San Diego County
Local Agency Formation Commission
Regional Service Planning | Subdivision of the State of California

5b

AGENDA REPORT
Business | Discussion

March 19, 2026

TO: Cities Advisory Committee

FROM: Joelle Burila, Analyst I
Tom Kennedy, LAFCO Consultant

SUBJECT: **Development of Weighted Water Rate Comparisons | Presentation of Draft Report by Kennedy Water Consulting, LLC**

SUMMARY

The Cities Advisory Committee (Committee) will receive an update on the development of water rate comparator report underway by the Special Districts Advisory Committee with assistance from Kennedy Water Consulting, LLC and support from LAFCO staff. Water rates across San Diego County continue to rise, with variations among agencies often driven by factors not well understood by the public. In response to frequent discussions of water rate impacts during Municipal Service Reviews (MSR), the Commission requested LAFCO staff to conduct a study on water rates in the San Diego region. The Special Districts Advisory Committee led this effort to help the Commission and the public better understand why water rates vary among agencies, while also creating a diagnostic tool to inform future MSRs.

BACKGROUND

Special Districts Advisory Committee | Developing Local Performance Measurements and Service Comparators

San Diego LAFCO has been working with the Special Districts Advisory Committee to explore opportunities to partner in developing local performance measurements and related service comparators as part of the Commission's municipal service review program. Since April

2025, the Special Districts Advisory Committee – through LAFCO consultant Tom Kennedy and support from a working group of local water professionals – has focused its attention on developing an inaugural comparator to assess water rates across San Diego County.[1] A draft report was presented to the Special Districts Advisory Committee on January 16, 2026, and subsequently presented to the Commission on March 2, 2026. LAFCO staff are incorporating feedback ahead of finalizing the project by the close of the fiscal year.

DISCUSSION

The Committee will receive a presentation on a draft water rate comparator report prepared by Kennedy Water Consulting, LLC on behalf of the Special Districts Advisory Committee with support from LAFCO staff. The report is designed to provide LAFCO a diagnostic tool for use in future municipal service reviews – one that contextualizes water rate variation across agencies based on structural characteristics and helps identify where rates may warrant further attention in relation to present and future affordability for the public.

With respect to the draft report's key components, it presents a high-level overview of the structural and operational factors influencing water rates across San Diego County and identifies comparative metrics related to system density, topography, development activity, local treatment, access to lower-cost supplies, and reliance on higher-cost sources such as desalination or potable reuse. Among other working conclusions, the draft analysis finds that many differences in water rates are driven by factors largely outside an agency's control, despite many relying on the same wholesale water provider. It also highlights growing concerns related to underfunded capital improvement programs and the implications for long-term service reliability, consistent with LAFCO's prospective oversight responsibilities. The draft report identifies opportunities for improvement, including enhanced asset management practices to better prioritize capital investments and potential legislative approaches to support more equitable and stable funding of long-term infrastructure needs.

Tom Kennedy will provide the presentation and discuss remaining steps, including a request by LAFCO staff for the analysis to incorporate equity factors and rate effects across different economic conditions. The Committee is encouraged to provide feedback for consideration by ahead of preparing a final report.

A copy of the draft report is provided as Attachment One.

ANALYSIS

None.

[1] Members of the Special District Advisory Committee Working Group include Chair Kimberly Thorner (Olivenhain Municipal Water District), Vice Chair Jack Bebee (Fallbrook Public Utility District), Paul Bushee (Leucadia Wastewater District), and Albert Lau (Santa Fe Irrigation District).

RECOMMENDATION

This item is presented to the Committee for discussion and feedback.

ALTERNATIVES FOR ACTION

None.

PROCEDURES FOR CONSIDERATION

This item has been placed on the Committee's agenda for discussion as part of the business calendar. The following procedures are recommended:

1) Receive verbal presentation from staff unless waived.
2) Invite comments from interested audience members if any.
3) Discuss and provide general feedback as needed.

On behalf of staff,

Joelle Burila
Analyst I

Attachment:

1) Water Rate Comparator Study Report

Blank for Photocopying

San Diego Local Agency Formation Commission

Special District Advisory Committee

Water Rate Comparator Study Working Group

Water Rate Comparator Study Report

December 2025

Prepared by

Kennedy Water Consulting, LLC

Table of Contents

Executive Summary

Water rates in San Diego County continue to rise, and the reasons behind these increases are often unclear to the public. In response to growing concern and frequent discussions of rate impacts during Municipal Service Reviews, the San Diego County Local Agency Formation Commission (SD LAFCO) directed its Special District Advisory Committee (SDAC) to examine why water rates vary so widely among agencies. This Water Rate Comparator Study is intended to offer an accessible overview of the primary factors influencing those differences.

The study team developed a set of practical, easy-to-understand metrics to illustrate key characteristics that inherently drive rates higher or lower. The effort did **not** evaluate whether any agency's rates are "good" or "bad." Instead, the metrics highlight relative influences such as system density, topography, development activity, local treatment, access to low-cost supplies, and reliance on high-cost sources like desalination or potable reuse. These indicators, based solely on publicly available data, are intended as comparative tools rather than precise measurements.

A central theme that emerged is the growing importance—and underfunding—of capital improvement projects (CIPs). Water systems across the county rely on infrastructure built decades ago, much of which is approaching or beyond its intended lifespan. The American Water Works Association and American Society of Civil Engineers have produced numerous reports highlighting this nationwide challenge. While agencies must charge for immediate operating costs and wholesale water costs, capital reinvestment is frequently the only discretionary lever available when trying to limit rate increases. As a result, many agencies defer needed replacements, leading to system-wide reinvestment levels far below what would be required to maintain assets on reasonable replacement cycles.

Two high-level capital spending metrics were developed to help SD LAFCO gauge whether agencies are keeping pace with infrastructure needs. These metrics reveal significant variation across agencies and indicate that investment levels at some agencies may not be consistent with long-term sustainability.

Overall, the study concludes that many factors outside an agency's control—geography, system layout, supply sources, and wholesale costs—play major roles in rate differences. At the same time, underfunded capital programs pose a growing challenge for agencies and for LAFCO's role in ensuring future service reliability. The report suggests two areas for improvement: adoption of advanced asset management practices to better prioritize spending, and potential legislative changes to provide more equitable and stable methods to fund long-term infrastructure needs.

Introduction

Within San Diego County, a myriad of public policy issues are stridently debated by individuals and groups with diverse opinions. Should we invest in more transit or better freeways? How should we manage the costs of solid waste disposal? Where should high density development be built? These questions – among many more – have proponents and objectors with different opinions on the solutions.

There is one public policy area where near unanimous agreement exists – the cost of water has been increasing steadily and there is no relief in sight. Irrespective of political leaning, geographical location, social status, or any other common differentiator among social groups, the ever-increasing cost of water has a unified impact on the public – water bills are straining already strained family budgets.

The San Diego County Local Agency Formation Commission (SD LAFCO) is the government agency created by the legislature to set the boundaries of public agencies, determine the municipal services they are authorized to provide, and also to perform periodic reviews of the public agencies that deliver those services within the County. These Municipal Service Reviews are intended to ensure each public agency charged with the provision of a particular municipal service is doing so effectively. Water providers, whether through a City or a Special District, are among the agencies that are periodically evaluated by SD LAFCO.

Over the last few years, the cost of water has become front page news with heated debates at City Council meetings and agencies across the county, with water rate increases significantly outpacing inflation. The cost of water has also factored into numerous proceedings at SD LAFCO and has been a decisive factor in decisions placed before the Commission. In response to this, the Commission requested LAFCO staff perform a study on water rates in the region.

The overarching goal was to help the Commission, and the public, understand why water rates vary from agency to agency. This document is the result of that request.

The Study Team

SD LAFCO has two special committees that are comprised of representatives from the agencies within the county. The individuals who serve on these committees, the Cities Advisory Committee and the Special District Advisory Committee, are elected via a vote of the member agencies subject to SD LAFCO. The Water Rates Comparator Study Project was assigned to the Special District Advisory Committee (SDAC).

At the SDAC meeting in April 2025, the assembled members discussed the project, facilitated in the discussion by Tom Kennedy of Kennedy Water Consulting, LLC, a water agency expert consultant to SD LAFCO. The discussion was wide ranging and numerous points of view were expressed. Despite the reservations of some, SDAC Chair Kimberly Thorner of Olivenhain Municipal Water District created a working group – tasked to work on the project, alongside Mr. Kennedy. The working group consisted of the following members:

Kimberly Thorner, Olivenhain MWD
Albert Lau, Santa Fe Irrigation District
Jack Bebee, Fallbrook Public Utility District
Paul Bushee, Leucadia Wastewater District
Tom Kennedy, Kennedy Water Consulting, LLC

Over the course of multiple meetings throughout the summer of 2025, the working group debated numerous factors that complicate such an analysis. The first was to develop what success in the endeavor looked like, followed by questions about data availability, data relevance, and the challenges of making "apples to apples" comparisons. Numerous concepts for reference metrics were suggested, tested, and abandoned due to these complications. However, the working group was able to distill down several metrics that were found to be illustrative of the several factors that influence varying water rates across agencies in the region.

Study Constraints – What This Report Is And Is Not

As noted by the SDAC member whose initial reaction was this effort was destined to fail, the development of a comprehensive water rate comparator system is extremely challenging. The work presented here reflects those challenges. At the outset of the effort, the working group defined several constraints for the study:

- The working group would not define any agency rates as "good" or "bad"
    - Water rates are very agency specific. The fact that one agency's rates are lower than another does not mean that the agency with higher rates has set them incorrectly or that the agency is somehow underperforming
- The working group would use publicly available data that is included in normal financial or other reports from agencies
    - This was to ensure consistency but also to avoid "cherry picking" of data
- The working group chose metrics that we expect to be easily understood by the public and the Commission

- While there are nuanced, complicated financial metrics that may have added value, the complexity of these metrics would make them understandable by accountants but not many others

It is important to note here that the metrics that were developed using publicly available data are derivatives of that data and thus subject to errors. The underlying data was never intended for the type of analysis presented here and thus represent a good, but not perfect, source of information.

The metrics presented here are not intended to represent exact values. In fact, for most of the metrics, the working group does not use numerical indicators at all to avoid them being used as exact measurements. ***These are relative comparators only and should be viewed/used as such.***

Through the distillation process of metric selection using the constraints described above, the working group arrived at a useful, but truncated set of metrics. There are many factors not evaluated in this study that contribute to the water rates for individual agencies. While additional data sets could be developed with enough effort, that was outside the scope of this project.

The working group recommends SD LAFCO staff use this study in the way it is indented: as a first glance look at water rates. Should the results for any agency stand out in comparison to others, ***that result should be the starting point for additional study, not a conclusion of any type.*** This study is not a substitute for agency specific financial analyses when conducting Municipal Service Reviews.

How are Water Rates Established?

To the public, the way water rates are established can be confusing, shrouded in complicated tables and charts. The processes used to create water rates are seemingly well understood but only by industry insiders and the consultants who assist agencies in their development. Public notices for rate increases are often filled with language that has been vetted by attorneys and is written to comply with statutory rules more than for the purpose of clear communications. These complex and often confusing communications sometimes reinforce suspicions of overcharging rather than easing them.

The challenge faced by water agencies is that there are numerous regulations that constrain any semblance of flexibility in the rate setting process. Voter initiatives, such as Propositions 26 and 218, have limited the options available for water agencies to consider

equity or other matters within their rate structures. A cottage industry of law firms scrutinizes every rate change, looking for a way to challenge the rates and generate legal fees. Several agencies in San Diego County, including the City of San Diego, who used "inclining block rates" to shield lower income customers from high water bills, were challenged in court and lost.[1] Agencies are now focused on avoiding litigation - at the expense of more equitable rate structures which have been found to be illegal.

Put simply, water rates are set to generate the required revenue to cover the costs to procure, treat, and deliver water to the customers of each agency. For each rate increase process, agencies must identify their expected costs for an upcoming year(s), which includes capital replacement costs for aging infrastructure. These costs are then apportioned to various cost categories which are then assigned into rate categories – some fixed and others variable.

For instance, the costs to manage an agency's meter reading and billing functions are generally shared equally among all accounts, since the costs are similar for each customer. These costs are generally applied to the fixed monthly service charge levied on all customers.[2] The costs for the actual water, treatment, pumping, and the like are generally added up and then put into the variable portion of a water bill that is charged based on the volume of water used. The concept here is that the more water you use, the more you pay. To encourage conservation and discourage water waste, many agencies used inclining block rates.

While well intended, and as previously mentioned, many rate structures of this type have been found to be illegal. In response, agencies are increasingly reverting to "flat" rates where the charge is the same per unit volume of water irrespective of how much is used. This avoids the prospect of litigation but is also seen as a less equitable rate structure. Unfortunately, Propositions 26 and 218, along with the numerous case law standards established since their passage, have severely limited flexibility in rate setting.

[1] Inclining block rates are rate structures where the volumetric charge increases incrementally as the total amount of water used increases.

[2] Note that these are simplified examples of cost allocations to rate components. In reality, there are much more complex allocation systems in use.

Capital Spending and Water Rates

What it takes to get water here

Water is free of charge when it falls from the sky in the form of rain or snow, so the question many have is why does it cost so much at the tap? In many parts of the US and within California, water is much less expensive than in San Diego County, so why are we paying so much?

The reality is that the amount of rain and snow that falls in San Diego County is insufficient to support even a fraction of the current population. Since World War II, when the first imported water pipelines were connected to San Diego County, the region has relied increasingly on water supplies that come from hundreds of miles away. The two main sources, the Colorado River and northern California via the State Water Project, are an engineering marvel that has allowed San Diego County to grow into the vibrant economy and communities we enjoy today.

Getting that water from far away sources and to the taps of customers is heavily dependent on infrastructure. From a dam high in the Sierra foothills or from the Colorado River, through a series of canals, pump stations, intermediate reservoirs, large diameter pipelines, and treatment plants, the water we use passes through many billions of dollars' worth of infrastructure before it even gets to the County line. Here in San Diego County, the San Diego County Water Authority (SDCWA) operates additional dams, reservoirs, large diameter pipelines, and treatment plants. SDCWA has invested billions in the County to ensure the water is safely brought into the county and delivered to its 22 member agencies.

At the local level, the retail agencies also must invest in the infrastructure needed to reach every home or business in their service area. Additional pipelines, storage reservoirs, treatment plants, pump stations, fire hydrants, and other associated structures add to the tally of infrastructure that is required for customers to use the water that started out hundreds of miles away.

The cost for all the infrastructure required to safely and reliably make our lives and economy possible is embedded in the retail rates charged by local water agencies. The costs for the big statewide systems are passed down from the State of California

Department of Water Resources (DWR) to the Metropolitan Water District of Southern California (MWD), to SDCWA, and then down to the retail agency level. It is not uncommon for costs from the big regional wholesalers to make up over 50% of the total cost of every water bill – before the local agency has even added a cent to cover the costs for supplying each community.

Capital Assets and Capital Spending

The provision of water is heavily dependent on the infrastructure, or capital assets, described above. Water agency finances are centered on the construction, operation, and maintenance of these assets. The cost of the employees of most water districts routinely represents less than 20% and sometimes less than 10% of the charges on water bills. The rest pays for capital assets, power to pump the water, and water purchases if you lack a local supply.

When SD LAFCO is reviewing whether an agency is providing a municipal service properly, it should not merely consider whether the agency is doing well in the present, but also if they are well prepared to provide this service into the foreseeable future. The provision of water services is dependent on infrastructure, so the proper funding of the repair, rehabilitation, and replacement of that infrastructure is a key concern for SDLAFCO.

A good deal of the water infrastructure in San Diego County was built out in the decades following World War II as the suburban expansion of the county progressed. Prior to the passage of Proposition 13 in 1978, many large infrastructure projects were financed through property tax assessments. If an agency needed new infrastructure, its board would vote to place an assessment on properties to pay off the debt over time.

Since Proposition 13, these board adopted assessments were banned, with a 2/3rds vote of the ratepayers required to approve the assessment. This high bar is very difficult to overcome, so few projects have been funded this way since. Water agencies shifted revenue generation to water rates. In the 1990s there was a sharp increase in the use of capacity fees that new connections must pay to access the system. Capacity fees can bring in significant amounts of revenue but are only a significant source of funds if there is a lot of development activity in your service area.

At the same time, the backbone infrastructure that was built out in the decades after World War II is at or near the end of their service lifespans. Most capital assets have lifespans that are 50 years, though some will last 75 and in some cases 100 years. Many agencies in San Diego County have a majority of the pipelines in their system that are over 50 years old. The Colorado River Aqueduct will turn 100 soon, adding to the challenge.

When water rates are being developed, agencies in San Diego County must first cover the cost of the immediate needs for the current period. They need to buy the water from SDCWA, pump, store, treat, and distribute it to customers, and manage all of the day-to-day administrative tasks associated with the agency. These costs would represent the absolute minimum rates an agency could adopt and be able to serve the needs of its customers.

However, as infrastructure ages its condition deteriorates. Pumps stop working, water mains break, and electrical systems fail - among many other things. Water agencies must consistently reinvest in their local infrastructure to keep the water flowing and avoid serious damage from main breaks. Some of the infrastructure was built long ago in remote areas or sensitive habitat, so the repairs today are much more costly due to environmental restrictions.

In response, and when developing rates, each agency must collect money in excess of what it needs today to fund Capital Improvement Projects (CIP) designed to repair, rehabilitate, or replace failing assets, hopefully before failure results in the extended loss of service for customers. CIP costs are generally apportioned out to customers in their water bills either through the fixed monthly charge, the volumetric charge, or a combination of both.

A significant challenge for San Diego County agencies is the fact that both MWD and SDCWA have their own CIP programs that are significant drivers in the rates that are passed down to the retail agencies. The amount of CIP spending is debated heavily at these wholesale agencies, but once established the local agency has no choice but to pay them.

When a local agency is preparing its budget and considering the rates required to support both the needs of the wholesale agencies and its own system, they are often left with few options. They can't avoid wholesale charges and must recover enough costs to meet their minimum operating expenses. At the same time, agencies sincerely desire to invest in repairs or improvements to their local infrastructure. To navigate these constraints, finance staff at local agencies usually prepare multiple options that show the rate impacts of various combinations or levels of capital spending.

The reality is that rate setting by elected bodies is sometimes focused on the option that has the least rate impact on customers. This is understandable – everyone would like to

see the lowest rates possible. However, this process can lead to a situation where the future is cast aside for the present.

When staff at a water agency prepare a budget, it includes a certain amount of money for CIP spending. This amount is based on analysis by the agency's engineering or CIP program staff. The CIP plans are based on specific studies or local knowledge of which pipelines or facilities are in the worst shape.

When spending options are presented to elected bodies, the rate impact of each option is included for consideration. It is an unfortunate reality that agency budgets, and thereby rates are frequently set at the lowest possible rate by cutting CIP spending. The only real lever these agencies can use to reduce the budget is in CIP spending. This process has been repeated at most agencies year after year.

Questions like "can that pipeline last until next year?" or "can we defer that project until times are better?" are repeated in board rooms across the county and the state. The result is that the rate of reinvestment in capital assets is often well below what is required for long-term sustainability.

In a perfect world, if an agency has assets that have a 75-year lifespan they would fund a CIP program that would replace or rehabilitate each asset every 75 years. Several agencies have studied their CIP spending relative to how long it would take to replace the entire system. In 2015, Rainbow MWD's CIP program had long been hamstrung by rates that failed to fund the needed projects so they could keep rates low for agricultural users. This resulted in a replacement frequency that was well over 1,000 years. To lower its costs, Rainbow MWD initiated a LAFCO action to access lower cost wholesale supplies, but rates were held nearly constant, delivering much needed CIP funds using the savings from lower cost water.

Olivenhain MWD performed a similar study recently and found that at current spending rates their replacement frequency would be about 800 years. That study identified an annual cost of approximately $50 million in today's dollars to bring that frequency down to a level that matched expected pipeline lifespans. With a total annual operating revenue of about $60M in FY2023, this amount of spending would have significant rate impacts, nearly doubling already high rates.

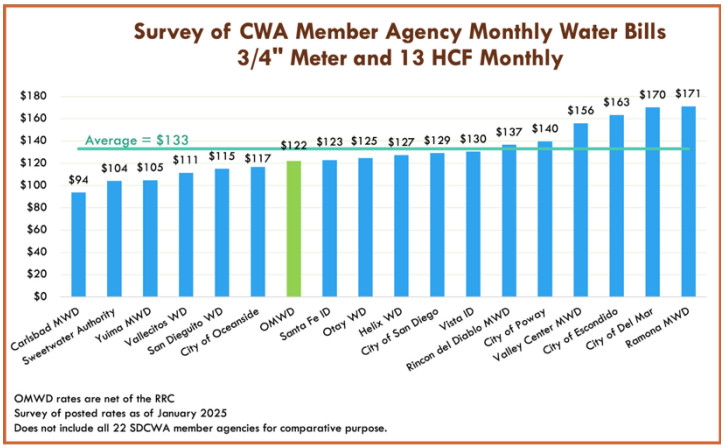
Appropriate management of capital assets is costly, and funding these programs effectively is becoming one of the largest drivers in water rates. The unfortunate reality for most water agencies is that current capital programs are funded well below the levels at which a reasonable asset replacement frequency can be achieved. While these aging systems are holding up now, Father Time is undefeated – meaning infrastructure

degradation over time is inevitable, and significant reinvestment will be required to ensure the provision of safe, reliable drinking water in the not-too-distant future. In a later section, this report will provide some best practices that agencies can employ to address the issue in the most cost-effective way possible.

"Traditional" Water Rate Comparators

When publicly elected boards or councils are asked to approve increases in water rates, a commonly asked question is "how do our rates compare to other agencies in the region?" It is a fair question based mainly on a desire to ensure that the proposed rates are not excessive or out of line with the rates of neighboring agencies. Elected officials are hesitant to approve rates that appear to be higher than other agencies, irrespective of the fiscal realities facing their agency.

To provide this information to their respective boards, staff members at water agencies usually prepare a comparison graph showing the total charges for an "average" customer for their agency with charges from other regional agencies included for comparison. Since the charges from water agencies include both fixed monthly fees and volumetric rates based on consumption, staff must choose a particular customer class, meter size, and average volume of water to perform these calculations.



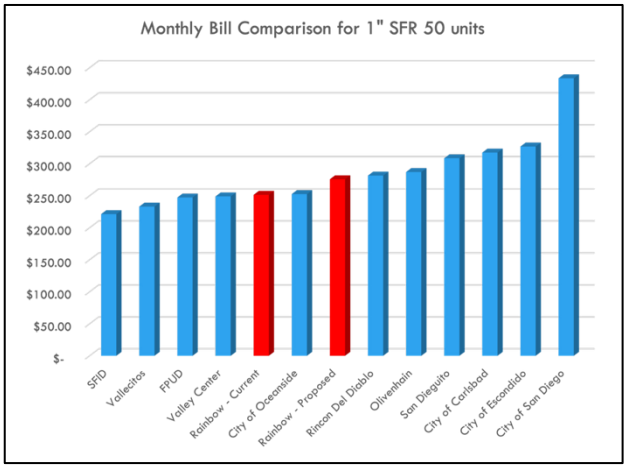
The figure on the right is a typical comparison chart. This one of several charts prepared recently by Olivenhain MWD, compares OMWD's total bill for a ¾" Single Family Home customer with consumption of 13 HCF (one HCF= one hundred cubic feet, or 748 gallons) per month. Other charts reflect different volumes of water and meter sizes.

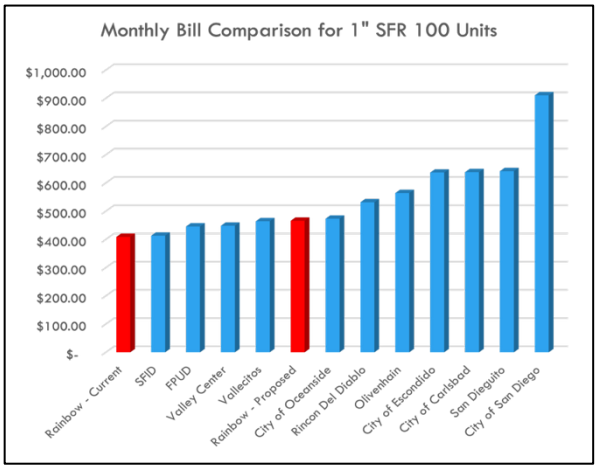
These charts, while certainly useful, can sometimes be misleading. The selection of the comparator agencies made by staff may not include all agencies, which is the case here. Since the charts generally use a self-selected volume of water for the calculation, the role of fixed monthly charges in shaping the total bill has a significant influence on the results and, thus the agency's "ranking" in total bill cost.

For example, in 2015 Rainbow MWD was adjusting rates for its customers, which tend to be larger lot customers whose water demands are, on average, much higher than urban or

even suburban users. Within that agency, meter sizes are larger – such as 1" and larger – being much more common than urban/suburban agencies. Rural agencies tend to have higher fixed monthly charges and lower volumetric rates, which reflect the customer demand patterns within their service areas. Agencies with higher levels of demand variability due to weather tend to have higher fixed charges to stabilize revenues.

For these reasons, Rainbow, along with other more rural agencies tended to compare unfavorably when smaller amounts of water demands are used in these calculations. The larger monthly service fees are not offset by lower volumetric charges at these lower consumption levels. Below are two graphs from the 2015 analysis by Rainbow MWD that show how consumption (presented in "Units" which are the same as HCF) compared to other agencies.





These two charts show how at a consumption level of 50 units per month, Rainbow's current rates were in the middle of the pack, but at 100 units they were the lowest in the comparison group. Since many agencies have multiple customer classes each with multiple meter sizes (and monthly charges), these sorts of comparisons, while helpful for elected boards, don't always tell the whole story.

Revised **Methods of Analysis**

This study used two primary methods of analysis. The first method looked at qualitative metrics that compare several key characteristics of water agencies that can drive rates

higher or lower, depending on the characteristic. The selection of these metrics by the working group used the parameters described above.

The second method of analysis represents a more quantitative assessment of capital spending. The data was derived from Annual Comprehensive Financial Reports that are published annually by each agency. These publicly available reports follow standardized formats that reduce, but do not entirely eliminate uncertainty in the results.

Key Characteristic Metrics

If all of the water agencies within the SDCWA service area are buying water at the same wholesale price, why do we see so much variability in the retail rates charged to customers? Do comparatively higher rates mean that the agency is inefficient or is simply overcharging customers? The reality is that there are certain inherent characteristics of water agencies that can drive rates higher or lower irrespective of administrative efficiency.

As noted in the introductory section, there are myriad variables that go into the relative cost structures of each water agency. No two are exactly alike and thus each has different cost components that make up their overall operating expenses. The working group considered many more key characteristics than what are presented here. Some were dropped because the data to calculate them was not readily available. Others did not make the cut because they were excessively complex and hard to understand.

Two metrics that could be useful, but were not included at this stage involve system age, and system complexity. System age would evaluate the age of the pipelines which can be, but is not always, related to the cost of repairs and replacement programs. System complexity would create a calculation based on the number of valves, pumps, pressure zones, tanks, and other facilities per customer. Both would require significant amounts of additional data to complete.

The following Key Characteristic Metrics were produced using readily available data and are understandable by the general public, and not limited to water experts. Note that each metric has a different method of calculation to create relative scores on a scale of 1 to 10. This method allows each metric to be shown as a relative contributor to higher or lower, water rates on the combined metrics chart.

The working group would like to emphasize that this is a novel effort. If any readers have any comments or suggestions for additional metrics or improvements of the metrics below, please contact San Diego LAFCO staff.

System Density

The cost to operate a water system relies on the water distribution network that delivers the water to customers. The number of miles of pipe in each agency's distribution system varies widely, with the smallest having 44 miles of pipeline and the largest over 3,000 miles of pipeline. However, the overall length of the distribution system has less impact on water rates than the number of service connections per mile of pipe. If the cost of operating and maintaining pipelines is roughly equivalent per mile of pipe across all agencies, those with fewer customers per mile of pipe must charge each customer incrementally more because there are fewer customers to share the cost burden.

In general, more urbanized agencies have much higher system densities than rural agencies. The City of San Diego has the most pipelines in terms of miles of pipe but also has the highest system density at over 96 customer connections per mile of pipe. Yuima MWD, on the other hand, has only 7.9 customer connections per mile of pipe. Thus, the City of San Diego can spread every dollar spent on pipeline repair or replacement across ten times as many monthly bills than Yuima MWD can.

Calculation:

$$System\ Density = (Nc/Mp)/10$$

Where Nc=Number of Service Connections

Mp=Miles of Pipeline

System Topography

Water distribution systems are hydraulic systems – they operate on the basic principles of fluid mechanics. The pressure in the pipelines in the street are based on the hydraulic grade line of the system which is established using combinations of pumping systems, storage reservoirs, and pressure regulating stations. All of these systems work in concert to ensure the pressure at each customer connection is within an acceptable range.

In a relatively flat distribution system, fewer of these systems are required to either raise the water pressure at higher elevations, or reduce the pressure at lower elevations. In many flat systems outside of San Diego County, elevated tanks are used to establish adequate pressure for consumption. With few flat areas, San Diego County water agencies cannot take advantage of these simpler systems.

However, among the agencies in San Diego County the topography varies widely. Some systems, primarily coastal systems, have lower total elevation changes within their

distribution systems than others, mainly the inland systems. Systems such as Carlsbad MWD, San Dieguito MWD, and the Sweetwater Authority have elevation differences of about 500 feet total from top to bottom. Other systems have much higher differences in elevation in their systems, with Rainbow MWD topping the list at about 2,200 feet.

Water is heavy, so with every 100 feet in elevation change, the system pressure will increase over 43 pounds per square inch (PSI). Considering that the maximum pressure allowed for residential plumbing fixtures is 80 PSI, absent active pressure management systems like Rainbow MWD would see incredibly high pressures in many parts of their service areas. Systems like Rainbow MWD operate dozens of pressure regulating stations creating separate pressure managed areas, where systems like San Dieguito has only a handful of distinct pressure zones.

In addition, imported water enters the County through SDCWA pipelines that operate as an open, falling grade line system. In the northern sections the water has a maximum elevation of about 1,300 feet above sea level. To protect their own pipelines from excessive pressure, this hydraulic grade line is reduced through a series of vents as the pipelines go south. By the time the water gets to the vents in the Miramar area the hydraulic grade line is under 900 feet.

Any agency who serves water at elevations above the available grade line in their service area must pump that water uphill to serve their customers at those elevations. Valley Center MWD operates well over 100 pumps for this purpose across dozens of pump stations.

The cost to operate both pumping systems and pressure management systems is much higher for agencies with larger differences in elevation within their distribution systems. An empirically derived formula was developed to assign a relative "score" to visualize the effect of different system topographies on water rates.

Calculation

$$Topography\ Score = 10.15 - (\frac{Dt}{220})$$

Where Dt = Elevation Difference of Distribution System

Note that this calculation was empirically derived to fit the scale of the metrics charts

Development Activity

As noted previously, when development activity occurs within an agency service area, each development project pays a capacity fee established by the agency as a condition of the approval to connect to the water system. These fees vary from agency to agency, but over

the last 30 years have increased significantly, ranging from several thousand dollars to over $20,000 per connection (depending on meter size).

For agencies with higher rates of development, these capacity fees provide additional non-operating revenues that can supply much needed funds for CIP programs. Higher growth area agencies can hold water rates lower while still funding their CIP programs. Lower growth area agencies are not as fortunate and must recover funds for CIP directly from customers through water rates.

It should be noted that development activity happens in phases and cannot be counted on for future revenues except in areas with reliable long term growth projections. Most agencies will receive influxes of capacity fee revenue during build out of developments and then see it shrink to a trickle for years or decades. However, while an agency is in a development cycle their ability to collect non-rate revenue is greatly enhanced over agencies with little development activity.

To assess this metric, the amount of capacity fee revenue was compared to operating revenue resulting in a value that represents capacity fee revenue as a percentage of operating revenue. These values were obtained from publicly available financial reports on agency websites. A five-year average was calculated though some agencies only had a few years of data on their websites. In addition, not every agency itemizes capacity fee revenue in their financial reports, so calculations could only be performed for 10 out of the 24 agencies.

Calculation

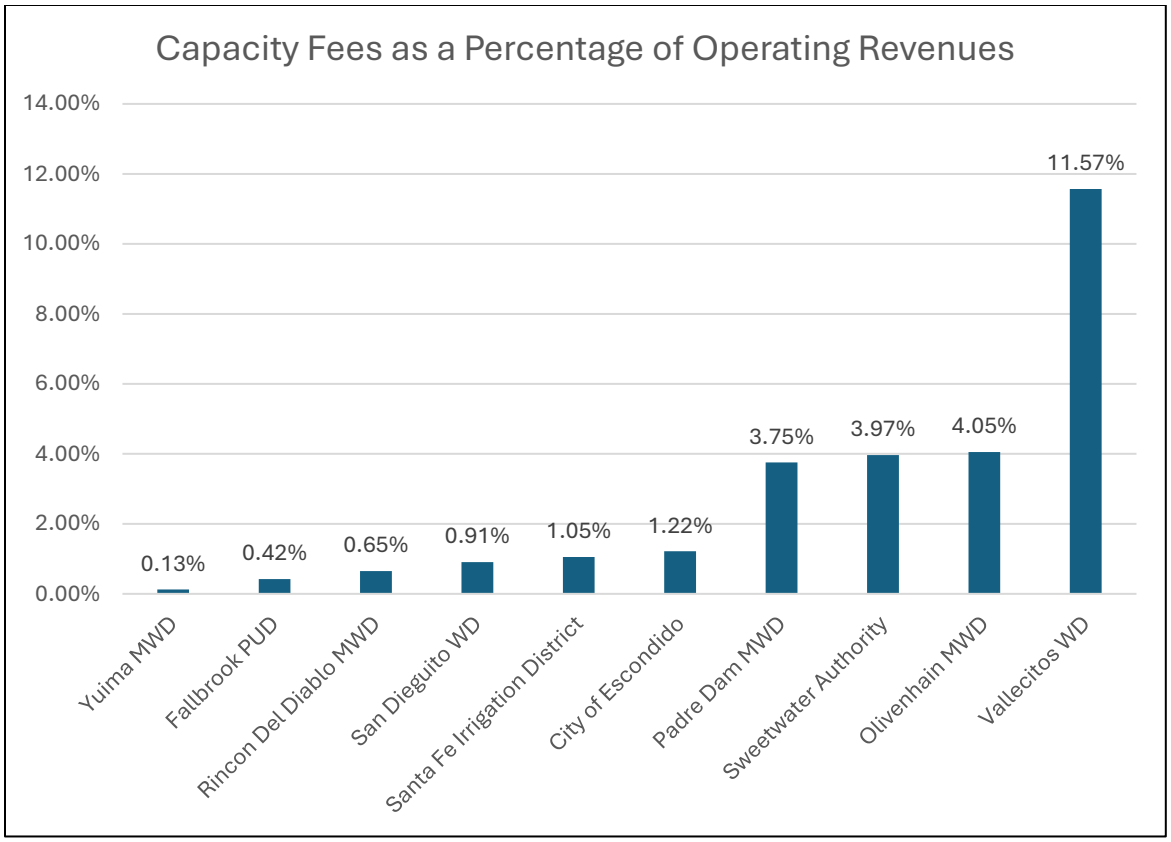
$$Development\ Activity\ Score = 1 + 9 * \frac{(Pa - Pmin)}{(Pmax - Pmin)}$$

$$Where\ Pa = Agency\ capacity\ fee\ revenue\ as\ a\ percentage\ of\ operating\ revenue$$

$$Pmin = lowest\ percentage\ of\ all\ agencies\ evaluated$$

$$Pmax = highest\ percentage\ of\ all\ agencies\ evaluated$$

The chart below shows the relative percentage calculations for the 10 agencies where data was available on publicly accessible websites. This chart shows the wide range of development activity in San Diego County. High levels of development in the City of San Marcos results in Vallecitos WD receiving the highest level of capacity fee revenues while the rural Yuima MWD has almost no such revenue.



Local Treatment

Imported water enters Southern California as raw, or untreated water. Before it can be delivered to homes it must receive treatment to remove pathogens and be suitable for potable use. Where that water is treated varies from agency to agency. Many of the older agencies, mostly in the south and east portions of the County, constructed treatment plants in the early part of the 20th century, with the City of San Diego's Otay plant dating back to 1914. Other agencies constructed treatment plants in the post war era.

For decades, a significant portion of water treatment occurred in Riverside County at the Skinner Treatment Plant operated by MWD. With multiple pipelines entering the County from the north, some lines were dedicated to treated water and the rest delivered raw water. Approximately 25 years ago, the total demand on SDCWA's treated water pipelines was reaching its maximum capacity. Consideration was given to the construction of a new pipeline (pipeline 6) to address the issue but the cost of a new pipeline was considered too high. Instead, a new round of treatment plant construction and expansion was undertaken by both SDCWA and member agencies.

Olivenhain MWD completed construction of the David C. McCollom plant in 2002 and a few years later SDCWA completed construction of the Twin Oaks Valley plant. Along with other projects in the County these plants eased the capacity problem in the pipelines but also increased the cost of treatment.

Both MWD's Skinner plant and SDCWA's Twin Oaks plant are large, and as treated water demands declined over the 2000's and 2010's due to local member agencies building their treatment plants, the capital costs of these wholesale water agency plants were spread across fewer and fewer acre feet of water. This situation, along with the overall decline in retail agency demands, increased the treatment cost charged to member agencies considerably.

Agencies who own and operate their own water treatment plants benefit by purchasing lower cost raw water and by having lower per acre foot treatment costs at their own plants. Most agency owned plants are smaller and operate closer to their design flow rates which makes them more efficient. The Twin Oaks plant currently runs at only about 25% which makes it particularly inefficient.

The scope of this study did not allow for a precise per acre foot calculation of water treatment costs agency by agency. However, the consensus of the working group was that agencies with their own treatment plants by and large produce treated water at a lower cost than those who are subject to the costs of plants run by MWD and SDCWA. For the purposes of this study, agencies were assigned a score that reflected whether they operated their own treatment plant or not.

Calculation

$$Treatment\ Score = 8\ (if\ agency\ owns\ a\ plant)$$
$$Treatment\ Score = 4\ (if\ an\ agency\ relies\ on\ SDCWA/MWD)$$

Low-Cost Local Supplies

While most of the water demand in San Diego County is satisfied using imported water, there are some agencies who have access to lower cost local supplies. Most of these agencies are in the southern and eastern portion of the county and benefit from the early development of dams and water systems dating back to the 19th century. Both the Sweetwater Dam and the Cuyamaca Dam were constructed in 1888. Others followed before World War II and were the main sources of water for San Diego County prior to the importation of water. A small amount of groundwater is available in the County and is mostly used by Lakeside Water District and the Sweetwater Authority.

Several agencies enjoy the benefits of local surface or groundwater, which is free when it falls from the sky and the only cost is the management of the dams, wells, reservoirs, and associated facilities. These water supply sources cost only a fraction of the cost of imported water. Since the largest cost component for many agencies is the cost of imported water, agencies who have access to local supplies can pass on these benefits to their ratepayers.

Scoring for this category was based on estimates of the percentage of total water demands that come from low-cost local supplies for each agency. The Sweetwater Authority tops the list with approximately 70% of their demands satisfied by surface or groundwater supplies. Many agencies have no low-cost local supplies and are completely dependent on imported water.

Calculation

$$Low\ Cost\ Local\ Supply\ Score = 2.5\ (if\ no\ low\ cost\ local\ supply)$$
$$Low\ Cost\ Local\ Supply\ Score = 5 + (Pl * 5)$$
$$Where\ Pl = Percentage\ of\ Low\ Cost\ Local\ Supply$$

High-Cost Local Supply

Over the last 25 years there has been a rapid expansion in the development of alternative supplies which are primarily based on the reuse of wastewater. Until very recently, these reuse projects centered on non-potable uses for water such as irrigation. Distributed in separate "purple pipe" distribution systems, this reclaimed water allowed agencies to irrigate schools, parks, medians and other sites using a local supply which reduced the need for importing water. Many inland agencies have no access to other discharge methods, such as ocean outfalls, so the reuse of the water is the only option.

In 2015 SDCWA commenced operation of a new source of water, the Claude "Bud" Lewis Carlsbad Desalination Plant. While originally forecasted to provide water that would be competitive with imported water costs, these forecasts were inaccurate. Water costs from the desal plant are now about triple the cost of imported water. While the main impact of these costs has been to increase the cost of water from SDCWA, two member agencies, Carlsbad MWD, and Vallecitos MWD signed agreements for direct deliveries of this more expensive water.

Over the last several years there has been a new entrant to the water supply portfolio here in San Diego and across California – potable reuse. Several factors have contributed to the rise of this new water source. The cost to deploy dedicated "purple pipe" distribution systems for non-potable reclaimed water stymied the expansion of these systems as the

cost of the water would exceed imported water. Revised regulations and treatment standards for potable reuse have brought certainty to the planning, financing, and project development processes. The capacity/capabilities of wastewater treatment plants and/or ocean outfall pipelines have made potable reuse financially viable when compared to the cost of upgrades.

While some of the costs of these potable reuse systems are charged to wastewater customers as part of the wastewater disposal component of those rates, the relative cost of potable reuse water is higher than imported water. There are agencies who present compelling arguments to the contrary, but these arguments generally use sophisticated mechanisms to shift costs in ways that don't receive unanimous agreement from others.

Local supply development of all types is good for the region. The extreme dependency of San Diego County on far away water sources is likely not sustainable given the projections for hydrological change in the upcoming decades. Colorado River supplies are under extreme duress and supplies from Northern California have their own issues related to changes in hydrology, an antiquated levee system, and environmental challenges. These potable reuse supplies are considered among the highest reliability sources and reuse a precious resource that often came from hundreds of miles away.

However, these benefits come at a cost, which is passed down through water bills to customers. Whether compelled to create the supplies due to regulatory constraints, such as is the case for San Diego Pure Water, or by a desire to have a more resilient supply portfolio, the outcome is the same.

Calculation

Note: This calculation is based on a maximum of 25% high cost local supply for an agency. As these supply rates increase over time this calculation will need to be adjusted.

$$High\ Cost\ Local\ Supply\ Score = 5 - 0.16 * P$$
$$Where\ P = High\ Cost\ Local\ Supply\ Percentage\ in\ whole\ numbers$$

Water Rate Impact Charts

The main objective of this new method of analysis is not to compare the water rates of one agency against another. That sort of analysis fails to take into consideration the agency specific financial realities such as the subset presented above. This method of analysis is intended to help the Commission and general public understand *why* water rates are different from agency to agency.

As noted previously, no numerical values are presented in these charts. Instead, each of the key characteristic calculations are presented in a way that shows whether the impact of each characteristic will tend to increase rates, or lower rates. If a key characteristic is neutral on rates, the tick mark will be in the center of the range.

This draft report presents data from three of the agencies involved in the current round of North Coastal Municipal Service Reviews. These agencies have been actively involved with providing data to LAFCO and its consultants, and thus were chosen for this report. Additional data has been gathered for 19 other agencies but the data was not provided by the agencies, but drawn, or inferred, by LAFCO's consultant. Additional charts will be developed once feedback on this methodology is received and the subject agencies can provide data directly.

Olivenhain Municipal Water District

Key Characteristics

Local Treatment – OMWD operates their own treatment plant

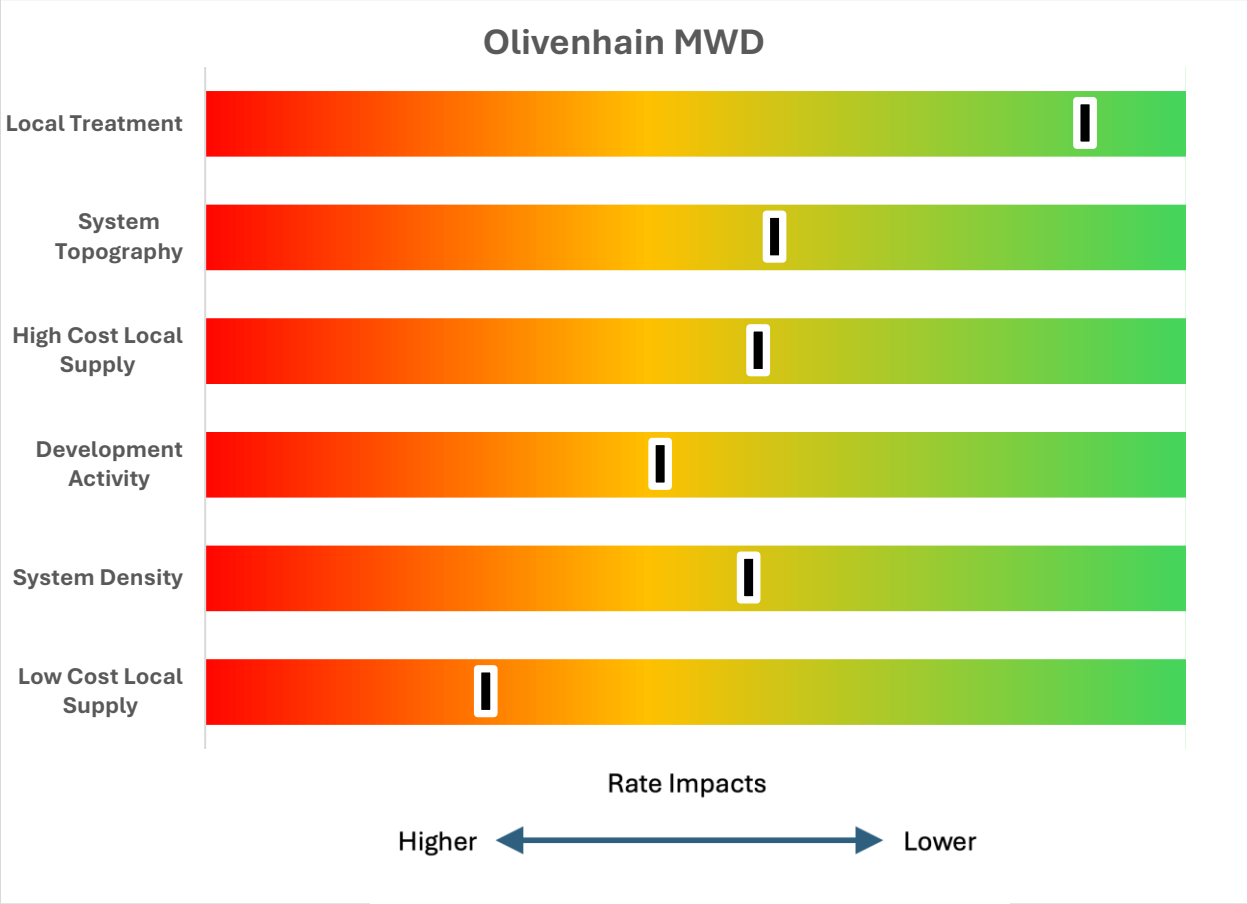
System Topography – While varied, OMWD's topography is not extreme

High-Cost Local Supply – OMWD has no high-cost local supply

Development Activity – OMWD has moderate development activity

System Density – OMWD's system density is average

Low-Cost Local Supply – OMWD has no access to low-cost local supplies



San Dieguito Water District

Key Characteristics

Local Treatment – SDWD is a part owner of the Badger Treatment plant with SFID

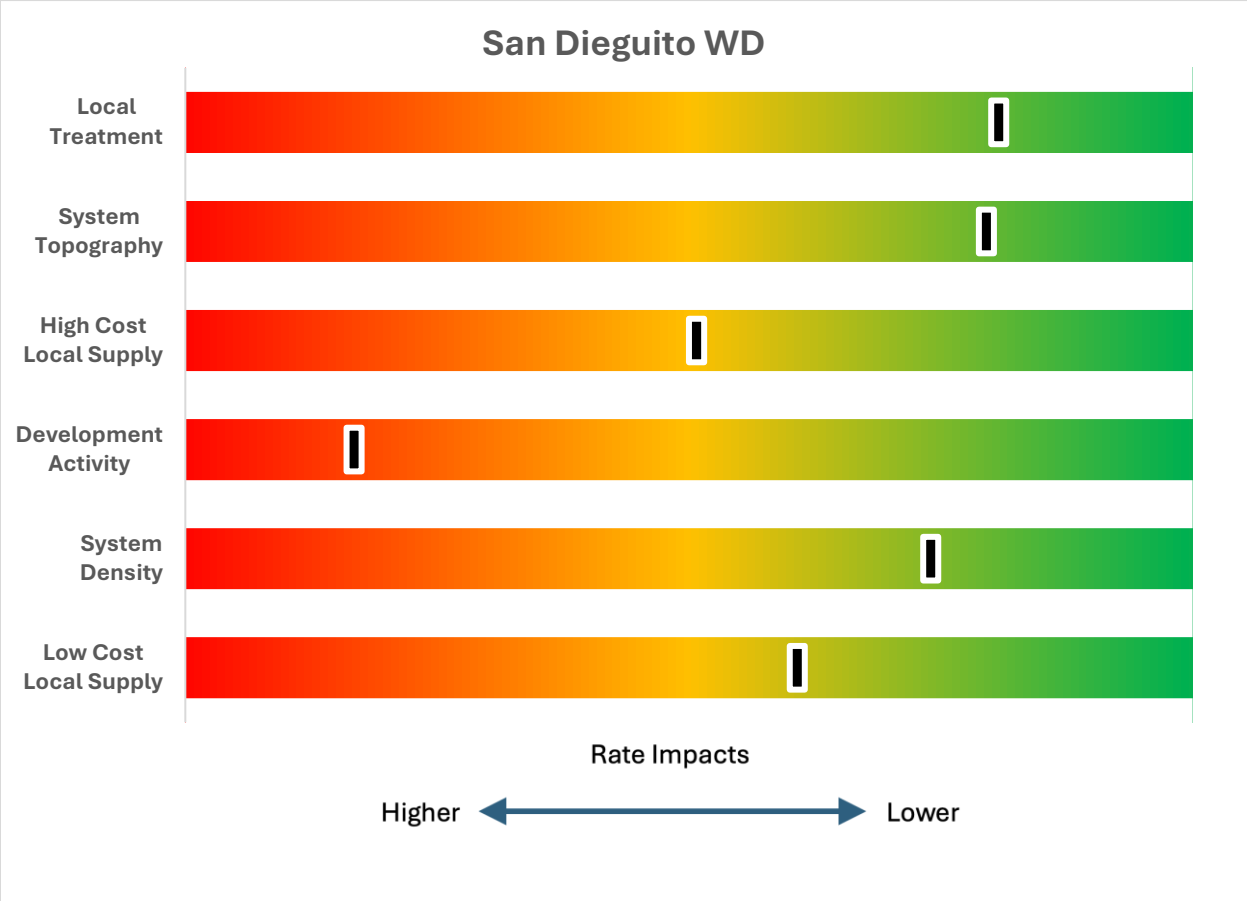
System Topography – SDWD has relatively small elevation changes in their system

High-Cost Local Supply – SDWD has no high cost local supply

Development Activity – SDWD has low levels of development activity

System Density – SDWD has higher than average system density

Low-Cost Local Supply – SDWD has access to low cost supplies, though the challenges at the Lake Hodges Dam has diminished this recently



Carlsbad MWD

Key Characteristics

Local Treatment – CMWD has some local treatment, but it is from the desal plant, which is at a higher cost

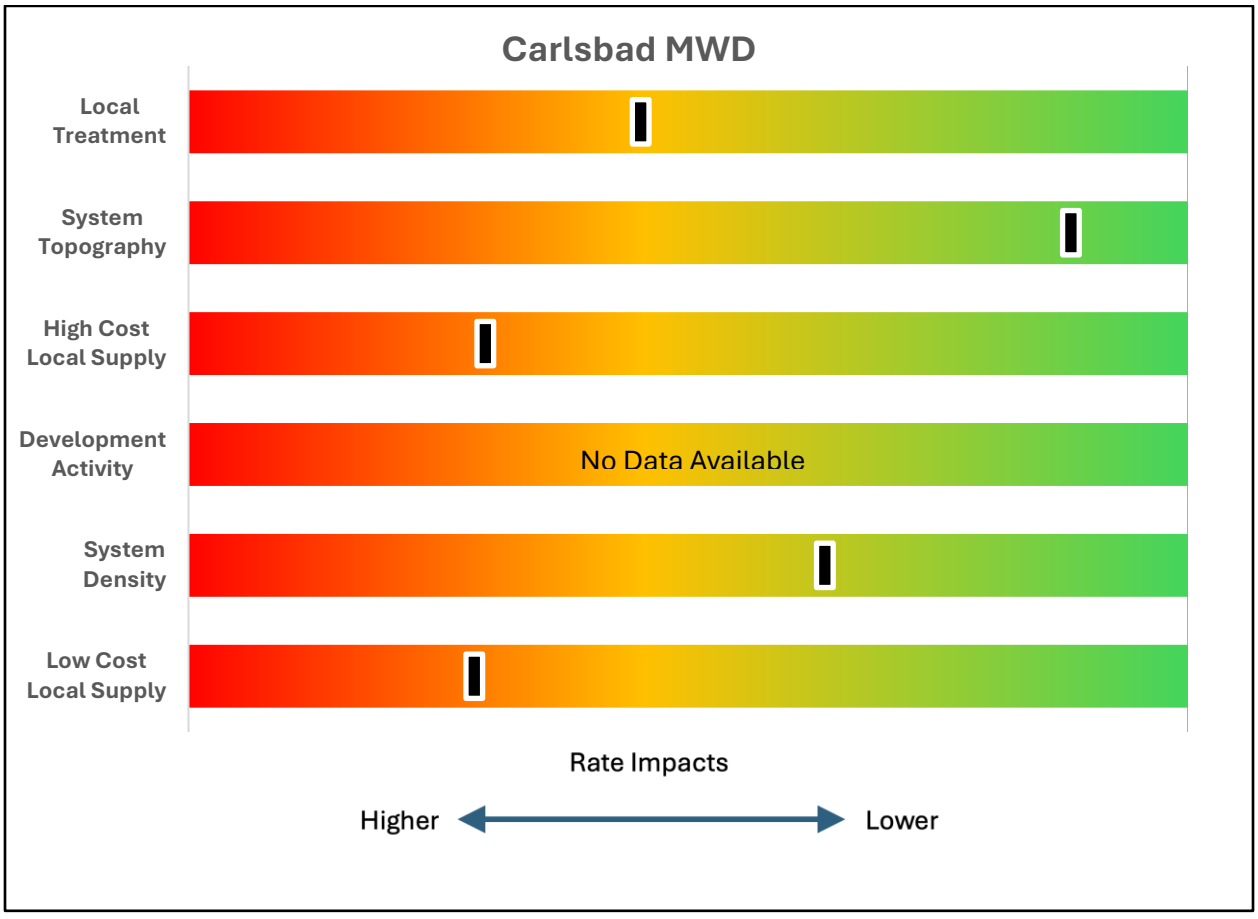
System Topography – CMWD has relatively small elevation changes in their system

High-Cost Local Supply – CMWD has high-cost water supplies from the desal plant

Development Activity – No Data Available but expected to be higher than average

System Density – CMWD's system density is just above average

Low-Cost Local Supply – CMWD has no low-cost local supply



Interpretation of Water Rate Impact Charts

The charts provided above don't prescribe what an agency's water rates should or should not be. They look at only a handful of myriad variables that go into rate setting. A chart

could show many indications that rate pressures are lower than other agencies, but any number of other variables could shift the actual rates in a different direction.

In this small subset of agencies, the data loosely correlates with the "traditional" method of rate comparisons provided above. Any comparison between the two should be conducted with the understanding of the limitations of both methods.

These charts represent a snapshot of some reasons why rates are what they are. If, during a Municipal Service Review process, LAFCO staff compares these charts to the "traditional" method of rate comparisons shown above and identifies some discrepancies, this does not mean the rates were improperly set. It can be an indicator that additional review may be required if an agency is an outlier in one or more categories.

Capital Spending Analysis

As noted in previous sections, the provision of water in municipal systems is heavily dependent on a wide variety of capital assets. The combined value of these assets in San Diego County is measured in many billions of dollars of pipelines, treatment plants, pump stations and other facilities. Additional billions have been invested in the statewide systems that bring imported water into the County.

Once any form of capital asset is constructed, whether it be a small service lateral to a home or a huge transmission main, the clock starts ticking towards the eventual need to replace that asset. Every asset will, at some point, degrade in performance absent a reinvestment of some sort to replace or rehabilitate that asset. Every water supplier must address these issues which is becoming an increasingly difficult problem to solve.

From a LAFCO perspective, the Municipal Service Review process evaluates the capability of each agency to provide water as a municipal service for a specific service area. These reviews are mainly retrospective to see how the agency has been performing during a certain review period. LAFCOs also have an obligation for prospective review to ensure that the agency is prepared to continue service into the foreseeable future.

The challenge that the working group addresses here is how can LAFCO determine whether an agency is well prepared financially to handle the need to repair or rehabilitate the capital assets that are essential to their assigned municipal service function? Is an agency spending an appropriate amount on repair, replacement, or rehabilitation of their assets? How is the agency dealing with the water rate impacts of CIP programs, which can amount to a significant percentage of overall expenses?

The working group considered a number of options but after considering challenges – including data availability and accessibility of the metrics for non-accountants –two metrics were chosen and further detailed in the proceeding section. It should be noted the metrics presented here are imperfect, but can present a high-level view of how an agency is prioritizing capital spending overall.

One of the largest challenges is that the data was drawn from publicly available Annual Comprehensive Financial Reports (ACFR) that each agency is required to produce each year. While these reports are based on a standardized format, there are variations in the detailed accounting practices among agencies that can lead to a level of uncertainty in the information.

In addition, there are times when capital spending increases for single large projects such as a new treatment plant. Other times these large capital projects are not related to the backbone infrastructure but instead are for office buildings or other necessary assets that are not directly related to moving water. The scope of this project did not include a detailed review of the types of projects that each agency funded with the capital spending reported in their ACFRs.

Capital Spending Metrics

The working group settled on two primary capital spending metrics that tell slightly different stories. Unlike the individual agency metrics used above, these metrics are more similar to the "traditional" water rate comparison charts in that they include all agencies on a single chart. As noted above, these charts are not intended to indicate whether a level of capital spending is "good" or "bad", but to give LAFCO a general idea as to how the level of capital spending compares to similar agencies.

An agency who has higher values in either or both of these charts may still be spending well below the levels necessary to proactively repair or replace infrastructure. Conversely, an agency with lower values may have a "newer" system that does not require the higher level of spending – yet. These charts are a starting point and may guide LAFCO staff towards more detailed analysis during Municipal Service Reviews.

Capital Spending to Depreciation Expense Ratio

When an agency constructs a capital asset, it spends a certain amount of money on that asset. In accounting terms, that spending is deducted from a cash fund on the books and added to a fixed asset fund, which holds the value of all of the assets of the agency. The cash may be gone, but the asset still has value and that is reflected in the net position of the agency going forward.

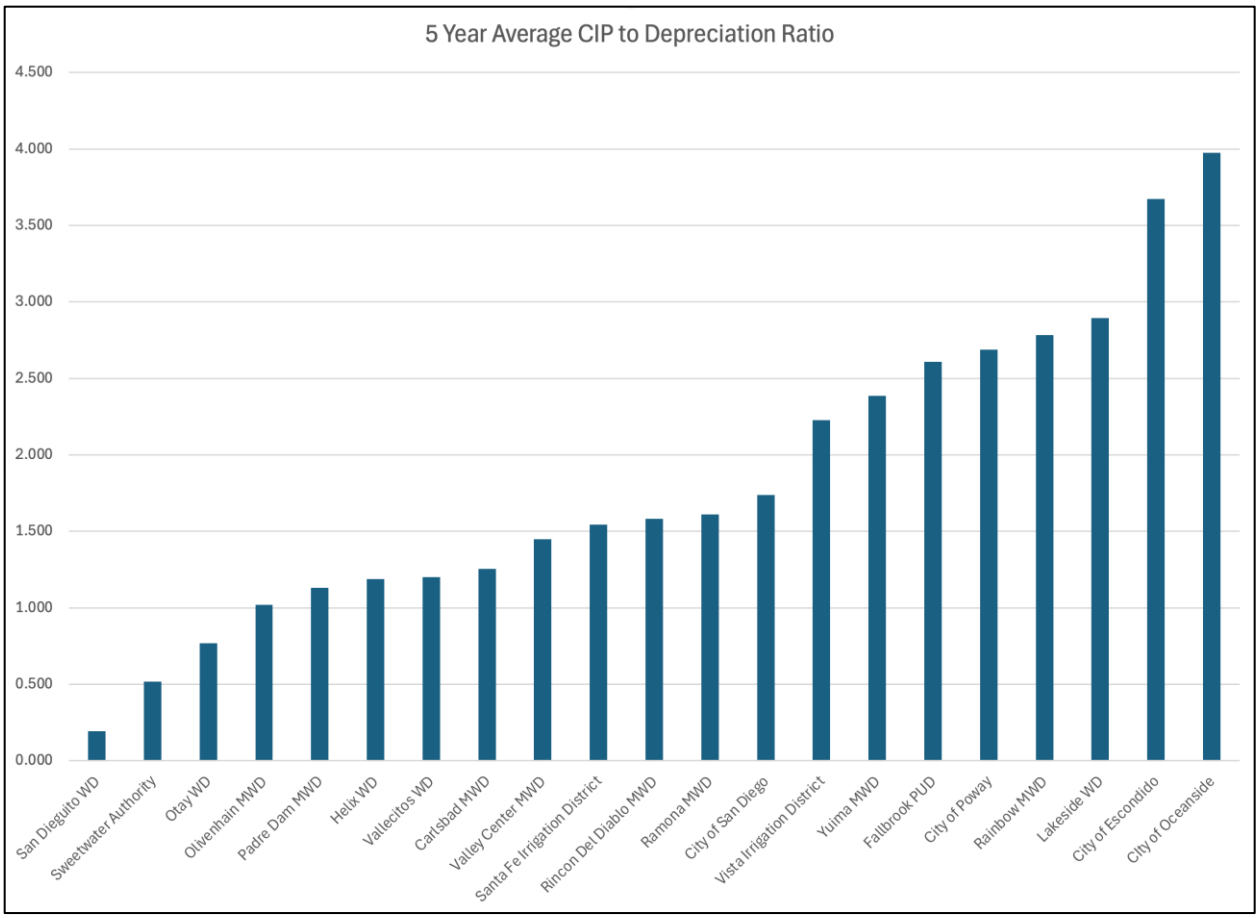
However, just as when you drive a new car off the dealership's lot, the value of the asset begins to decline immediately. The process of subtracting this lost value of the asset each year is known as depreciation. There are many methods of depreciation, but for simplicity's sake in this description we will consider straight line depreciation. When constructed, the accounting department will assign a useful lifespan for the asset, whether that be 50 years or 100 years. From year one on they will deduct 1/50th (or 1/100th) of the original value of the asset from the fixed asset fund. By year 50 (or 100) the "book value" of the asset will be zero. The amount of annual depreciation of fixed assets is reported in a line item of each agency's ACFR.

In the simplest of terms, depreciation can be an indicator of the magnitude of asset degradation in any fiscal year. Using this perspective, if an agency is spending the same amount of money that is being lost to asset degradation, they should be OK. In this simplistic view, the agency is replacing assets as fast as they degrade.

However, it is not that simple. One huge factor is inflation. A pipeline installed 50 years ago cost a small fraction of what the identical pipeline would cost to be installed today. 1/50th the cost of a mile of pipe installed in 1975 does not buy 1/50th of a mile of pipe today. For this reason, even capital spending at a level equal to annual depreciation may be well below what is required.

Another factor is that many agencies, especially ones whose infrastructure was installed long ago, have already depreciated many assets to zero book value. At that point, the annual depreciation expense declines significantly – but the need for replacement remains. If your agency has already depreciated a significant amount of your infrastructure your capital spending to depreciation ratio needs to be many times higher than 1:1.

In the chart below, the five-year average of capital spending to five-year average of depreciation expense ratio was calculated for the 22 member agencies of SDCWA plus Fallbrook PUD and Rainbow MWD. Using five-year averages helps to smooth out high or low spending years. However, in any five-year period some agencies may be saving up for a large future project or had just completed a large project just prior to the reporting period and are building reserves for the next cycle. This fact adds another level of uncertainty to the data.



The chart above displays a wide range of CIP spending to depreciation expense ratios. From the City of Oceanside at a nearly 4:1 ratio to San Dieguito WD well below 0.25:1. All but three agencies exceed a 1:1 ratio and the median value is 1.58:1. The average value is 1.83:1, which is not too far off the median.

We can't just interpret this chart and say, "Oceanside is the best!". While this has not been confirmed with City staff, we are aware of significant capital spending on their Pure Water Oceanside project, which likely skews these numbers. Escondido has also been building an advanced water treatment plant, which has likely increased their ratio.

What LAFCO can do is monitor these values over time and when the time comes for a Municipal Service Review they can use these charts to identify areas where additional study is required.

CIP Spending as a Percentage of Operating Expenses

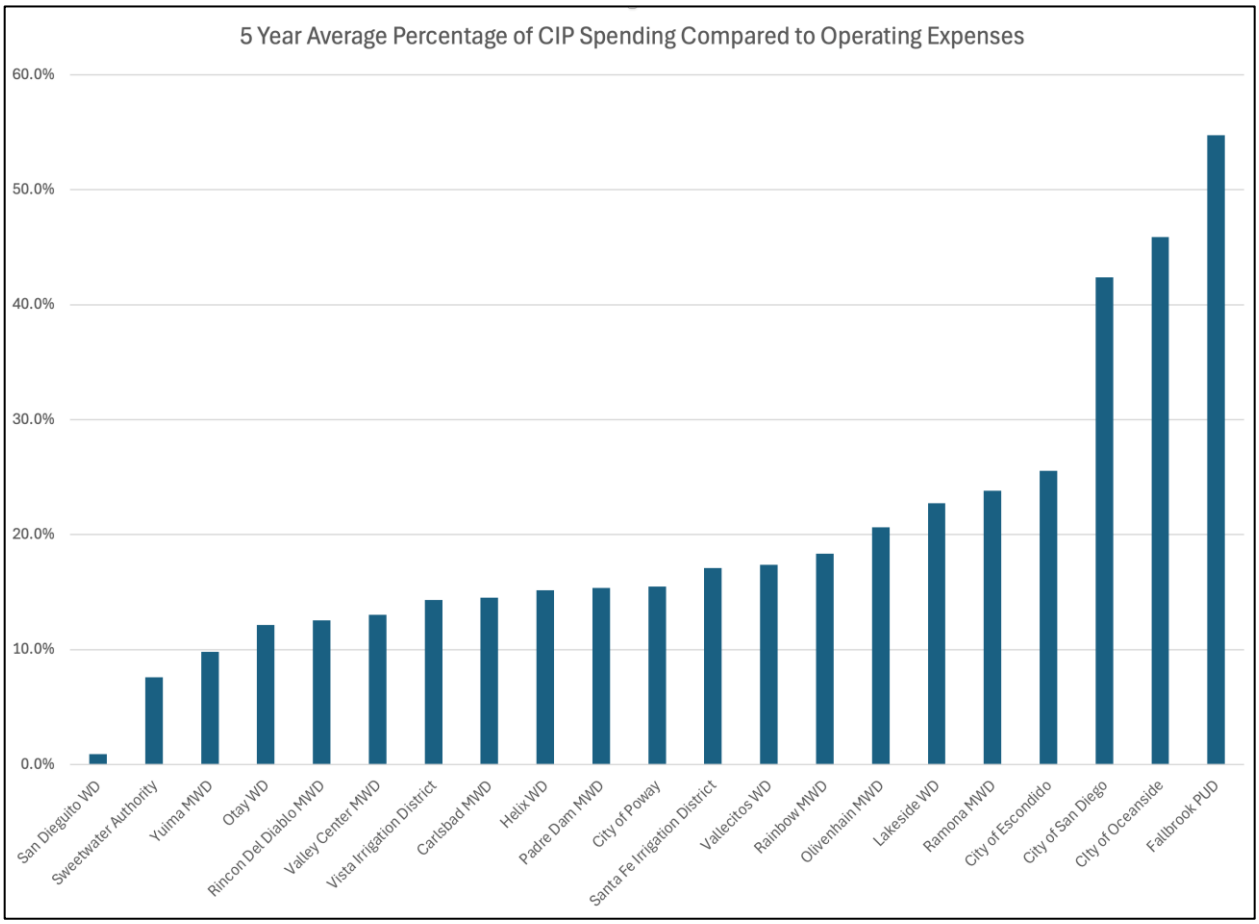
Another metric that can provide some insight in tandem with the CIP to Depreciation ratio is a comparison of how CIP spending compares to operating expense. Operating expenses

represent all of the spending required to perform the municipal service of potable water for the agency. It includes purchasing, treating, and pumping water, along with labor, power, parts, administration, and everything else that goes into a functioning water agency.

As a general rule, larger agencies have larger operating expenses. This often correlates with larger distribution systems and thus larger needs for pipeline repair and replacement. However, many variables, including some of the key characteristics described above, contribute to operating expenses, so this general rule is certainly not a hard and fast rule.

Perhaps the most useful way to look at a comparison of CIP spending to operating expenses is how much an agency has committed itself to funding CIP programs. Except in high growth areas, most of the funding for CIP spending comes from water rates. Building up reserves for CIP spending requires a commitment on the part of the governing body to make the hard decisions required to set rates in a manner that funds these programs.

The chart below uses five-year average values to compare the percentage of CIP spending compared to operating expenses.



This chart shows an even wider range of values than the CIP to Depreciation ratio. In this analysis, Fallbrook PUD has the highest percentage at nearly 55% with the Cities of Oceanside and San Diego not far behind. Fallbrook recently completed an advanced water treatment facility and both San Diego and Oceanside are engaged in a similar effort. This explanation is an educated guess as the scope of this study did not allow for detailed reviews of actual spending.

At the lower end San Dieguito WD is spent less than 1% of their operating expenses on CIP programs during the review period. The average value is 20%, but the median is only 15.5%, indicating that a handful of larger agencies have distorted the average somewhat. It is entirely plausible that future calculations of these percentages will shift the order considerably as some agencies take on large projects and others complete them.

Taken together, if an agency is consistently on the lower end of both charts this should raise a flag for LAFCO review. San Dieguito WD is currently undergoing a Municipal Service Review and concerns about capital spending will be included in that report. Please note that subsequent to the MSR report period (2019-2023) San Dieguito WD has taken steps to increase capital spending.

Final Comments and Recommendations

With water bills skyrocketing with no end in sight, the subject of water rates and what to do about them has become a hot topic in many areas of California. This is especially true in San Diego County, where water rates are among the highest in the nation. What used to be an annoying monthly bill has become, for many, a bill that requires hard choices among working families.

The objective of this document was to outline why water rates vary from agency to agency so that the Commission and water agency ratepayers can understand the real-world factors that influence the cost in their communities. Unfortunately, there is no silver bullet that can magically reduce water rates.

In fact, as the data related to CIP spending indicates, there is wide variation in the way assets are managed. The challenge of rising rates frequently compels governing bodies to cut back on capital spending in order to keep rates as low as possible. While understandable, from a LAFCO perspective this may jeopardize the municipal service functions these agencies are required to fulfill in the future.

Taken as a whole, the information in this report indicates that in many, many cases water rates are too low to properly fund the CIP programs required to avoid service disruptions. While this is certainly an unwelcome conclusion, the fact is that few, if any, agencies fund

their CIP programs at a level that is anywhere near being able to replace their systems at a frequency that is commensurate with their expected lifespans. Most agencies will have replacement frequency measured in multiple centuries over the expected lifespans.

Yes, these systems are getting by now, but for how long? Will it be 10 years, 20 years, or more than 50 years before pipelines start failing faster than they can be replaced? Many agencies have no idea and are hoping for the best. Hope is not a strategy, to borrow a frequently used quote.

Given the financial challenges of funding CIP programs and its impact on water rates, what are the best options. This report offers two suggestions.

Suggestion 1: Advanced Asset Management Programs should be used

Many agencies have been developing Capital Master Plans and other CIP spending plans for decades. During the post war growth period, a good deal of this spending went to building out capacity in the water system to manage the new homes and businesses that were part of the growth of San Diego County. Some of those processes are still in place.

However, in an era where systems are mostly built out and capital spending will be shifting towards repair, replacement, and rehabilitation of assets, a new methodology is required. Several agencies in San Diego County have already adopted these processes and it can help focus the limited funds available in the most cost-effective way to ensure reliable provision of service.

There are several key components to advance asset management systems:

- A comprehensive GIS based asset registry is required. This database should include all assets, down to the smallest level of detail possible. The data should be routinely updated and must be rigorously checked for accuracy.
- A work management system that tracks asset failures by specific assets should be implemented. This system records asset failures over time and includes specific data on the reasons for the asset failure. For example, fire hydrants that leak after being run over by a car reflects an isolated incident rather than a systemic problem, but if they leak because their bolts have rusted out that may signal a systemic maintenance issue.
- Continuous assessments of asset condition should be integrated into everyday work practices. Every time an asset is looked at whether it be when a pipeline is exposed for a new connection or in response to a leak, agency staff should make specific notes on the asset condition. This is not a one-time thing; assets that looked fine five years ago could be ready to fail today. Colleting this data over time is important.

- Using the data collected from the systems above, each agency should use failure history and condition assessments to rank each asset in the asset registry by its relative probability of future failure. While age is a factor in asset failure, it is frequently not the deciding factor. Soil corrosivity, a bad contractor who installed a faulty line, and many other factors cause some pipelines to fail well before their expected lifetimes. Using this type of system, agencies can proactively predict which assets are most likely to fail and direct scarce CIP funds toward preventing those failures.
- Agencies should also factor in the consequence of failure. The failure of a big transmission main could put thousands of customers out of service, while a small lateral in a cul de sac may only affect a handful. While the loss of service to any customer is a problem, avoiding larger regional outages must take priority. When combined with a probability of failure evaluation this becomes a very powerful tool to avoid the worst outcomes.

Suggestion 2: The way capital assets are funded should be reevaluated by the State Legislature

As noted above, retail water agencies are hamstrung by multiple forces. They bear the burden of spending decisions by wholesale agencies, and in most of San Diego County that means two wholesale agencies. Decisions are made that are far removed from the people who pay these bills.

In addition, voter approved initiatives, while well intended, have created a situation where water agencies have almost no flexibility on how to apportion costs. This has created a system of rates and charges that are generally regressive. Lower income families pay a much higher percentage of their available spending power on water bills than do higher income families.

Under the current legal landscape, agencies have limited options to fund asset management. As a result, it is up to the State Legislature to take action to allow water agencies to recover some of these costs through a dedicated line item on annual property assessments. This is not a tax, but a fee. Wastewater agencies for decades have been given this option and many in San Diego County recover all their costs as a fee collected by the San Diego County Assessor.

Will this reduce the total cost paid by the public for water? No – but it will distribute those costs in a more equitable manner. More importantly, if also applied to the large regional wholesalers, those agencies will collect their money directly, not through the cash registers of small local agencies. Multiple billions of dollars of costs are sent by wholesalers down

to retail agencies to include in their water bills each year in Southern California. If these agencies were to collect their fees directly it would have two significant benefits.

First, with the burden of wholesale agencies costs lifted from their budgets, local agency rates would drop immediately. Agencies would not have to cut planned CIP projects because of an unexpected increase from their wholesale agencies. Lower income customers who are not landowners would benefit most, though some landlords may use this change to justify rent increases.

Secondly, the big wholesale agencies would become directly accountable to the public, often for the first time. Where these big wholesale agencies now operate in mostly empty board rooms, concerned customers who see proposed increases in this new fee system will engage directly, rather than taking it out on the local body that had no option but to pass through those costs. With any luck, this may provide a new focus on budgetary constraints at these large wholesale agencies.