indoor water usage that is returned to the sewer system (i.e., exclude irrigation water usage that does not return to the sewer system). Bills for the SFR customer class also include a billed flow cap of 20 HCF per month. While the report indicates the SFR cap will be re-evaluated following the release of an updated Water Research Foundation study on residential water usage, the rationale for the current cap is not explained and no data or analyses are provided to support the 20 HCF cap. Studies could be conducted to verify or update the November-April billing periods as the basis for calculating winter usage, the return flow factor of 95%, and the billed flow cap of 20 HFC. While winter average billing and a billed flow cap are exclusive to the SFR customer class, similar return flow factors are applied for MFR and Commercial / Industrial customers, and could similarly be updated through sampling studies and data analyses.

Additionally, strength characteristics for each customer class are based on a combination of data analyses for the SFR and MFR classes, and national estimates based on Standard Industrial

Classification (SIC) codes for different business types within the Commercial / Industrial class. These topics were discussed in the context of cost allocations in the cost-of-service phase of the COSS in Sections 3.2 and 3.3. These are also factors in determining each customer's bills, and as a result are elements embedded into the rate structure. Further studies and analyses could be conducted to update these estimates and bolster the foundation for determining typical wastewater strength characteristics for PUD's customer base.

4 Conclusions

The review of the COSS report and rate models developed by PUD and their consultant clearly indicated that the analyses and development of rates reflected therein were conducted in a thoughtful and prudent manner. Additionally, the responsiveness and transparency of PUD and consultant staff enabled a thorough review of data, assumptions, analyses, and models used in the COSS in an expedited manner.

Through the review process, a number of findings and recommendations were identified for consideration. The key findings and recommendations with the potential to impact the final rate recommendations are outlined in Table 2 below, organized by phase of the COSS:

Table 2: Summary of Key Findings, Observations and Recommendations

Key Findings & Conclusions
Financial Plan & Revenue Requirements
Historical billed wastewater flows have displayed some volatility as the City has experienced a series of dry and wet years. The forecast of billed wastewater flows appears to be reasonable and consistent with historical trends in conservation, maintaining a balance between conservatism and realistic expectations for the future.
Budgets and forecasts for O&M track with historical trends in budget and actual expenditures after adjusting to account for recent one-time step increases in energy and utilities costs and general trends in cost inflation.
Cost of Service & Rate Design
Significant changes were observed in the billed flows for each customer class in the evolving data from the FY 2022 COSS, draft FY 2026 COSS, and the updated FY 2026 COSS. This leads to changes in the costs allocated to each customer class with each version of analysis, and can result in swings in the rates charged to each customer class from one report to the next. At a minimum, an explanation of the trends and usage patterns, and discussion of the factors driving the changes in usage by class would help support the analysis and provide an understanding of the key factors. Additionally, these swings in usage patterns warrant serious consideration of using a multi-year average as the basis for test year billed flows to prevent temporary swings in usage from impacting multi-year rate proposals. Additionally, supporting data, analyses and/or evidence should be provided to explain the change in I&I flows form 4.4% of billed flows from the FY 2022 COSS to the 10% assumption used in the FY 2026 COSS.

Key Findings & Conclusions
Whereas the prior wastewater COSS reviewed in FY 2021 showed discrepancies in the data used to estimate COD strength for SFR customers, this study re-evaluated specific basins thought to be representative of the SFR customer class to update COD and TSS strength estimates. In contrast to the prior study, the available data used in this study demonstrates greater consistency and appears to validate the calculated average COD and TSS concentrations used in estimating SFR loadings, and in determining strength-related cost allocations and rates. While the data for the SFR customer class loading factors have been validated as part of this independent review, the report does not include an explanation of the data and analyses that helped to inform these loading estimates. These should be described in the report to provide evidence of the data-driven basis for strength loading estimates for the SFR customer class.
Consistent with the review of the FY 2021 wastewater COSS review, one area for improvement would be an update to wastewater strength assumptions for the non-SFR classes. While the current approach of using SIC codes to identify specific types of businesses and assigning typical COD, TSS and sewage return flow factors to each customer based on SIC code is a common approach, these COD, TSS and sewage return flow factors could be updated through local sampling studies, identification of potential updates to more current and well-documented industry guidelines, or some combination thereof.
The wastewater COSS states that the City's fixed assets and five-year CIP are combined and used to determine allocation factors for capital costs; however, upon review of the wastewater COSS model, it was determined that the CIP was not in fact used in tandem with the fixed assets to calculate capital cost allocation factors, leading the allocation factors to be based solely on the fixed assets. This is inconsistent with the water COSS approach. Unless a clear explanation for implementing different approaches in the two models is provided in the report, it is recommended that the wastewater COSS be amended to follow a consistent approach as the water COSS. Additionally, the wastewater COSS report does not explain the asset valuation method employed in determining fixed asset values for use in calculating functional allocation factors. A review of the COSS model indicated the assets are valued based on their replacement cost by adjusting the original costs to present-day dollars, and do not consider depreciation; however, the report does not state this fact. The report should be revised to explain the asset valuation approach and the rationale for selecting the chosen methodology. Finally, the approach of combining asset values based on replacement cost with no adjustment for asset depreciation, with the use of the CIP (if this method is adopted) may lead to "double counting" of the value of some assets due to the exclusion of depreciation and the fact that replacement of those assets may also be included in subsequent fixed asset additions or the CIP. To address this issue, it is recommended that the City use replacement cost less depreciation to value the existing fixed assets.

Key Findings & Conclusions
It appears from an independent review of the projects in the CIP that a number of the projects currently categorized as “Miscellaneous Projects” could be directly allocated to system functions such as “Meters and Services” and “Sewer Treatment Plant.” This will reduce the amount of costs that are indirectly allocated based on the results of all direct allocations, and more closely align the capital costs with the system functions driving those expenditures.
The current COSS report changes the allocation of sewer pipeline costs from the 100% allocation to fixed charges in the FY 2022 COSS to a 67% fixed and 33% volumetric split but does not provide supporting data or rationale for this change. The lack of explanation presents a risk, especially given the increased scrutiny on data and assumptions in the current legal environment discussed in Section 1.2. This highlights the need for better documentation of the rationale behind these allocations, including any data or analyses used to determine not only that the costs should be split, but that the appropriate allocation is 67% to fixed and 33% to volumetric charges.
Applying key points from the Coziahr v Otay Water District decision to wastewater rates, PUD could enhance the underlying data imbedded in the current wastewater rate structure to strengthen the foundation in determining each customer’s bills. For example, verifying or updating the 95% return flow factor, the winter average water usage, and the 20 HCF sewer cap for SFR customers would enhance the basis for these components of the SFR rate structure. Similar improvements could be applied to MFR and Commercial/Industrial customer classes through sampling studies and data analyses. The current basis for these assumptions should be discussed to support the current approach to billing each customer class. Additionally, updating wastewater strength characteristics for each customer class with local data instead of national estimates could further refine the basis for calculating bills for each customer.

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