Appendix N
Case Study on Integrated Rate Design and Communication
Moulton Niguel Water District

District Background

Moulton Niguel Water District (MNWD) provides water, wastewater, and recycled water services to approximately 170,000 people within the Cities of Laguna Niguel, Laguna Hills, Aliso Viejo, Mission Viejo and Dana Point in South Orange County. The MNWD service area is 100% dependent on imported water from Metropolitan Water District of Southern California.

The annual potable demand is approximately 29,000AF; 25% of total demand is met from the reuse of imported water. MNWD has been very proactive in conservation and water use efficiency over the years. Fiscal year 2014-2015 (the District is on a July to June fiscal year) has the lowest potable water usage on record since 1991.

The total annual budget (including operations/maintenance and capital improvement projects) is $126 Million for FY 2014/2015. The key sources of revenues are water, wastewater, and recycled water rates and ad valorem property tax. MNWD has a strong financial position, receiving an "AA+" rating from Standard & Poors and "AAA" from Fitch. Unlike most agencies in California, MNWD has not increased its rates at regular intervals, having only 7 rate increases over the last 30 years.

Historical Tiered Rate Structure and 2009 Drought Response

MNWD historically has had a tiered rate structure with five tiers which had a modest price increase from Tier 1 to Tier 5. In 2009, MNWD sought to aggressively respond to drought restrictions and consequent wholesale allocation reductions from the Municipal Water District of Orange County using an enforcement-oriented approach. Mandatory watering days were enforced, and violators were issued fines after several warnings. To manage this effort, MNWD increased its staffing by about 12 full-time employees and issued approximately 20,000 warning letters and violations. One result of limiting the days a customer could water is that some people overwatered on the days that they were allowed to irrigate: nullifying the District's attempt to save water. Additionally, the enforcement effort resulted in customer backlash because of resentment of the District acting as "water cops," and was perceived as telling customers how to manage their own private property.

Changing to Water Budget Based Rate Structure

The decision to adopt a Water Budget Based Rate Structure (WBBRS) was a result of our experience in 2009 with mandatory restrictions. Implementing a WBBRS has resulted in a more efficient use of water. An econometric modeling study in 2014 demonstrated that our WBBRS accounted for an approximate 20% reduction in water usage since 2007, the year in which the District experienced the highest demand in its history. At a public hearing in February of 2015, MNWD adopted the new water budget rate structure, which included rate increases for the next three years.

Planning for the Rate Change Process

MNWD began to evaluate increasing and restructuring its rate structure in March of 2014. However, the planning and preparation started much earlier. To prepare for future rate increases and rate structure modifications, we involved staff from all levels of the organization. In addition to internal feedback solicitation, we sought input from customers and communities to identify areas of improvement for the

future. We evaluated numerous aspects of the rate implementation process to ensure the WBBRS's success, including: planning, roll-out, internal and external communication, public education, timing of rate adoption, financial implications, legal considerations, creating clear messaging and ongoing resource needs.

MNWD also looked at other agencies' experiences with their own rate structures to see what could be learned. We paid close attention to litigation and legal opinions, including the Capistrano Taxpayers Association v. City of San Juan Capistrano case, a suit which had been filed against a neighboring city. Based on our own experience and others' experiences, we knew that not only did we have to meet the legal requirements of the Proposition 218 process, but we had to make sure that the public could understand what we were proposing with our rates and that we needed to establish a comprehensive administrative record that described and clarified the rate setting process. We needed to understand the impacts to customers, have clear rationales to justify the changes, and have extensive outreach to ensure a successful rate adoption.

Another important step that MNWD took was to bring rate analysis expertise in-house rather than relying on consultants every three to five years when rates are typically reviewed. The in-house resource has allowed for ongoing monitoring and evaluation of the rate structure which has allowed for continuity and flexibility in responding to changing conditions and financial needs.

Customer Communication

When the Governor declared the drought emergency in January of 2014, MNWD saw it as a great opportunity to increase awareness and focus the public interest on water in order to implement good policy. We knew that people held a high value for water because of its scarcity, and the timing was right to further promote water efficiency and to prime our customers for future needs and ensure a reliable water supply.

Additionally, we were able to utilize the water efficiency funds, which are collected from inefficient users in the over-allocation tiers, to partner with cities and school districts on large turf removal projects and provide several million dollars in funding to create long term savings and encourage behavioral shifts to less thirsty plants. These visible partnerships helped the customers understand the value of WBBRs in allowing us to invest in our communities and help them respond to the drought.

In addition, we wanted to implement our new rates in spring instead of in summer. Rate increases/changes during summer, when water usage is at its highest, could result in significant increases to customer bills; instead, in the cooler season, the customers have a chance to get used the rates and adjust their usage accordingly.

To add to the momentum, when the State Water Resources Control Board mandated the drought emergency regulations, we saw an unprecedented level of public attention to water statewide. We saw this as yet another opportunity to demonstrate the value of WBBRS to our customers. Part of the emergency regulations required enforcement of restricted watering days. Based on our 2009 experience, we knew this approach would be counterproductive in our service area. We communicated our concerns to the SWRCB and were allowed to submit an Alternate Plan, which was approved and allowed us to continue with our water efficiency programs and plans to further our efforts. This was a great message to our customers who appreciated being able to take responsibility into their own hands in conserving water. They also recognized that WBBRS is an effective and sustainable tool to manage demand. MNWD was only one of two agencies in the State to have its Alternate Plan approved.

Incorporation of a Water Shortage Contingency Plan
MNWD's new rate structure includes the ability to respond to drought conditions by incorporating a Water Shortage Contingency Plan (WSCP). The inclusion of a WSCP allows MNWD to modify allocations during times of droughts or other emergencies without conducting another Prop 218, resulting in the ability for more immediate action when it's needed. Additionally, the gallons per capita per day indoor factor and the plant factor for the outdoor water budget were lowered in the normal condition rate structure to further encourage long-term water efficiency in the District.

Long Range Planning Effort
We knew that having a long range financial plan that forecasted MNWD's need for the next ten years would serve as the foundation for any future rate discussions. Also, a better understanding of reliability projects based on the service area's future needs would help to define the required funding to ensure continued reliability. Staff and consultants worked together to develop a long range water reliability plan to study future demand, risks associated with system and supply, and potential projects that should be considered to enhance reliability. We also revised our reserve policy to make sure that reserve targets and funding levels were designed to offset current volatility to mitigate risk in the face of drawing down reserves. Part of the plan included utilizing funds from the reserve to mitigate the short-term rate impact.

Project Team
When the official rate review started, the first step was to get a strong team together. We knew from the past that it was critical to involve staff members from various departments and from all levels. It was important to understand the experience and insight of customer service representatives who dealt with customers daily, the conservation group, and finance and management. In addition to in-house rate experts, MNWD also hired a consultant to work with staff to ensure a comprehensive effort. From day one, MNWD involved a legal advisor who is an expert on Proposition 218, Article X of the State Constitution and the legal precedents for water utility rates. Legal review and guidance occurred every step of the way, to ensure a justifiable and defensible cost of service and rate design. The finance group worked with a financial consultant and across all levels of staff and departments to develop a detailed and comprehensive cost of service, which led to a rate design that will strengthen the financial stability of MNWD while incentivizing water use efficiency.

The team closely reviewed MNWD's existing rates, identified lessons learned, and researched various legal cases against rates so we knew what pitfalls to avoid in structuring our rates.

Crisis as Opportunity
Some agencies thought that increasing/modifying rates during a drought emergency would create additional challenge in garnering public support. MNWD saw it as an opportunity to showcase how well WBBRS works and the benefits of the rate structure for the community. The fact that the price of water goes up especially during drought when supply is scarce made sense to the customers.

We also utilized news stories about major line breaks because it reminded the public of the importance of repairing and replacing infrastructure now to avoid even greater costs in the future. We helped our customers understand that water purchases and capital improvement projects are the major drivers of rising costs. The need to spend money to maintain our infrastructure to avoid major failures that cause service disruptions and significant damage to private properties was also understood by our customers.

Legal Guidance

Having legal guidance and involvement throughout the process was critical. Having the team understand the legal implications as well as having legal counsel familiar with MNWD and its operations made the process collaborative, resulting in everyone working together and ensuring buy-in every step of the way. The approach also gave the Board of Directors the assurance that we were going above and beyond the minimum to develop a rate structure that supported our needs and could withstand any potential legal challenges. The cost of service study and rate design consisted of more than numbers and technical information to support the proposed rates. The importance of having a comprehensive and extensive administrative record was clearly demonstrated by various legal challenges so our approach to the cost of service study was to make it clear, easy to understand, educational, and informational. Those who criticize and decide on the merits of rates are not water experts, so it was critical that the supporting material of the rates were developed and written so that anyone could review and understand what's contained in them. The same philosophy applied to the Proposition 218 notice. Rather than simply taking the legal minimum requirement approach, the notice included information about the drought to provide context for why the rates were being proposed. The assistant general manager was listed as the contact in the notice so that anyone who called with questions and/or concerns wouldn't be routed to different departments based on their needs, and in addition, with each call, we would take advantage of the opportunity to help better inform customers about various water related issues. Staff also sat down with anyone interested to address concerns of the rate changes.

Importance of Customer Outreach

While the customers may not be happy with the rate increase, they were very appreciative of the level of customer service they received. Customers who had received this high level of service complimented the District on the way the District handled the rate process during the rate hearing.

MNWD remains committed to early, proactive and frequent communication with its customers, and we realize that we should approach our outreach on rates in the same manner. Leading up to the rate review, we built positive relationships with cities, civic groups and community based organizations, which was integral in establishing trust which is invaluable when raising rates. When we started the rate study, we went to the cities served by MNWD and presented to both city council and city staff. We also incorporated our plans for the rate study to our speaker's bureau program and every speaking engagement staff attended over the course of the study. We met with the cities and our highest water users so they could understand how the rate increase and structure change would impact their bills. We held numerous board meetings to discuss our plans and progress during the rate study in a public forum to provide transparency. Every month, the board was given an update on the rate study in addition to special meetings and workshops to facilitate focus and discussion on rates. MNWD's Citizens Advisory Committee (CAC) was also updated so that we could obtain feedback and the CAC members could help spread the word to their various community contacts. Several of the CAC members spoke in support of MNWD at the public hearing. We continued to communicate until people told us that they got all the information they needed; they appreciated our outreach efforts and applauded our commitment to transparency.

Public Hearing
Our diligence never stopped. Leading up to the public hearing, MNWD received 16 letters of protest from the 170,000 people we serve. Even with so little protest, we planned for the public hearing. The Board President, who presided over the hearing, was given a script developed with legal counsel that included all the pertinent information. The team had their roles in presenting the information as well as responding to the board or members of the public. At the day of the meeting, approximately 30 members of the public attended, and many came to support the new rates. Of the 13 people who spoke, only 4 spoke in disfavor of the rates. The hearing concluded with the board adopting the proposed rate structure, which took effect April 1, 2015.

New Rate Structure
Moving forward, demand management continues to be regarded as our core function. We've restructured our organization to enhance integration of all departments to center around demand management as a District-wide responsibility and commitment, not just something that management and conservation departments are tasked with. The new rates ensure the following:

- Those who place the greatest demands on the system pay for the cost associated with that demand;
- Those who use water inefficiently pay at a higher rate than efficient users to collect the proportionate cost of efficiency programs to maintain a reliable water supply for all;
- The funds from higher rates are used to further incentivize efficient use and support demand management strategies;
- In times of drought or other emergencies impacting supply, inefficient users are first to be penalized under the water shortage contingency plan;
- The water shortage contingency plan is integrated with the rate structure to avoid the necessity of a new Proposition 218 notification to change allocation in a drought or other emergencies to be more responsive and adaptive;
- The water shortage contingency plan was adopted as an ordinance to allow for penalties to be applied for the inefficient use of water;
- Wholesale costs for imported water and sewer treatment are built in as a pass-through for the next five years;
- Fixed cost recovery is achieved, improving financial stability regardless of water sales;
- A rate structure that's more effective and cost-effective for our service area in promoting efficient usage better than mandatory restrictions.

Looking Forward
We plan to have ongoing discussions about rates because the more we communicate and review, the better everyone can understand. We are already preparing for the next rate study by doing additional planning, including a comprehensive asset management plan. We continue to build on the relationships and partnerships in our region and participate in statewide efforts to encourage the public's understanding of rates.

Despite litigation challenging rate structures, particularly the ones involving budget based rate structures, MNWD has had a positive and successful rate hearing process. The success of the recent rate adoption is credited to the staff who turned crisis into an opportunity by applying valuable lessons learned, tackling challenges with enthusiasm and creativity, while dedicating themselves to earn the respect and trust of the customers.

Every agency is different because the communities and customers we serve are unique. There is no one-size-fits-all strategy or structure. Knowing your customers and having relationships in place are what makes any rate review successful. Rates are not something to be reviewed or discussed every handful of years; it's a constant discussion and ongoing education for MNWD.

Appendices to Moulton Niguel Rate Case Study

Appendix 1 Rate Study Report
Appendix 2 New Rate FAQs
Appendix 3 Outreach Materials
Appendix 4 Board Ordinance

February 6, 2015

Ruth Zintzun
Finance Manager
Moulton Niguel Water District

MWH Global is pleased to provide this system-specific financial plan, cost of service, and rate design recommendation report (Rate Study Report) for your review and comment.

This Rate Study Report encompasses a great deal of effort from not only MWH Global, but also from you and your staff. We are very thankful for the time and dedication put into the study by the Moulton Niguel Water District. Our efforts were completed using standard cost allocation and rate setting principles published in the case of water utilities by the American Water Works Association.

The enclosed Rate Study Report is a comprehensive but not exhaustive description of our analysis and findings. The Rate Study Report body is meant to provide the overall information and describe the basis for our findings.

Sincerely,

Mark Hildebrand

Project Manager

Executive Summary[1]

Moulton Niguel Water District ("District" or "MNWD") engaged MWH Global to study the District's water, recycled water, and wastewater utility costs and develop recommendations for adjusting the rates to reflect the District's cost of providing service to specific classes of customers. The Rate Study Report presents the aggregated findings of the District's Long-Range Financial Plan, the cost-of-service study, and the rate design study, culminating in a recommendation for three-year rate schedules for each of the District's three systems.

MWH Global used standard water and wastewater ratemaking practices to calculate the proposed rates as described by the American Water Works Association (AWWA) and the Water Environment Federation (WEF), respectively. The basis for the proposed rate schedules follows industry-accepted cost-of-service principals and complies with all State of California law requirements. The proposed rates are designed to meet current and future revenue needs.

General Overview of Methodology

This project followed three major phases:

1. Financial Planning compares the overall revenues of each of the District's individual Systems to their overall revenue requirements in order to determine the rate adjustments needed over a multiyear period. This Rate Study Report repeats information also provided in the District's Long Range Financial Plan report.
2. Cost-of-Service Analysis proportionally allocates the revenue requirements for a specific System among the respective Systems various customer classes.
3. Rate Design determines how rate revenues will be collected from the respective customer classes in a manner that respects the results of the cost-of-service analysis while also addressing District goals and objectives for pricing, and impacts to customers.

The methodologies above are consistent with industry standards established by the AWWA, Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1 (the "M1 Manual"). Each of the above steps are described in more detail in the complete Rate Study Report.

Financial Plan

The District developed a long-range financial planning model ("10-Year Cash Flow Model") which projects the District's future expenditures in order to calculate the required rate revenue. The results from the model are presented in detail in the District's Long Range Financial Plan. The 10-Year Cash Flow

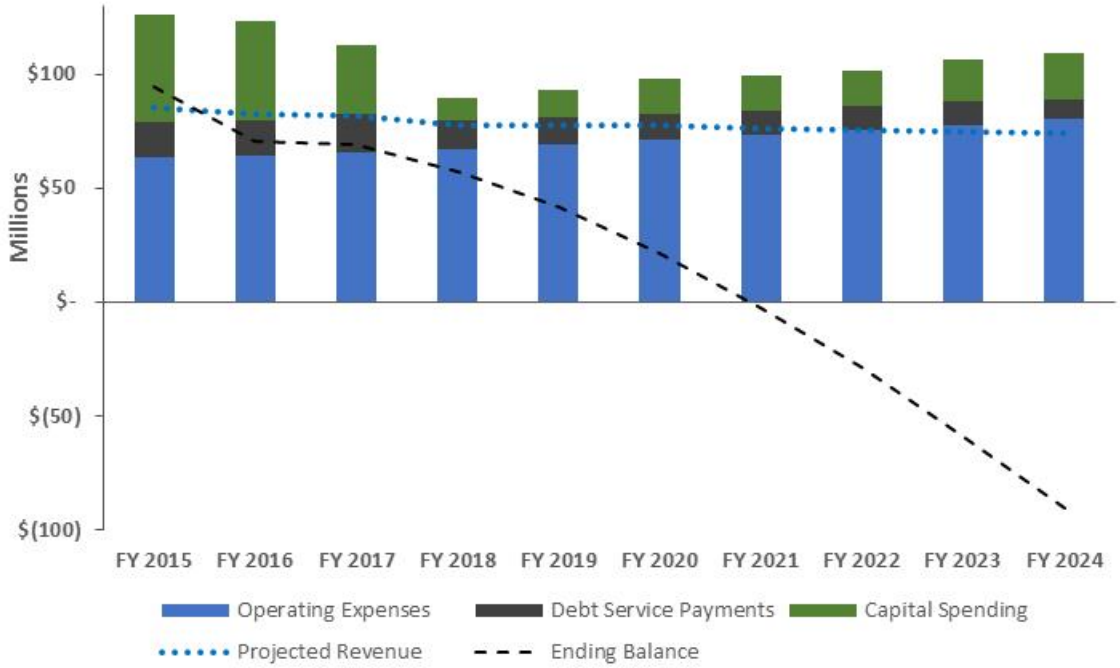
[1] This Executive Summary does not include important details regarding the methodology used in calculating the recommended rates. Those details were provided as part of the complete Rate Study Report.

Model considers the costs of operations and maintenance (O&M), capital, and debt, while also accounting for non-rate revenue, rate revenue, reserve targets and financial performance metrics. The Long-Range Financial Plan respects the District's financial policies with respect to its debt coverage ratio (the ratio of revenues net of expenses relative to the annual debt service) and reserve policies.

The 10-Year Cash Flow Model uses the most recent audited financial information and Board adopted budgets for the study period. Cost inflation assumptions were applied to specific expenditure categories, including assumptions regarding the future costs of water supply. The District's revenue requirements were organized into four components: O&M costs, capital costs (cash and debt service), reserve requirements and debt service coverage requirements.

The following figure provides a 10-year forecast of the District's General Fund projected total revenue requirements as compared to projected revenues.

General Fund Revenue and Expense Projections – No rate adjustment



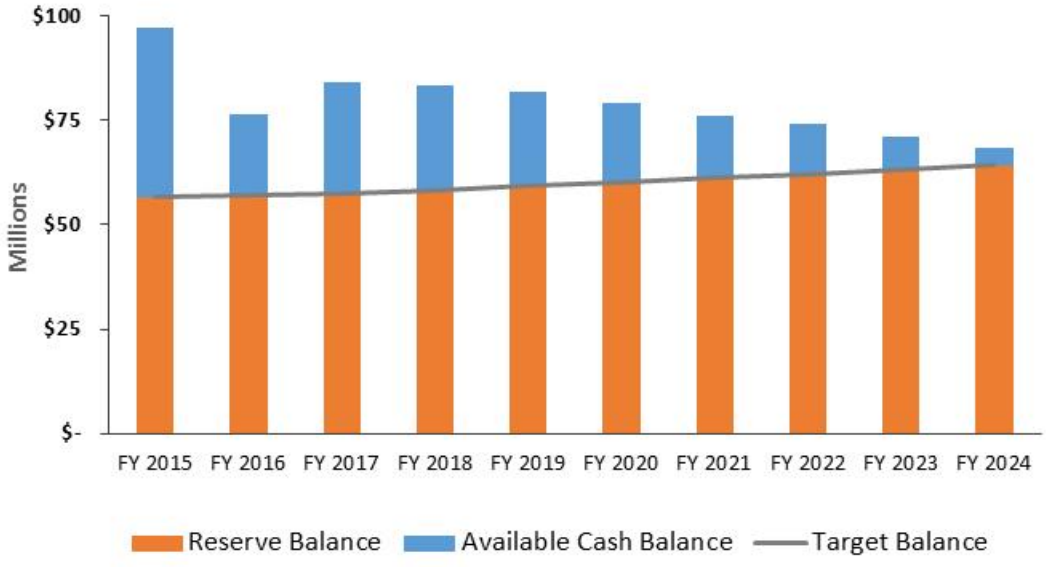
This Rate Study Report recommends a financial strategy that includes a combination of drawing on unrestricted cash and issuing debt in order to minimize rate adjustments and smooth out the costs of the immediate capital program in order to meet the revenue requirements. The rate adjustments are summarized below.

Summary of General Fund Rate Adjustments

Implementation Day	General Fund Rate Adjustment			
	Water System	Recycled Water System	Wastewater System	Overall
April 1, 2015	5.9%	5.9%	9.0%	7.0%
July 1, 2016	5.6%	5.6%	9.5%	7.0%
July 1, 2017	4.6%	4.6%	5.6%	5.0%
July 1, 2018	3.7%	3.7%	4.6%	4.0%
July 1, 2019	3.7%	3.7%	4.5%	4.0%
July 1, 2020	3.7%	3.7%	4.5%	4.0%
July 1, 2021	3.7%	3.7%	4.5%	4.0%
July 1, 2022	3.7%	3.7%	4.5%	4.0%
July 1, 2023	3.7%	3.7%	4.5%	4.0%
July 1, 2024	3.7%	3.7%	4.5%	4.0%

This strategy consists of drawing down on cash reserves to fund near-term capital spending and issuing Certificates of Participation (COPs) worth $30 million in 2017 to fund capital projects. Throughout the 10-year planning period the District's reserve levels will be, at a minimum, maintained at targets adopted in the District's Reserve Policy. The figure below provides a 10-year forecast of the District's General Fund reserve levels based on projected financial outcome of implementing the above financial strategy.

General Fund Projection – Recommended Finance Strategy



The Water Use Efficiency ("WUE") Fund is managed independently from the General Fund.

Cost-of-Service Analysis

Cost-of-service ratemaking is a process of allocating a system's user-charge revenue requirements to customers based on their demands. Individual customer demands vary depending on the nature of the utility use at the location where service is provided. The demands placed on a water system by customers are measured in terms of the number of customers and their water demands, including average-day water use and peak water use. Peak usage is important because it dictates the required size of the District's distribution infrastructure. Joint costs are shared among all customers in the system proportionately based on their service requirements that drive costs; some specific costs are borne by specific customer classes based on the characteristics of that group alone. A customer class consists of customers that commonly create or share responsibility for certain costs incurred by the utility.

The District's Water System is made up of Single-Family Residential customers, Multi-Family Residential customers, Commercial customers, Irrigation customers, Construction Meters, and Private Fire Protection. The total rate revenue requirement is determined by combining the O&M and capital costs and subtracting the credits for non-rate revenues for each respective class. The values in the last column of the table below are the revenue requirements that were used when calculating the water rates for each customer class.

Rate Revenue Requirements - Water System

	(a) Total Capital Revenue Requirement	(b) Total O&M Revenue Requirement	(c) Non-Rate Revenue Credit	(d) Ad Valorem Tax Credit	(a)+(b)-(c)-(d) Total Rate Revenue Requirement	Allocate Public Fire Protection	Billed Rate Revenue Requirement
Residential	$7,747,545	$30,003,934	$4,982,763	$13,515,780	$19,252,936	$211,284	$19,464,220
Multi-Family	959,694	4,090,199	679,573	1,958,839	2,411,480	46,185	2,457,666
Commercial	1,058,423	4,500,881	712,090	2,027,145	2,820,070	33,590	2,853,660
Irrigation	1,991,608	6,565,780	1,086,637	2,817,341	4,653,409	28,439	4,681,849
Construction Meter	36,356	63,179	13,617	0	85,917	0	85,917
Private Fire Protection	205,990	1,026,849	168,665	0	1,064,174	179,474	1,243,648
Public Fire Protection	344,560	228,685	74,272	0	498,973	-498,973	0
TOTALS	**$12,344,176**	**$46,479,506**	**$7,717,618**	**$20,319,105**	**$30,786,959**	**$0**	**$30,786,959**

The table below summarizes the shift of cost responsibilities for water customers recommended by this study. The reduction in cost responsibility by the Multi-Family customers was driven by the customer class' low peaking requirements.

Water System Cost-of-Service Comparison

Customer Class	FY 2015 Cost-of-Service Allocation	Current Revenues	Difference	
Residential	$19,464,220	$18,594,448	$869,772	5%
Multi-Family	$2,457,666	2,936,975	(479,309)	-16%
Commercial	$2,853,660	3,025,084	(171,424)	-6%
Irrigation	$4,681,849	4,292,975	388,874	9%
Construction Meter	$85,917	65,027	20,890	32%
Private Fire Protection	$1,243,648	339,448	904,200	266%

Similarly, the total rate revenue requirements for Recycled Water are shown in the following table.

Rate Revenue Requirements – Recycled Water System

(a) Total Capital Revenue Requirement	(b) Total O&M Revenue Requirement	(c) Non-Rate Revenue Credit	(d) Ad Valorem Tax Credit	(a) + (b) - (c) - (d) Rate Revenue Requirement
$2,477,060	$5,226,827	$483,374	$1,529,395	**$5,691,118**

The methodology for allocating wastewater service costs is different from the cost-of-service methodology for water due to the fundamental difference in cost drivers. Customer characteristics for wastewater systems are measured in terms of estimated wastewater flows and sewage loadings. Sewage loadings are measures of the "strength" or concentrations of the wastewater being discharged to the wastewater system.

In addition to flow and strength, other costs drivers include bill processing, customer service, and other administrative services which are primarily driven by the number of customers connected to the collection system. The District's Wastewater System is made up of Single-family residential customers, Multi-family residential customers, and Commercial customers, which is subdivided into four categories based on sewage strength.

The total rate revenue requirement is determined by combining O&M and capital costs and subtracting the credits for non-rate revenues for each respective class. The values in the last column of the table below are the revenue requirements that were used when calculating the wastewater rates for each customer class.

Rate Revenue Requirements – Wastewater System

	(a) Total Capital Revenue Requirement	(b) Total O&M Revenue Requirement	(c) Non-Rate Revenue Credit	(a) + (b) - (c) Total Rate Revenue Requirement
Residential	$3,134,873	$10,701,223	$1,131,343	$12,724,556
Multi-family	736,766	2,312,820	249,041	2,800,545
Commercial 1	257,893	786,223	85,267	958,850
Commercial 2	194,690	618,636	66,419	746,906
Commercial 3	124,763	453,339	47,210	530,894
Commercial 4	66,325	251,328	25,937	291,896
	$4,535,514	$15,123,572	$1,605,438	$18,053,647

The table below summarizes the shift of cost responsibilities for wastewater customers recommended by this study. The reduction in cost responsibility by the Multi-Family customers was driven by the recognition of the customer class' low sewage loadings and high return-to-sewer ratio (which describes how much potable water is discharged back to a sewer drain).

Wastewater System Cost-of-Service Comparison

Customer Class	FY 2014 Cost-of-Service Cost Allocation	Current Revenue	Difference	
Residential	$12,724,556	$11,879,081	$845,476	7%
Multi-family	2,800,545	3,414,914	(614,369)	-18%
Commercial 1	958,850	619,451	339,398	55%
Commercial 2	746,906	451,985	294,922	65%
Commercial 3	530,894	242,356	288,538	119%
Commercial 4	291,896	132,354	159,542	121%

The District has a FOG program that is administered by a third party. The current FOG fees collect approximately $35 thousand per year, while this cost-of-service study found that the total cost of the program is actually $215 thousand per year. The District staff's intention is to update the FOG fees and apply them to all applicable accounts in the near future.

Rate Recommendations

The rates recommended by this study were designed in a manner such that they will comply with the cost-of-service results and addresses the District's pricing objectives. The recommended rate schedules are designed to recover the revenue requirement particular to a customer class such that each class pays its own proportionate share of costs of providing service for the respective utilities, and each customer within each customer class pays his or her portion of the proportionate share of the cost of service on a parcel basis.

This study recommends the following modifications to the existing Water and Recycled Water rate structures:

1. Reduce the indoor "gallons per capita day" allocation from 65 gallons to 60 gallons.
2. Reduce the outdoor water budget plant factor from 0.80 to 0.70 (except for recycled water and high public-use areas).
3. Create a 4-tier rate structure for Commercial, Irrigation, and Recycled water customers.
4. Make budget allocations for the (new) Tier 2 and Tier 3 for Commercial and Irrigation customers each equal to 25% of their budget.
5. Assign each Water customer class its own respective fixed Service Charge schedule.
6. Retain the same unit price for volumetric Water rates for all customer classes (excluding Recycled water).
7. All Water rate revenue in excess of $2.27 per hundreds of cubic feet (ccf), which is the District's marginal cost of water, will be designated for the WUE Fund.

The recommended FY 2015 rate schedule for Water and Recycled Water is summarized in the table below. The recommended rate schedule was designed in order to meet the cost-of-service results by customer class and by customer within each customer class. These costs were calculated using a complex rate model which calculated anticipated revenue based on the current water use patterns of existing customers.

Recommended Water and Recycled Water Rate Schedule – Effective April 1, 2015

Volumetric Rates ($/ccf)						Service Charge ($/month)					
Residential & Multifamily		Commercial & Irrigation		Recycled Water		Meter Size	Residential	Multifamily	Commercial	Irrigation	Recycled
Tier 1	$1.41	Tier 1	$1.61	Tier 1	$1.17	5/8"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 2	$1.61	Tier 2	$2.49	Tier 2	$1.66	3/4"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 3	$2.49	Tier 3	$4.25	Tier 3	$3.42	1"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 4	$4.25	Tier 4	$9.04	Tier 4	$8.21	1 1/2"	$35.97	$22.14	$19.78	$56.25	$56.27
Tier 5	$9.04					2"	$57.55	$35.43	$31.64	$90.00	$90.02
						3"	$125.89	$77.50	$69.21	$196.88	$196.93
						4"	$215.81	$132.85	$118.65	$337.50	$337.59
						6"	$449.96	$276.98	$247.39	$703.69	$703.88
						8"	$647.42	$398.54	$355.95	$1,012.50	$1,012.78
						10"	$1,043.43	$642.31	$573.67	$1,631.82	$1,632.26

The recommended monthly service charge and volumetric usage charge for private fire protection and construction meters for FY 2015 are provided below.

Proposed Private Fire Protection Rates – Effective April 1, 2015

Meter Size	Meter Equivalency Schedule	Current Rate ($/month)	Proposed Rate ($/month)
5/8"	1.00	$6.28	$3.58
3/4"	1.00	$6.28	$3.58
1"	1.00	$6.28	$3.58
1 1/2"	3.33	$9.42	$11.94
2"	5.33	$12.56	$19.11
2.5"	8.50	$15.70	$30.45
3"	11.67	$18.84	$41.80
4"	20.00	$25.12	$71.65
6"	41.67	$37.68	$149.27
8"	60.00	$50.24	$214.95
10"	96.67	$62.80	$346.31

Proposed Construction Meter - Effective April 1, 2015

Meter Charge ($/month)	$114.78
Volumetric Charge ($/ccf)	
Potable Water	$2.45
Recycled Water	$2.38

Using the results of the cost-of-service analysis, the following is the recommended wastewater rate schedule.

Proposed Wastewater Rate Schedule - Effective April 1, 2015

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"
Single Family Residential	$22.68	$22.68	$22.68	$22.68	$22.68	$22.68
Multi-family Residential	$24.72	$24.72	$24.72	$75.90	$119.77	$119.77
Commercial 1	$17.87	$17.87	$17.87	$53.05	$83.22	$83.22
Commercial 2	$38.07	$38.07	$38.07	$120.39	$190.96	$190.96
Commercial 3	$78.32	$78.32	$78.32	$254.54	$405.60	$405.60
Commercial 4	$84.49	$84.49	$84.49	$275.11	$438.53	$438.53

Meter Size	3"	4"	6"	8"	10"
Single Family Residential	NA	NA	NA	NA	NA
Multi-family Residential	$258.72	$441.52	$916.83	$1,319.01	$2,123.37
Commercial 1	$178.75	$304.43	$631.22	$907.72	$1,460.74
Commercial 2	$414.46	$708.50	$1,473.04	$2,119.93	$3,413.76
Commercial 3	$884.04	$1,513.46	$3,150.05	$4,534.81	$7,304.41
Commercial 4	$956.06	$1,636.92	$3,407.27	$4,905.21	$7,901.16

A complete 3-year schedule of the proposed Water, Recycled Water, and Wastewater Rates is provided with the complete Rate Study Report.

Conclusion

This rate study used methodologies that are aligned with industry standard practices for rate setting as promulgated by AWWA's M1 Manual and WEF, and all applicable law, including Proposition 218. The rate adjustments recommended by the Long Range Financial Plan are proposed to take effect on April 1, 2015. The District's water budget based rates have proven to be an effective demand-side management tool that allows the District to equitably share target usages by providing targeted messaging to the public regarding efficient water use, and proportionately allocating the costs of service to those who place the greatest demands on the system. These rates contribute toward the District's ability to comply with the requirements of the State's Section 865 Mandatory Actions by Water Suppliers and play a key role in the District's ability to achieve a level of conservation that is superior to that achieved by implementing limitations on outdoor irrigation of ornamental landscapes or turf with potable water. The adjustments to the Wastewater rates will provide revenue stability and continue to equitably and proportionately recover costs from the appropriate customers.

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1. Introduction

Moulton Niguel Water District ("District" or "MNWD") engaged MWH Global to study the District's water, recycled water, and wastewater utility costs and develop recommendations for adjusting the rates to reflect the District's cost of providing service to specific classes of customers, and to proportionately allocate the costs of providing service to each customer within their customer class.

The District is made up of three distinct utility services: (1) potable water distribution ("Water System"), (2) wastewater collection and treatment[2] ("Wastewater System"), and (3) recycled water distribution ("Recycled Water System"), collectively the "Systems". While the District has historically aggregated financial information across all utilities, this Rate Study Report provides specific financial information for each of the three Systems.

This Rate Study Report presents the aggregated findings of the District's Long Range Financial Plan, the cost-of-service study, and the rate design study, culminating in a recommendation for three-year rate schedules for each of the District's three Systems.

1.1. System Overview

The District was created in 1960 to provide a reliable water supply to south Orange County. In 1964, the District assumed wastewater services from the County of Orange. MNWD expanded to provide recycled water for irrigation in 1974. Today, MNWD provides water, recycled water, and wastewater service to over 170,000 people in South Orange County. The District's service area includes the Cities of Aliso Viejo, Laguna Niguel, Laguna Hills, and Mission Viejo, as well as portions of the City of Dana Point. All of the District's potable water supply is currently imported by the Metropolitan Water District of Southern California (MWD) and delivered to the District by the Municipal Water District of Orange County (MWDOC). The District operates and maintains over 700 miles of distribution pipelines and has 28 reservoirs on 18 sites located at the top of each of 7 pressure zones, for a total storage capacity of 70 million gallons (MG). The District also owns capacity in three potable water reservoirs operated by South Coast Water District, El Toro Water District, and Santa Margarita Water District, respectively. The District serves areas ranging in elevation from approximately 140 feet above mean sea level to approximately 930 feet above mean sea level, and has pump stations to pump water from the lower pressure zones to the higher-pressure zones. The Water System includes the following infrastructure and characteristics:

- 36.5 square miles of service area
- 26.2 million gallons per day (MGD) of water demand
- 53,312 water accounts

[2] While the District has an ownership stake in treatment facilities, the operations of wastewater treatment is provided by the South Orange County Wastewater Authority (SOCWA), a Joint Powers Authority consisting of ten agencies, including MNWD. The District owns and operates its wastewater collection system.

- 2,860 public hydrants
- 30 pump stations
- 20 pressure reducing stations and flow control facilities

The District is a member agency of the South Orange County Wastewater Authority (SOCWA), a joint powers agency comprised of ten governmental agencies. SOCWA owns and operates four regional wastewater treatment plants and two ocean outfalls. The District directly provides wastewater collection services to its customers, while wastewater treatment and discharge services are provided by SOCWA. The Wastewater System includes the following infrastructure and characteristics:

- 29 square miles of service area
- 50,627 accounts
- 22.7 MGD of wastewater treatment capacity
- 13.5 MGD average treatment demand
- 537 miles of wastewater pipelines
- 8,291 manholes
- 19 lift stations

The District owns and operates a Recycled Water distribution system, which receives Title 22 water from 2 separate SOCWA treatment facilities. The Recycled Water System includes the following infrastructure and characteristics:

- 1,274 accounts
- 2 Advanced Wastewater Treatment facilities
- 13.8 MGD treatment capacity
- 11 recycled water reservoirs
- 18.7 MG of water storage
- 180 miles of recycled water pipelines
- 12 recycled-water pump stations
- 2.7 billion gallons of water per year saved

1.2. Purpose of the Study

The purpose of this study is to assess MNWD's changing rate revenue requirements. Historically (over the past decade), MNWD had average annual potable water sales of approximately 30,500 AF and recycled water sales of approximately 7,500 AF. The current five-year average potable sales are 26,600 AF, with each of the last three years below the five-year average. The current five-year average recycled water sales are 6,800 AF. Such changes in water consumption patterns impacts the District's water sales revenues. In addition, the District's Capital Improvement Program (CIP) has transitioned to largely repair and replacement of assets, as opposed to construction of new facilities to meet new growth. The CIP results in approximately $230 million of forecasted expenditures over the next 10 years. This increase in

capital spending over historical amounts will impact the District revenue requirements. In addition, the study looked at the potential impacts of future growth and water conservation on District revenues.

1.3. Project Methodology

MWH Global used standard water and wastewater ratemaking practices to calculate the proposed rates as described by the American Water Works Association (AWWA)[3] and the Water Environment Federation (WEF), respectively. The basis for the proposed rate schedules follows industry-accepted cost-of-service principals and complies with all State of California law requirements. The proposed rates are designed to meet current and future revenue needs.

This project followed three major phases:

1. **Financial Planning** compares the overall revenues of each of the District's individual Systems to their overall revenue requirements in order to determine the rate adjustments needed over a multiyear period. This Rate Study Report repeats information also provided in the District's Long Range Financial Plan report. The revenue requirements methodology used in this Rate Study Report is consistent with industry standards established by the AWWA, Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1 (the "M1 Manual"). The study's revenue requirements analysis "[c]ompares the revenues of the utility to its operating and capital costs to determine the adequacy of the existing rates to recover the utility's costs[4]." The revenue requirements are analyzed through the development of a long-term financial plan. Based on the best information currently available, the current financial plan incorporates projected operations and maintenance costs, capital expenditures, debt service, growth, and conservation assumptions to estimate annual revenues.

   The **Cost-of-Service** analysis proportionally allocates the revenue requirements for a specific System among the respective Systems various customer classes. Following the determination of revenue requirements, the Study arranged the costs, expenses, and assets of each System by major operating functions to determine the cost of service. After the assets and the costs of operating those assets were properly categorized by function, the Rate Study Report classifies them and allocates the revenue requirements to the various customer classes (e.g., single-family residential, irrigation, and commercial) by determining the characteristics of those classes and the customer class' contribution to the incurred costs, such as peaking factors or different delivery costs, service characteristics and demand patterns for water service. This analysis included a review of such matters as system operations and water usage data—e.g., capacity (peak demand),[5] commodity (average demand),[6] number of customers,[7] customer service and accounting,[8] equivalent meter size, and public fire

[3] AWWA's "M1 Manual" documents many of the standards used by professionals in the water utility rate-setting industry.
[4] Per AWWA's M1 Manual, 6th ed. 2012
[5] System capacity is the system's ability to supply water to all delivery points at the time when demanded. It is measured by each customer's water demand at the time of greatest system demand. The time of greatest demand is known as peak demand. Peak demand costs recover the costs of facilities needed to meet the peak use, or demands, placed on the system by each customer class. Both the operating costs and the capital assets related costs incurred to accommodate the peak flows are allocated to each customer class based upon the class's contribution to the peak day event.
[6] Commodity refers to the amount of metered water usage over a specific time period, typically a twelve-month period.
[7] Some operating and administrative costs vary directly with the number of customers.

protection services.[9] The impact that these matters have on system operations determined how the costs were allocated among the various customer classes.

The final part of the analysis, **Rate Design**, determines how rate revenues will be collected from the respective customer classes in a manner that respects the results of the cost-of-service analysis while also addressing District goals and objectives for pricing, and impacts to customers. The rate design involved developing a rate structure that proportionately recovers costs from customers within the identified customer classes. The final rate structures and rate recommendations are designed to fund each of the utilities' long-term projected costs of providing service; proportionally allocate costs to all customers; provide a reasonable and prudent balance of revenue stability while encouraging conservation; and comply with the substantive requirements of California Constitution article XIII D, section 6 ("Article XIII D").

Each of these steps is described in more detail below and in this Rate Study Report.

1.4. Intended Use and Users of this Rate Study Report

This Rate Study Report is intended to provide a summarized discussion of the analysis developed by MWH Global in completing the associated rate study. As such, this Rate Study Report explains our methodologies, materials considered, key assumptions, findings and recommendations. No other use is intended or implied. The Rate Study Report and its contents are the property of MNWD and the District is the only intended user of the Rate Study Report. MNWD may choose to distribute this Rate Study Report to others. However, the Rate Study Report itself was prepared solely for the use of MNWD.

The body of the Rate Study Report is meant to be a summarized narrative of the technical analysis completed by MWH Global during our study.

1.5. Sources of Information Used in this Rate Study Report

We have reviewed a number of documents provided by MNWD during the course of our study. Where applicable, we have made a works-cited notation indicating the source and date of the documents within the body of this Rate Study Report. A summary of the key information reviewed for all three Systems includes, but is not limited to:

- Detailed line-item budget for Fiscal Year(FY) 2012, FY 2013 & FY 2014
- Long Range Financial Plan, dated November 2014
- Ten-Year Capital Improvement Plan
- 2011 rate study report
- Comprehensive Annual Financial Report (CAFR) for FY 2011, FY 2012, and FY 2013
- Customer billing data by customer class for FY 2012, FY 2013, and most of FY 2014 from the District's billing database

[8] Some customer classes may require more effort and time to provide accounting services.
[9] This refers to the need to increase the size of mainlines to provide public fire protection requirements.

- Historic water and wastewater plant production
- Comprehensive list of District assets as of April 2014
- Potable and recycled water flow reports FY 2009 to FY 2014 (partial)
- Debt repayment schedules
- Reserve policies (adopted August 2014)
- "FOG" (Fats, Oils & Grease abatement) program costs and list of registered accounts
- SOCWA audited financial statement FY 2013
- SOCWA Budget FY 2015

Each of these documents is incorporated by reference into this Rate Study Report.

1.6. Acronyms

AF	acre-foot
AWWA	American Water Works Association
BOD	biochemical oxygen demand
ccf	hundreds of cubic feet
CIP	Capital Improvement Plan
COP	Certificates of Participation (debt instrument)
CPI	consumer price index
FEMA	Federal Emergency Management Agency
FOG	fats, oils & grease
FY	fiscal year ending June 30
GO	General Obligation (bond type)
gpm	gallons per minute
gpcd	gallons per capita per day
JRWSS	Joint Regional Water Supply System
lbs	pounds
MG	million gallons
mg/L	milligrams per liter
MGD	millions of gallons per day
MOU	memorandum of understanding
MNWD	Moulton Niguel Water District
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
O&M	operation and maintenance
R&R	Replacement and Refurbishment
SOCWA	South Orange County Water Authority
TSS	total suspended solids

WBBRS	water budget based rate structure
WEF	Water Environment Federation
WUE	Water Use Efficiency

2. Financial Plan

The District's stated vision is to "lead the way, work together, and provide excellence in service". The District is a community-oriented utility dedicated to serving its customers and the environment with reliable, economical, and high-quality water and wastewater service. The financial planning associated with this Rate Study Report furthers these goals by developing rates that support the District's financial goals and policies.

The District has developed a long range financial planning model ("10-Year Cash Flow Model") which projects the District's future expenditures in order to calculate the required rate revenue for a ten-year period. As detailed below, the 10-Year Cash Flow Model considers the costs of operations and maintenance (O&M), capital, and debt, while also accounting for non-rate revenue, reserve targets and financial performance metrics. The following subsections provide financial planning information over the next ten years for all three Systems.

2.1. Capital Financing Policies

The District's policy is to manage rates and debt levels such that the District's overall "debt coverage ratio" (the ratio of revenues net of all expenses relative to the annual debt service) can be maintained above a target of 1.75, with a minimum of 1.25 as required by bond covenants. Maintaining a coverage ratio at the target level allows the District to keep a strong credit rating, which in turn gives the District the ability to borrow at low interest rates. Historically, the District has maintained debt coverage ratios in excess of 2.00 and is currently rated AA+ by Standard and Poor's and AAA by Fitch Ratings.

It is important to understand that the District measures its debt coverage ratio at the District level (as opposed to tracking the debt coverage ratio of the individual Systems). For this reason, the debt coverage ratio is not discussed in this Rate Study Report at the System level.

2.2. Reserve Policies

The District has adopted reserves in order to mitigate potential revenue and expense volatility and reduce the risk of requiring unplanned, large rate adjustments. The reserve policies help to maintain the District's credit-worthiness by adequately providing for:

- Economic uncertainties, extraordinary costs, and other financial impacts;
- Revenue uncertainties, such as loss of property tax receipts, connection fees or water sales;
- Disasters or catastrophic events;
- Losses not covered by insurance;
- Compliance with debt obligations;
- Working capital requirements; and
- Funding designated infrastructure replacement and refurbishment.

The District's Reserve Policy was last updated in August 2014.

2.2.1. General Reserves

The following are the District's general reserves.

General Operating Reserve - The General Operating Reserve provides liquidity for funding day-to-day operating expenses. The General Operating Reserve supports the District's cash flow needs during normal operations and will mitigate or eliminate the risk of monthly shortfalls due to the delay between the receipt of revenues and the payment of expenses. The target amount of the General Operating Reserve is equal to four (4) months of operating expenses, allowing for both monthly and bi-monthly cash flow fluctuations.

Self-Insurance Reserve – The Self-Insurance Reserve funds property and liability insurance deductibles, losses exceeding insurance limits, and unemployment claims. The target level of Self-Insurance Reserve is equal to five times the current Joint Powers Insurance Authority (JPIA) property insurance deductible (the current deductible is up to $50,000). The Self-Insurance Reserve is maintained in the District's General Fund.

Rate Stabilization Reserve - Since one of the District's biggest financial risks would be a loss of property tax revenues, the District has a Rate Stabilization Reserve to provide for losses of revenue (both rate and non-rate revenue), significant increases in water purchase costs, and other extraordinary financial impacts to revenues and expenses. The Rate Stabilization Reserve target level is set equal to fifty (50) percent of the District's 1% ad valorem property tax revenue. The Rate Stabilization Reserve is maintained in the Rate Stabilization Fund.

2.2.2. Capital Improvement Reserves

The Replacement and Refurbishment (R&R) Reserve and the Emergency Reserve constitute the District's Capital Reserves. Key objectives for accumulating these Reserves are to fund projects identified in the Long Range Financial Plan to help smooth the annual schedule of water and wastewater rate adjustments, and to repair critical assets quickly in the event of a natural disaster or facility failure.

Replacement and Refurbishment (R&R) Reserve - The R&R Reserve funds the replacement and refurbishment of existing assets in conjunction with the District's Asset Management Plan. The reserve's target is equal to the annual average of the ten-year expected capital spending on R&R projects as outlined in the District's 10-year CIP. All amounts will be maintained in a separate R&R Reserve Fund.

Emergency Reserve - The Emergency Reserve provides funds to enable the District to quickly repair critical assets in the event of a natural disaster or facility failure. The target amount of the Emergency Reserve is equal to 2% of the historic values of the District's assets, as outlined in current guidelines from the Federal Emergency Management Agency (FEMA). All amounts are maintained in a separate Emergency Reserve Fund.

2.2.3. Debt Service Reserve

The Debt Service Reserves are held in trust with a third party trustee as required by specific bond covenants. Increases and decreases to these reserves are in accordance with the bond covenants. The District's accounting records show these amounts in various debt funds.

Table 1 – Summary of Reserve Targets*

Reserve	Target
Self-Insurance Reserve	$250,000
Replacement and Refurbishment	$17,061,912
Rate Stabilization	$10,663,995
General Operating	$20,262,901
Emergency	$6,884,925
Debt Service Reserves	$9,406,042
Total Reserves	**$64,529,776**

* Reserve Targets are based on end of Fiscal Year 2014 financial information.

2.3. Modeling Assumptions

The 10-Year Cash Flow Model employs assumptions to calculate future year revenues and expenses where budget projections are not available. The following assumptions were reviewed by District staff and consultants as part of the development of the November 2014 Long Range Financial Plan report.

The 10-Year Cash Flow Model uses the most recent audited financial information and Board adopted budgets for the study period. The District's fiscal year (FY) starts July 1 of each year. For example, FY 2014 runs from July 1, 2013 to June 30, 2014.

The cost-of-service analysis is based on the financial information for FY 2015 (i.e., the "Test Year").

2.3.1. Inflation Assumptions

The following describes the cost inflation factors that were applied to specific expenditure categories. All inflation factors are summarized in Table 2.

Table 2 –Summary of Inflation Assumptions

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Utilities	3.9%	3.6%	3.4%	3.6%	3.6%
Benefits	3.5%	5.5%	5.5%	1.8%	1.8%
Salaries	2.5%	4.5%	4.5%	2.5%	2.5%
General	1.8%	1.8%	1.8%	1.8%	1.8%
Water Purchase	3.9%	2.3%	3.4%	3.0%	3.3%
Capital	0.5%	0.5%	0.5%	0.5%	0.5%
Property	2.0%	2.0%	2.0%	2.0%	2.0%
Investment Return	1.5%	2.0%	3.0%	3.0%	3.0%

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Utilities	3.6%	3.6%	3.6%	3.6%	3.6%
Benefits	1.8%	1.8%	1.8%	1.8%	1.8%
Salaries	2.5%	2.5%	2.5%	2.5%	2.5%
General	1.8%	1.8%	1.8%	1.8%	1.8%
Water Purchase	4.1%	3.6%	3.4%	3.7%	3.7%
Capital	0.5%	0.5%	0.5%	0.5%	0.5%
Property	2.0%	2.0%	2.0%	2.0%	2.0%
Investment Return	4.0%	4.0%	4.0%	4.0%	4.0%

- **Utilities:** The first three years are based on the California Department of Finance's projection for electricity and fuel rates in southern California. The remaining seven years assume the average of the first three years.
- **Benefits**: The first three years represent the District staff's estimate of anticipated health and retirement increases in the near future based on the current Employee Association MOU. In the remaining seven years, the value is based on the long-term average Consumer Price Index (CPI) rate for southern California as calculated by the California Department of Finance.
- **Salaries:** The first three years are taken from the District's Memorandum of Understanding (MOU) with the Employee Association. The remaining seven years reflect the long-term average CPI rate for southern California as calculated by the California Department of Finance.
- **General**: Based on CPI data provided by the California Department of Finance.
- **Water Purchase Costs:** Based on projections provided by MWD and MWDOC staff.
- **Capital:** The low rate reflects both the uncertainty in future capital expenses and the uncertainty of the rate of inflation of those expenses.
- **Investment Return:** Based on the District's actual long-term return and short-term estimates from the District's investment manager.

2.3.2. Water Supply Assumptions

Currently, the District imports all of its potable water supplies from the MWDOC, which receives its supplies from the MWD. The Baker Water Treatment Plant is planned to start treating MWD raw water in FY 2016 and ramp up to full capacity in FY 2017, ultimately providing the District with over 8,000 acre feet annually. In the past five years the District has averaged 11% in non-revenue water (water used by the District or water loss due to leaks or inaccuracies in the system). Details regarding the District's assumptions of future water supply and the projected escalation of supply costs can be found in the Long Range Financial Plan.

2.3.3. Debt Financing Assumptions

In evaluating future financing needs, the 10-Year Cash Flow Model made assumptions on the initial and ongoing costs associated with issuing debt. Table 3 summarizes the projected terms for debt issuance mechanisms the District has historically implemented. These were provided by District staff based on conservative estimates of long-term trends.

Table 3 – Summary of Debt Financing Assumptions

Debt Mechanism	Interest Rate	Term (Years)	Issuance Cost
Certificates of Participation (COP)	5.0%	30	$250,000
General Obligation Bonds	5.0%	30	$250,000
State Revolving Fund Loans	2.7%	20	$150,000

2.4. Water System Financial Plan

The District's revenue requirements can be organized into four components: O&M costs, capital costs (cash and debt service), reserve requirements, and debt service coverage requirements. The former two components are described below, while the latter two components were described in Section 2.1 and Section 2.2.

O&M Costs - The 10-Year Cash Flow Model was populated with the District's two-year O&M budget for FY 2015 and FY 2016. Operating costs beyond FY 2016 were calculated based on cost escalation assumptions (see Section 2.3.1) unless specified otherwise in this Rate Study Report.

Capital Costs - The District maintains a long-range fiscal perspective through the use of a CIP to maintain the quality of District water and wastewater infrastructure. The capital spending projections in the 10-Year Cash Flow Model are based on the District's CIP. Capital spending has been projected as far as FY 2024, although it should be noted that spending projections beyond FY 2019 are significantly less reliable than those in the next 5 years.

The following describes the revenue requirements over the next ten years for the Water System.

2.4.1. Water System Revenue Requirements

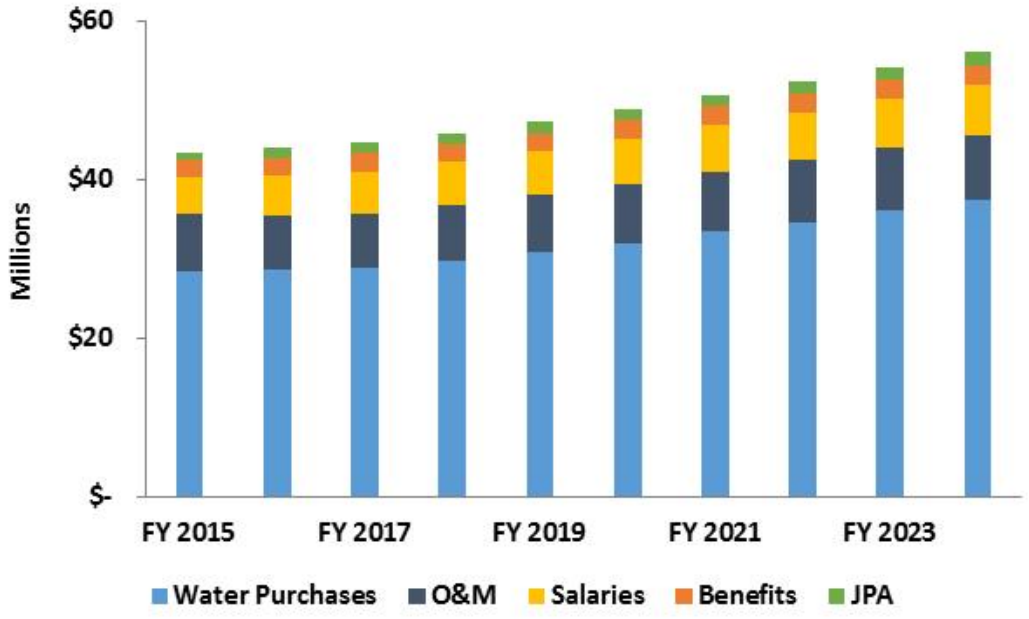
The Water System's O&M budget projections for the study period are summarized in Table 4 and displayed as a graph in Figure 1. All cost projections are based on the District staff's best available data on wholesale water costs, future operational needs and cost escalation.

Table 4 - Water System O&M Budget Summary

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Water Purchases	$ 28,514,417	$ 28,790,898	$ 28,894,760	$ 29,796,280	$ 30,809,912
O&M	7,211,338	6,790,595	6,948,245	7,109,194	7,274,210
Salaries	4,741,626	5,050,171	5,277,429	5,409,365	5,544,599
Benefits	2,019,900	2,126,662	2,239,990	2,280,130	2,320,929
JPA	1,050,370	1,254,000	1,296,127	1,342,945	1,391,453
Total O&M Budget	**$ 43,537,651**	**$ 44,012,325**	**$ 44,656,551**	**$ 45,937,913**	**$ 47,341,103**

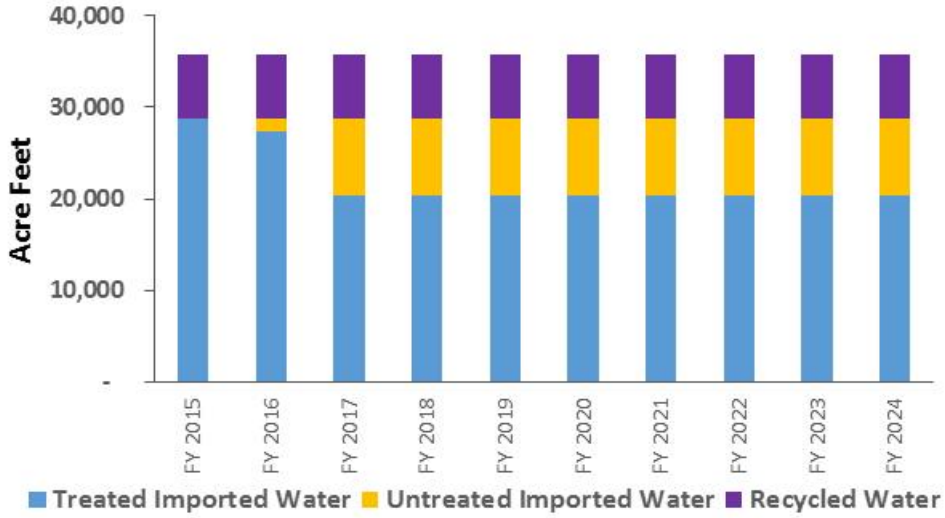
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Water Purchases	$ 32,105,621	$ 33,457,850	$ 34,744,329	$ 36,108,427	$ 37,581,872
O&M	7,443,411	7,616,915	7,794,846	7,977,331	8,164,500
Salaries	5,683,214	5,825,294	5,970,926	6,120,200	6,273,204
Benefits	2,362,398	2,404,545	2,447,382	2,490,917	2,535,162
JPA	1,441,714	1,493,790	1,547,748	1,603,654	1,661,580
Total O&M Budget	**$ 49,036,357**	**$ 50,798,395**	**$ 52,505,231**	**$ 54,300,528**	**$ 56,216,318**

Figure 1 - Water System Operating Budget Summary



The largest operating expense for the Water System is water purchases. Currently, the District purchases all of its potable water supply from the MWDOC. The regional Baker Water Treatment Plant is expected to come online in 2016 and reach full capacity in 2017, ultimately meeting approximately 25% of the District's total potable water demand. Another 22% of demand is currently met with recycled water. MNWD has invested in the Baker Water Treatment Plant and its recycled water facilities as potable water reliability projects. Figure 2 shows the forecasted potable and non-potable water supply portfolio.

Figure 2- Water Supply Portfolio



The District's Long Range Financial Plan projects capital spending from FY 2015 through FY 2024 based on the District's 10-Year CIP. The Water System has an expected CIP of approximately $105 million over the next 10 years. This is an increase over historical capital spending levels, and is due to a combination of aging infrastructure with forecasted replacement and rehabilitation, as well as large regional capital projects. Anticipated projects include various Joint Regional Water Supply System (JRWSS) projects, the Baker Water Treatment Plant, and additional repair and replacement project of District assets.

Figure 3 provides a summary of the major capital expenses for the Water System based on the District's FY 2014 CIP.

Figure 3 – Water System Capital Project Summary

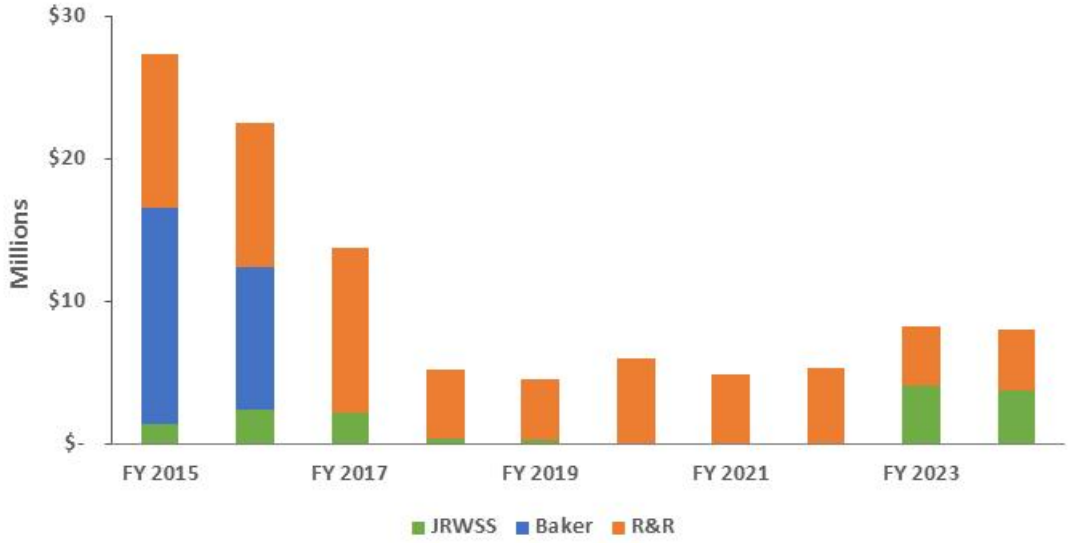
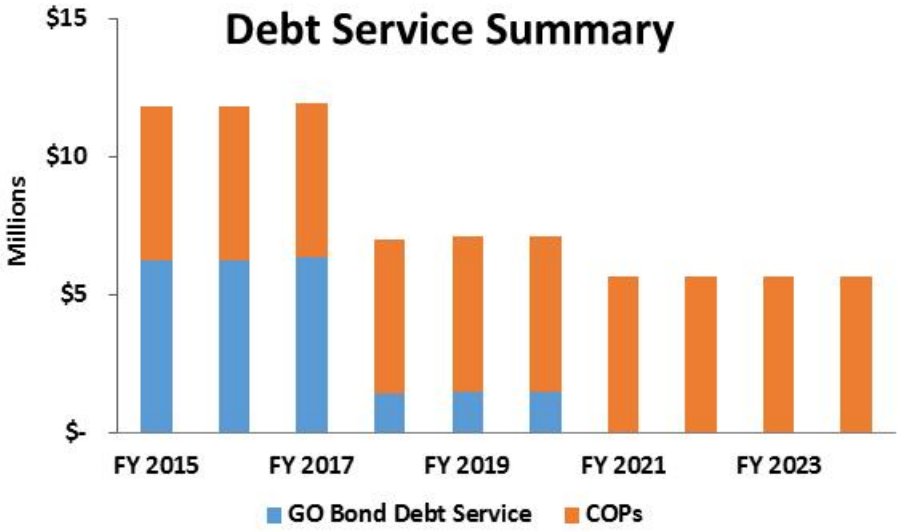


Figure 4 provides a breakdown of existing debt associated with the Water System.

Figure 4 – Water System Debt Service Summary



For a complete picture of the Water System's projected O&M and capital expenditures, refer to Appendix A which contains a 10-year cash flow proforma.

2.4.2. Water System Existing Revenue

The Water System receives a mix of both rate and non-rate revenue (as listed in Figure 5) to support its General Fund. Figure 5 presents the relative amount of revenue that the Water System is projected to receive in FY 2015 by revenue type. The "Connection Fees" are the District's charges for new

development to buy into existing assets and pay for growth related future capital. The “Other Income” is made up of miscellaneous fees and charges.

Figure 5 – Water System General Fund Revenue Types

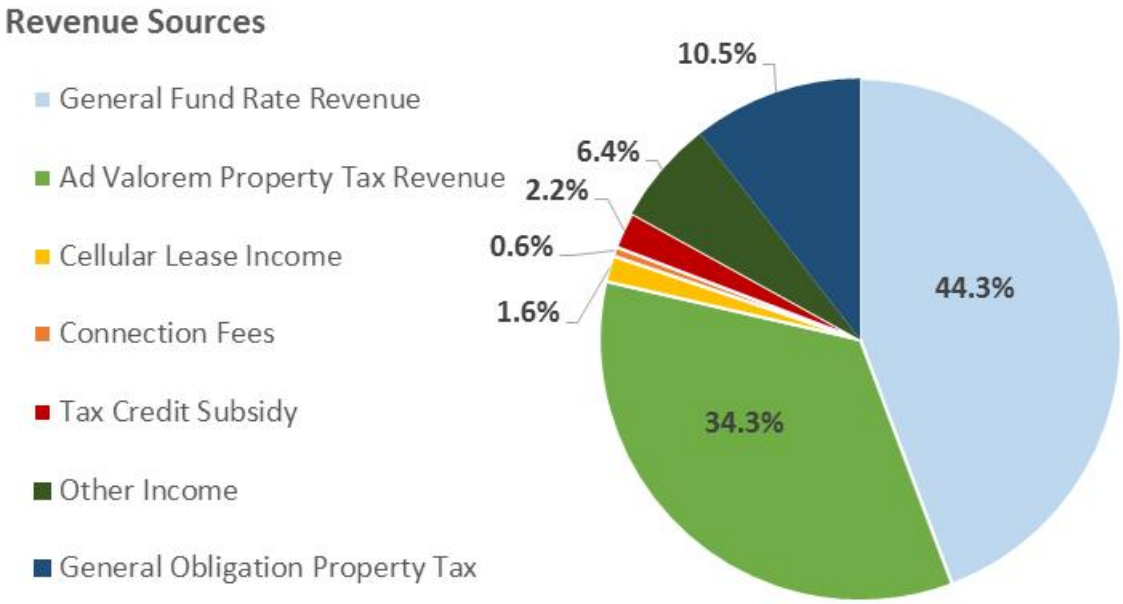


Table 5 shows a summary of the Water System’s projected revenues through FY 2024 assuming no rate adjustments.

Table 5 – Water System Current and Projected Revenues (No Rate Adjustment)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Current Rate Revenue	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790
Ad Valorem Property Tax Revenue	20,319,105	20,519,055	20,929,436	21,348,025	21,774,985
Cellular Lease Income	957,000	946,000	897,237	885,296	847,652
Connection Fees	339,265	680,988	98,533	98,533	98,533
Tax Credit Subsidy	1,331,147	1,331,147	1,331,147	1,331,147	1,331,147
AMP RPOI	23,663	6,968	6,834	0	0
Other Income	3,793,956	330,249	273,236	273,236	273,236
General Obligation Property Tax	6,227,747	6,240,500	6,365,900	1,419,500	1,449,875
Investment Income	1,193,141	1,157,920	1,643,161	1,767,109	1,558,607
Total Revenues	**$ 60,388,814**	**$ 57,416,616**	**$ 57,749,274**	**$ 53,326,636**	**$ 53,537,825**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Current Rate Revenue	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790
Ad Valorem Property Tax Revenue	22,210,485	22,654,695	23,107,789	23,569,944	24,041,343
Cellular Lease Income	858,405	873,720	889,285	905,104	921,181
Connection Fees	98,533	98,533	98,533	98,533	98,533
Tax Credit Subsidy	1,331,147	1,331,147	1,331,147	1,331,147	1,331,147
AMP RPOI	0	0	0	0	0
Other Income	273,236	273,236	273,236	273,236	273,236
General Obligation Property Tax	1,490,375	0	0	0	0
Investment Income	1,730,807	1,332,236	879,958	301,052	(380,515)
Total Revenues	**$ 54,196,777**	**$ 52,767,356**	**$ 52,783,738**	**$ 53,167,576**	**$ 53,960,962**

The proforma in Appendix A provides a 10-year cash flow projection given the scenario where the District makes no adjustment to water rates and doesn't issue any new debt.

2.5. Recycled Water Financial Plan

The principles for the Recycled Water System financial plan mirror the organization of the Water System financial plan as described in Section 2.4. The following describes the revenue requirements over the next ten fiscal years for the Recycled Water System.

2.5.1. Recycled Water System Revenue Requirements

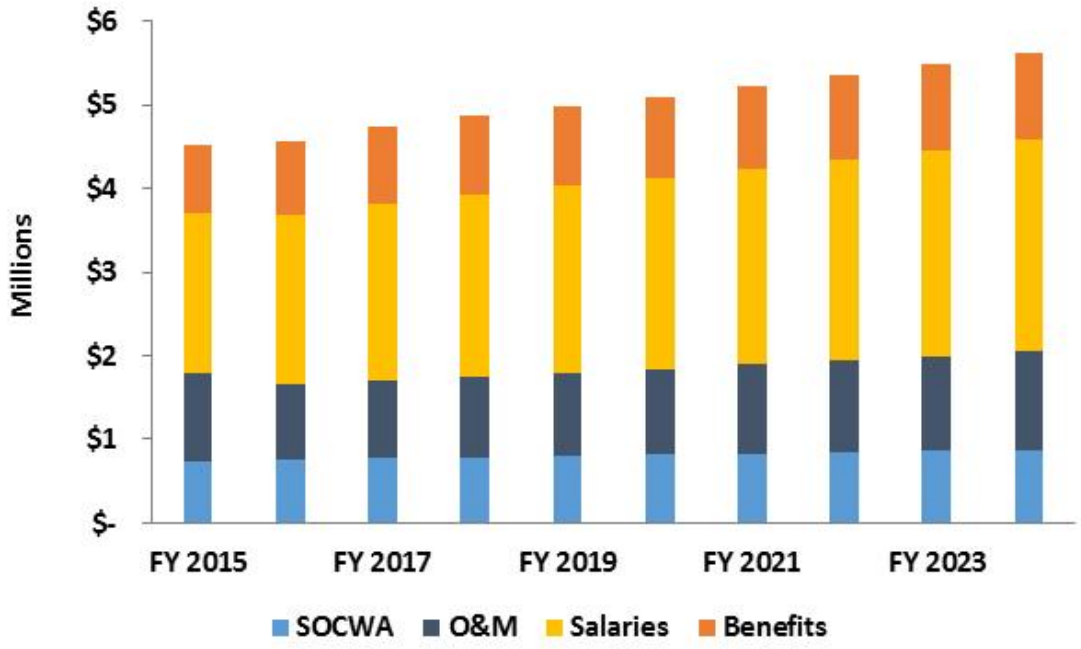
The Recycled Water System's O&M budget projections for the study period are summarized in Table 6 and displayed as a graph in Figure 6.

Table 6 - Recycled Water System O&M Budget Summary

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Salaries	1,907,953	2,034,165	2,125,702	2,178,845	2,233,316
Benefits	831,110	874,358	920,804	937,305	954,076
O&M	1,044,556	893,296	925,175	957,609	991,195
SOCWA	745,161	760,848	774,336	788,212	802,316
Total O&M Budget	**$ 4,528,781**	**$ 4,562,666**	**$ 4,746,018**	**$ 4,861,970**	**$ 4,980,903**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Salaries	2,289,149	2,346,378	2,405,037	2,465,163	2,526,792
Benefits	971,123	988,449	1,006,058	1,023,954	1,042,142
O&M	1,025,975	1,061,991	1,099,288	1,137,912	1,177,910
SOCWA	816,651	831,221	846,029	861,079	876,374
Total O&M Budget	**$ 5,102,898**	**$ 5,228,039**	**$ 5,356,412**	**$ 5,488,108**	**$ 5,623,218**

Figure 6 – Recycled Water System Operating Budget Summary



The District's Long Range Financial Plan projects capital spending from FY 2015 through FY 2024 based on the District's 10-Year CIP. The Recycled Water System has an expected CIP of approximately $22.6 million over the next 10 years. This is an increase over historical capital spending levels, and is due to a combination of aging infrastructure with forecasted replacement, rehabilitation, and expansion of the system. Figure 7 provides a summary of the major capital expenses for the Recycled Water System based on the District's 2014 CIP.

Figure 7 – Recycled Water System Capital Project Summary

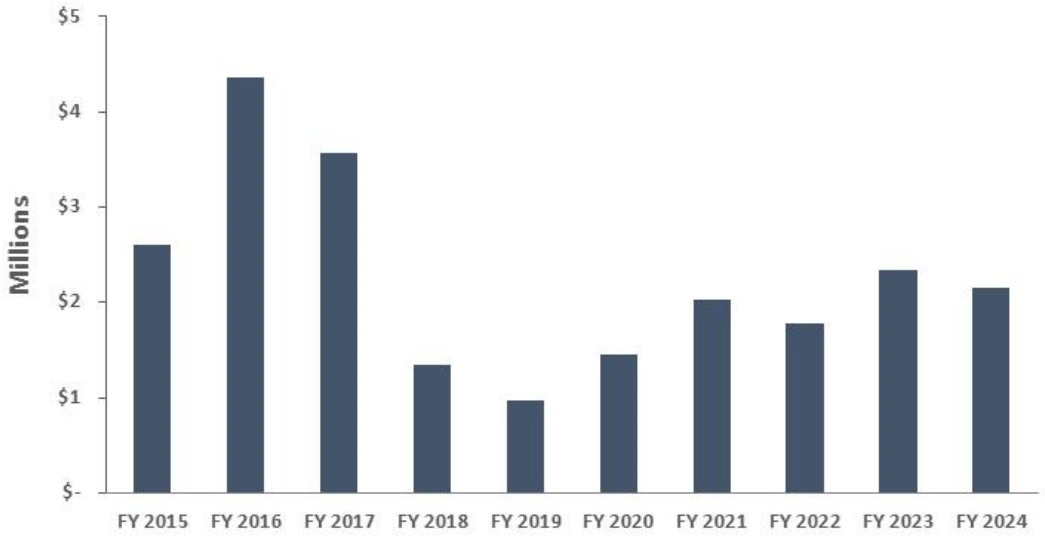
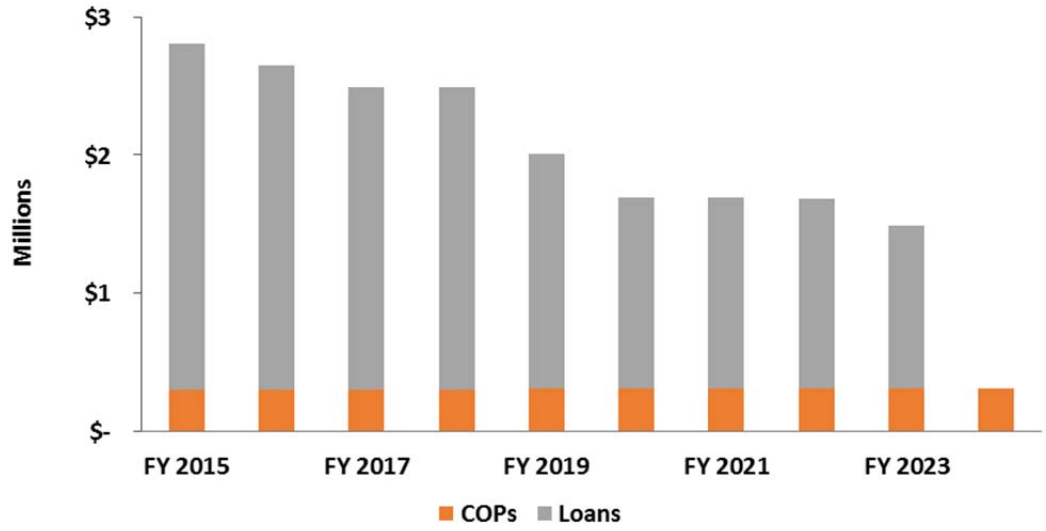


Figure 8 provides a breakdown of existing debt associated with the Recycled Water System.

Figure 8 – Recycled Water System Debt Service Summary



For a complete picture of the Recycled Water System's projected O&M and capital expenditures, refer to Appendix B which contains a 10-year cash flow proforma.

2.5.2. Recycled Water System Existing Revenue

The Recycled Water System receives a mix of both rate and non-rate revenue (as listed in Figure 9) to support its General Fund. Figure 9 presents the relative amount of revenue that the Recycled Water System is projected to receive in FY 2015 by revenue type.

Figure 9 – Recycled Water System Revenue Types

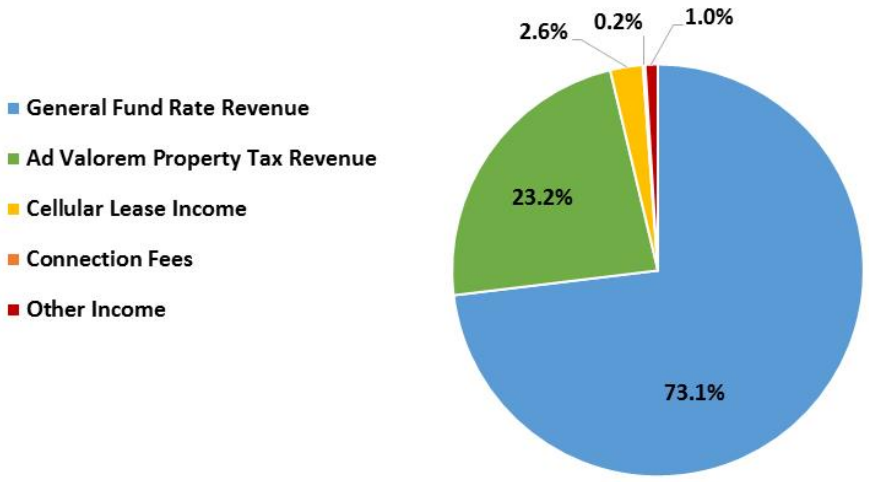


Table 7 shows a summary of the Recycled Water System's projected revenues through FY 2024 assuming no rate adjustments.

Table 7 – Recycled Water System Current and Projected Revenues (No Rate Adjustement)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Current Rate Revenue	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591
Ad Valorem Property Tax Revenue	1,529,395	1,544,445	1,590,778	1,638,502	1,687,657
Cellular Lease Income	174,000	172,000	163,134	160,963	154,119
Connection Fees	61,685	123,816	17,915	17,915	17,915
Other Income	53,447	60,045	49,679	49,679	49,679
Investment Income	176,537	155,160	98,632	5,319	(46,663)
Total Revenues	**$ 6,700,654**	**$ 6,761,057**	**$ 6,625,730**	**$ 6,577,969**	**$ 6,568,298**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Current Rate Revenue	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591
Ad Valorem Property Tax Revenue	1,755,163	1,825,370	1,898,384	1,974,320	2,053,292
Cellular Lease Income	156,074	158,858	161,688	164,564	167,487
Connection Fees	17,915	17,915	17,915	17,915	17,915
Other Income	49,679	49,679	49,679	49,679	49,679
Investment Income	(122,156)	(201,812)	(293,369)	(393,013)	(478,504)
Total Revenues	**$ 6,562,266**	**$ 6,555,602**	**$ 6,539,889**	**$ 6,519,056**	**$ 6,515,462**

The proforma in Appendix A provides a 10-year cash flow projection given the scenario where the District makes no adjustment to water rates and doesn't issue any new debt.

2.6. Wastewater System Financial Plan

The principles for the Wastewater System financial plan mirror the organization of the Water System financial plan as described in Section 2.4. The following describes the revenue requirements over the next ten years for the Wastewater System.

2.6.1. Wastewater System Revenue Requirements

The Wastewater System's O&M budget projections for the study period are summarized in Table 8 and displayed as a graph in Figure 10.

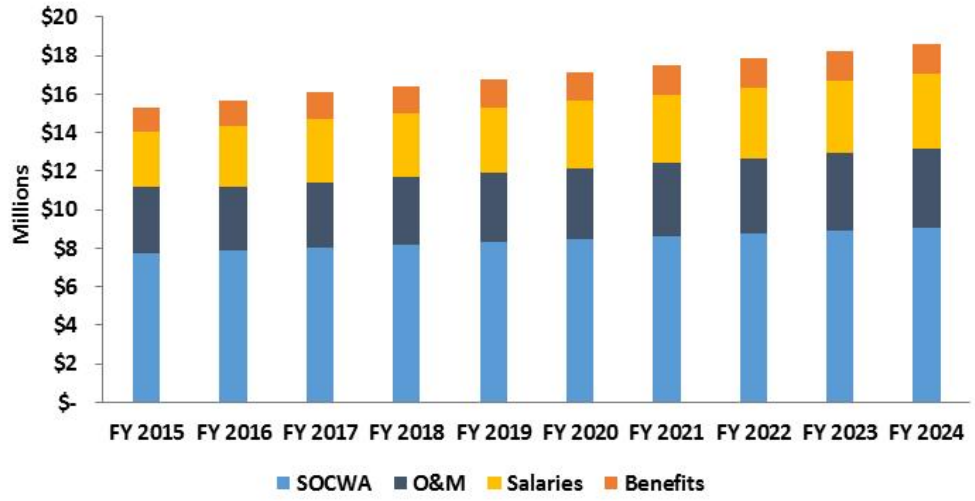
Table 8 – Wastewater System O&M Budget Summary[10]

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
SOCWA	$ 7,705,659	$ 7,869,152	$ 8,008,656	$ 8,152,169	$ 8,298,039
O&M	3,440,304	3,325,941	3,414,002	3,504,856	3,598,362
Salaries	2,915,535	3,107,801	3,247,652	3,328,843	3,412,064
Benefits	1,255,493	1,322,298	1,392,858	1,417,818	1,443,188
Total O&M Budget	**$ 15,316,992**	**$ 15,625,192**	**$ 16,063,168**	**$ 16,403,685**	**$ 16,751,653**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
SOCWA	$ 8,446,302	$ 8,596,993	$ 8,750,147	$ 8,905,800	$ 9,063,988
O&M	3,694,605	3,793,672	3,895,654	4,000,645	4,108,740
Salaries	3,497,366	3,584,800	3,674,420	3,766,281	3,860,438
Benefits	1,468,973	1,495,181	1,521,818	1,548,889	1,576,401
Total O&M Budget	**$ 17,107,246**	**$ 17,470,647**	**$ 17,842,039**	**$ 18,221,614**	**$ 18,609,566**

[10] Table numbers may not add up due to rounding

Figure 10 – Wastewater Operating Budget Summary



The District's Long Range Financial Plan projects capital spending from FY 2015 through FY 2024 based on the District's 10-Year CIP. The Wastewater System has an expected CIP of approximately $100.4 million over the next 10 years. This is an increase over historical capital spending levels, and is due to a combination of aging infrastructure with forecasted replacement and rehabilitation.

Figure 11 provides a summary of the major capital expenses for the Wastewater System based on the District's 2014 CIP.

Figure 11 – Wastewater System Capital Project Summary

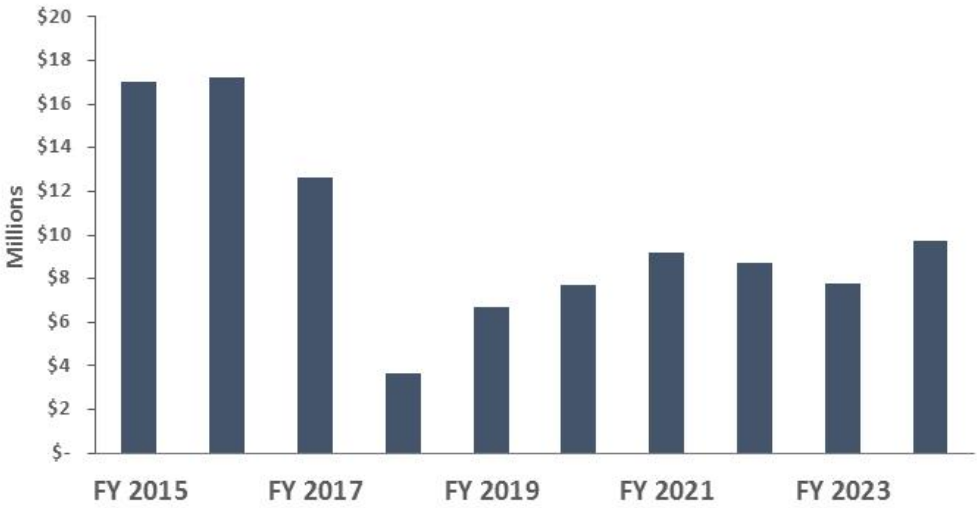
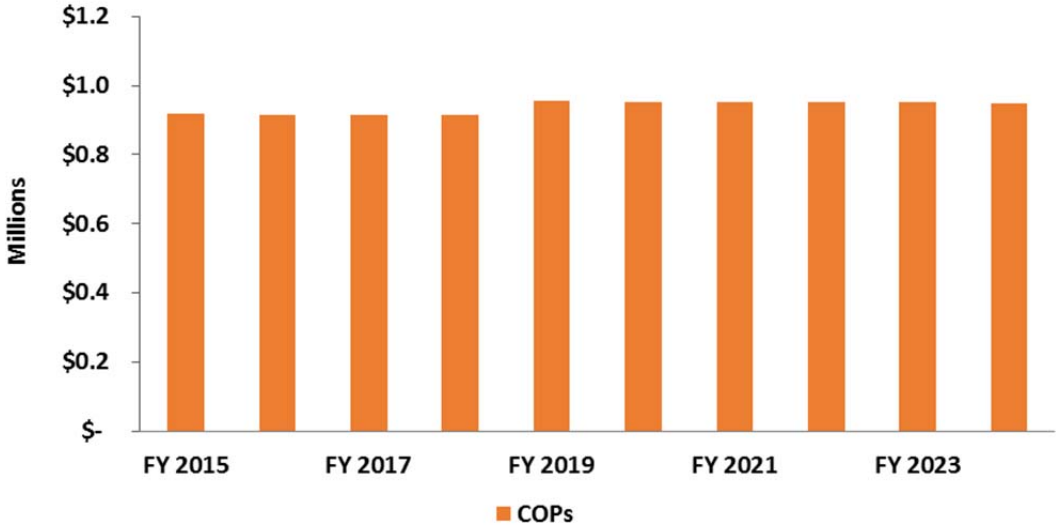


Figure 12 provides a breakdown of existing debt associated with the Wastewater System.

Figure 12 – Wastewater System Debt Service Summary



For a complete picture of the Wastewater System's projected O&M and capital expenditures, refer to Appendix C which contains a 10-year cash flow proforma.

2.6.2. Wastewater System Existing Revenue

The Wastewater System receives a mix of both rate and non-rate revenue (as listed in Figure 13) to support its General Fund. Figure 13 presents the relative amount of revenue that the Wastewater System is projected to receive in FY 2015 by revenue type.

Figure 13 – Wastewater Water System Revenue Types

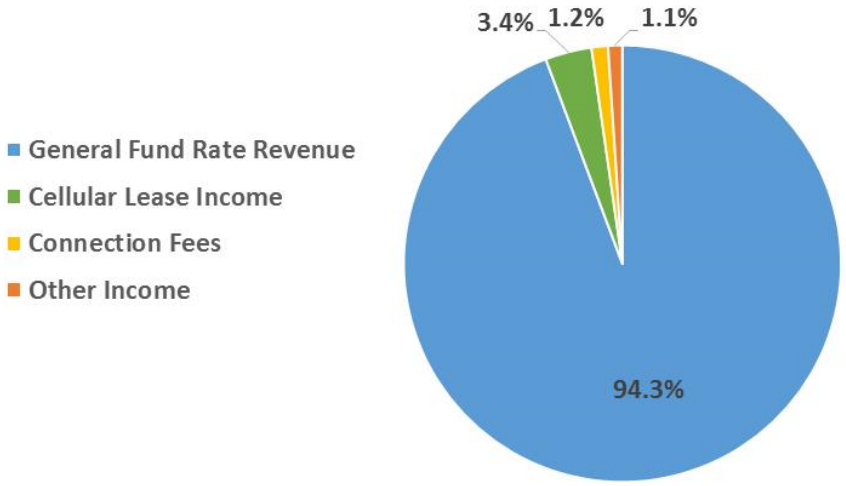


Table 9 shows a summary of the Wastewater System's projected revenues through FY 2024 assuming no rate adjustments.

Table 9 – Wastewater System Current and Projected Revenues (No Rate Adjustement)[11]

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Current Rate Revenue	$16,740,141	$16,740,141	$16,740,141	$16,740,141	$16,740,141
Cellular Lease Income	609,000	602,000	570,969	563,370	539,415
Connection Fees	215,896	433,356	62,703	62,703	62,703
Other Income	187,063	210,158	173,878	173,878	173,878
Investment Income	590,968	486,773	327,451	104,565	(47,803)
Total Revenues	**$18,343,068**	**$18,472,428**	**$17,875,141**	**$17,644,657**	**$17,468,333**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Current Rate Revenue	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141
Cellular Lease Income	546,258	556,003	565,909	575,975	586,206
Connection Fees	62,703	62,703	62,703	62,703	62,703
Other Income	173,878	173,878	173,878	173,878	173,878
Investment Income	(368,519)	(749,416)	(1,179,881)	(1,614,250)	(2,101,197)
Total Revenues	**$ 17,154,459**	**$ 16,783,308**	**$ 16,362,749**	**$ 15,938,447**	**$ 15,461,730**

The proforma in Appendix C provides a 10-year cash flow projection given the scenario where the District makes no adjustment to water rates and doesn't issue any new debt.

2.7. Water Use Efficiency Fund Financial Plan

In November 2009, a bipartisan package of five bills emerged from the state legislature's 2009 Extraordinary Session to address California's mounting water crisis. The bills passed in November 2009 and took effect January 1, 2010. Senate Bill 7X7 (2009-2010 7th Ex. Sess.) ("SB 7") proposes to protect water supplies by mandating a statewide twenty percent reduction in urban per capita water use by 2020. The state is required to make incremental progress toward achieving this goal by reducing per capita water use by at least ten percent by 2015, and both urban water suppliers and agricultural water suppliers are required to develop plans for reducing water use.

SB 7 requires urban retail water suppliers, such as MNWD, to formulate water demand reduction targets and to reduce per capita water[12] use within their service area by ten percent by 2015 and by twenty percent by 2020 (the "20x2020 goal").[13] Urban retail water suppliers must report their interim and overall water use targets in their UWMP due July 1, 2011, and must report their progress toward

[11] Table numbers may not add up due to rounding

[12] When calculating per capita values, an urban retail water supplier is required to determine population using federal, state and local population reports and projections as applicable. Cal. Water Code § 10608.20(f).

[13] There are several alternatives for urban water suppliers to accomplish their water use targets. For example, urban water suppliers may elect to determine and report progress toward achieving their targets on an individual or regional basis, or on a fiscal or calendar-year basis. Cal. Water Code §§ 10608.20(a), 10608.24.

reaching their targets in their 2015 UWMP. The Water Use Efficiency (WUE) Fund is a dedicated fund for the management of the District's water resources through conservation programs and to assist the District in meeting and maintaining its 20x2020 goal. The program uses instruments such as rebates for water efficient appliances (such as clothes washers and toilets), rebates for turf removal, home efficiency surveys, and conservation awareness campaigns. The WUE Fund receives most of its funding through the "non-budget tiers" (currently Tiers 3, 4 & 5) of Water and Recycled Water rate revenue. MNWD has determined that if every customer stayed within their water budget, the District would continue to meet its statutory obligation to meet its 20x2020 goal. The WUE program costs are allocated to the non-budget tiers because those customers who use more than what has been determined to be efficient water use (i.e., water use within their respective budget) generate the need for, and therefore the costs associated with, the water use efficiency program. The greater the demand for water, the greater the need to expand the WUE program and incur costs related thereto. These incremental cost increases are therefore proportionately allocated to customers who use water within Tiers 3, 4, and 5. The WUE Fund is projected to have a large budget increase in FY 2015 and FY 2016 compared to previous spending levels with an approximate doubling of the planned expenditures, due largely to the planned doubling of rebate expenses for FY 2015.

The principles for the WUE Fund financial plan mirror the organization of the Water System financial plan as described in Section 2.4. The following describes the revenue requirements over the next ten fiscal years for the WUE Fund.

2.7.1. Water Use Efficiency Program Revenue Requirements

The WUE program O&M budget projections for the study period are summarized in Table 10 and displayed as a graph in Figure 14.

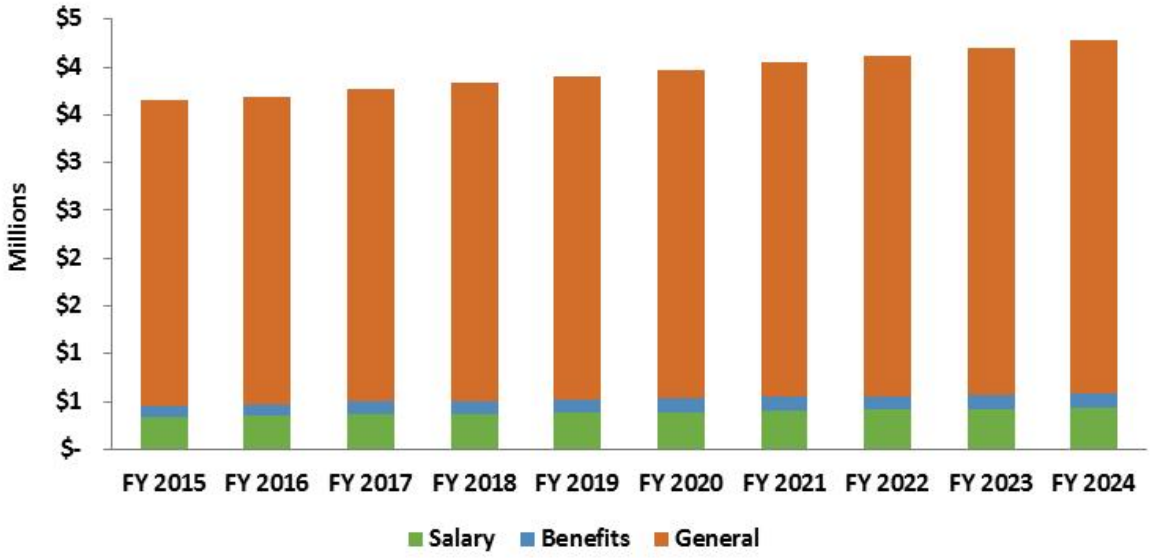
Table 10 – WUE Program O&M Budget Summary[14]

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
General	$ 3,209,934	$ 3,207,434	$ 3,264,295	$ 3,322,790	$ 3,382,247
Salary	330,618	348,149	363,816	372,911	382,234
Benefits	121,896	127,077	134,066	136,469	138,911
	$ 3,662,448	**$ 3,682,660**	**$ 3,762,177**	**$ 3,832,170**	**$ 3,903,391**

	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
General	$ 3,442,678	$ 3,504,099	$ 3,566,524	$ 3,629,967	$ 3,694,444
Salary	391,790	401,584	411,624	421,915	432,463
Benefits	141,393	143,915	146,479	149,085	151,733
	$ 3,975,860	**$ 4,049,599**	**$ 4,124,627**	**$ 4,200,967**	**$ 4,278,639**

[14] Table numbers may not add up due to rounding

Figure 14 – WUE Fund Operating Budget Summary



2.7.2. WUE Fund Existing Revenue

The revenue for the WUE Fund comes from the portion of Tier 3, 4 & 5 rate revenue from Water and Recycled Water rates to recover the incremental costs of funding the program from those who create the need for and costs related to the program, in addition to some interest earnings (see Section 4.1.3 for explanation). Figure 15 presents the relative amount of revenue that the WUE Fund is projected to receive in FY 2015 by revenue type.

Figure 15 – WUE Fund Revenue Types

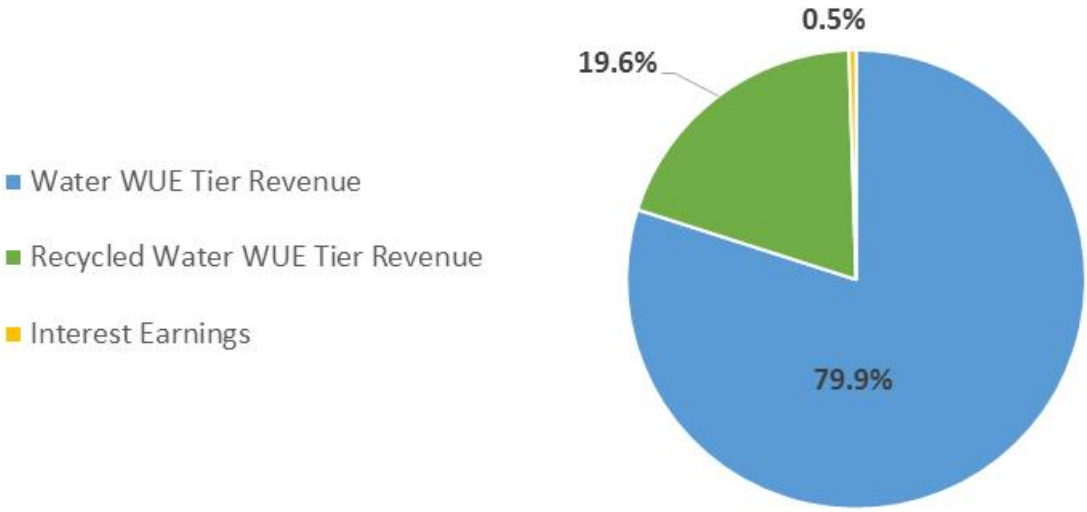


Table 11 shows a summary of the WUE Fund's projected revenues through FY 2024 assuming no rate adjustments.

Table 11 – WUE Fund Current and Projected Revenues (No Rate Adjustement)[15]

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019
Water WUE Tier Revenue	$ 3,037,146	$ 3,037,146	$ 3,037,146	$ 3,037,146	$ 3,037,146
Recycled Water WUE Tier Revenue	743,935	743,935	743,935	743,935	743,935
Interest Earnings	18,750	25,802	39,823	40,923	41,639
Total	**$ 3,799,830**	**$ 3,806,882**	**$ 3,820,903**	**$ 3,822,003**	**$ 3,822,719**

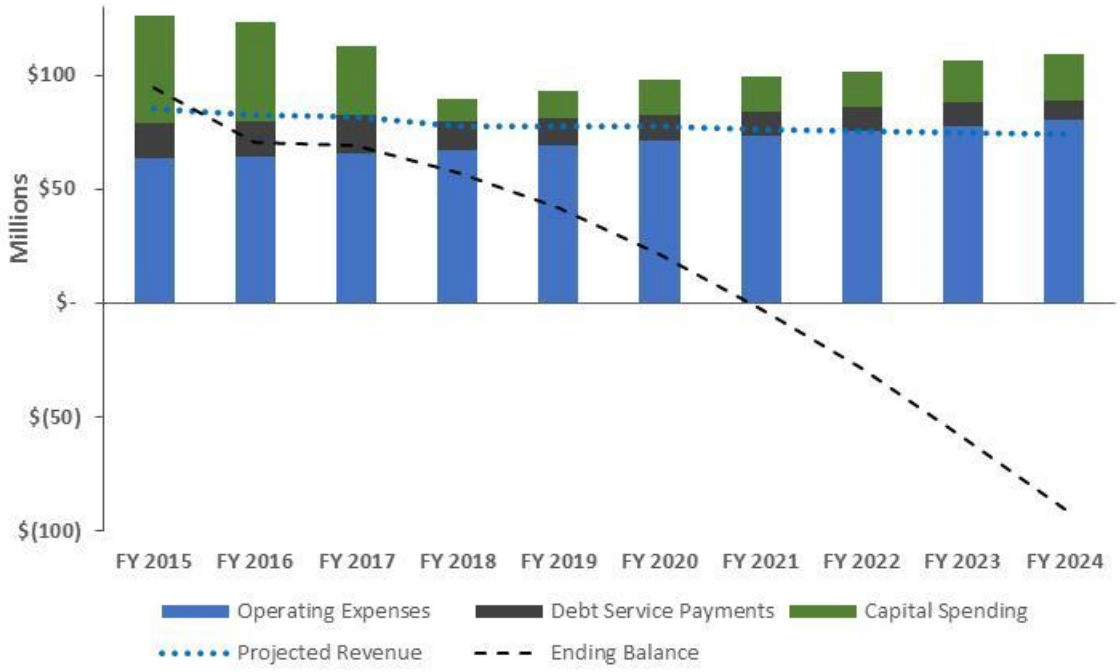
	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Water WUE Tier Revenue	$ 3,037,146	$ 3,037,146	$ 3,037,146	$ 3,037,146	$ 3,037,146
Recycled Water WUE Tier Revenue	743,935	743,935	743,935	743,935	743,935
Interest Earnings	55,936	56,351	56,196	55,440	54,047
	$ 3,837,016	**$ 3,837,431**	**$ 3,837,276**	**$ 3,836,520**	**$ 3,835,127**

2.8. District-wide General Fund Financial Projections

While it is important to understand the financial condition of each individual System within the District, it is important to understand that the District's reserve levels and debt coverage ratio are managed at the District level, not at the individual System level.

Figure 16 provides a 10-year forecast of the District's General Fund projected revenue requirements as compared to projected revenues.

Figure 16 – General Fund Revenue and Expense Projections – No rate adjustment



[15] Table numbers may not add up due to rounding

2.9. Recommended General Fund Rate Adjustments

The following describes a financial strategy (as provided by the Long Range Financial Plan) consisting of a combination drawing on cash reserves and issuing debt in order to minimize rate increases and smooth out the costs of the immediate capital program. Near-term capital will be funded by drawing down on cash reserves. The District has advised that it plans to issue Certificates of Participation (COPs) worth $30 million in FY 2017 to fund system projects. Throughout the 10-year planning period the District's reserve levels will be maintained, at a minimum, at the targets adopted in the District's Reserve Policy. Table 12 provides the planned adjustments to the General Fund rate revenue for all three Systems in order to maintain the District's debt coverage ratio at 1.75 and reserve levels at target levels over the course of the 10-year planning period.

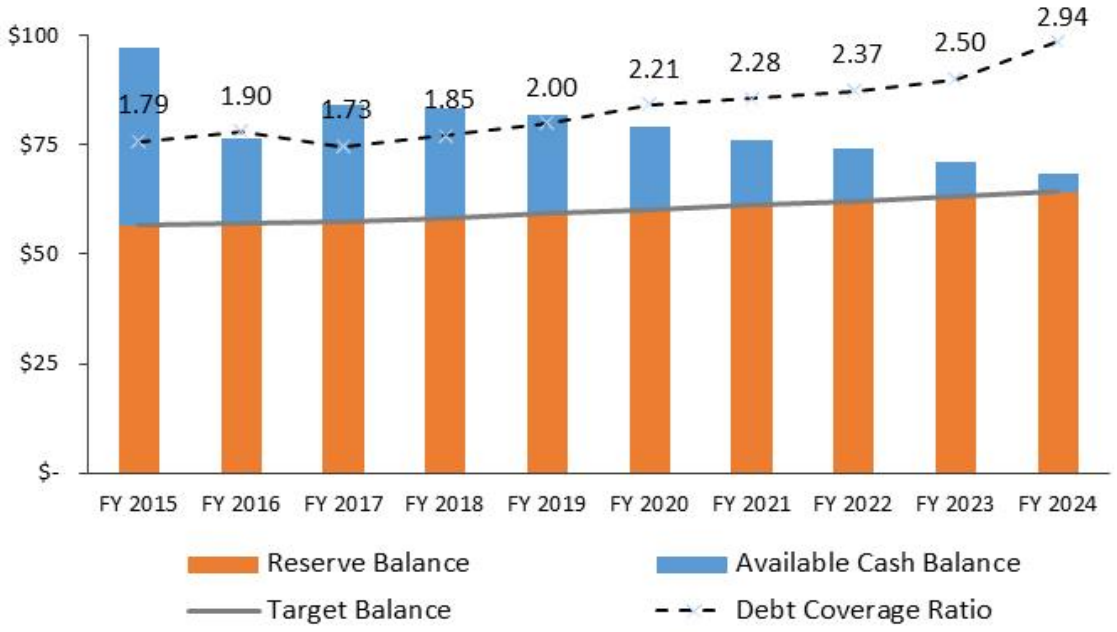
Table 12 – Summary of General Fund Rate Adjustments

Implementation Day	General Fund Rate Adjustment			
	Water System	Recycled Water System	Wastewater System	Overall
April 1, 2015	5.9%	5.9%	9.0%	7.0%
July 1, 2016	5.6%	5.6%	9.5%	7.0%
July 1, 2017	4.6%	4.6%	5.6%	5.0%
July 1, 2018	3.7%	3.7%	4.6%	4.0%
July 1, 2019	3.7%	3.7%	4.5%	4.0%
July 1, 2020	3.7%	3.7%	4.5%	4.0%
July 1, 2021	3.7%	3.7%	4.5%	4.0%
July 1, 2022	3.7%	3.7%	4.5%	4.0%
July 1, 2023	3.7%	3.7%	4.5%	4.0%
July 1, 2024	3.7%	3.7%	4.5%	4.0%

Figure 17 provides a 10-year forecast of the District's General Fund reserve levels based on the projected financial outcome of implementing the above financial strategy. Aggregated across all three Systems, the proposed financial strategy will maintain the District's coverage ratios and reserves at target levels. Specifically, the figure shows that the reserve balance is projected to gradually get drawn down to target levels by the end of the planning period. This approach will give the District the option of using cash balances to fund capital projects and will provide additional policy options and the ability to meet unforeseen risks. The debt coverage ratio is projected to remain above target levels through the planning period.

In looking at the schedule of proposed rate adjustments summarized in Table 12, the adjustments at the beginning of the planning period are primarily needed to keep the debt coverage ratio at or above target levels. By the end of the planning period, the rate adjustments are primarily needed to maintain the reserves above their target levels.

Figure 17 – General Fund Projection – Recommended Finance Strategy

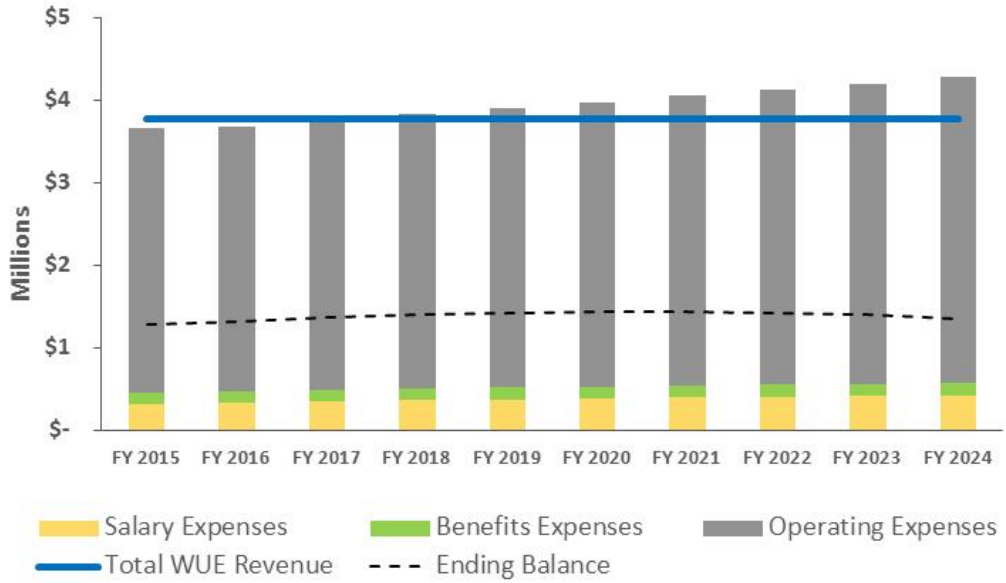


The proformas in Appendix D, Appendix E, and Appendix F show the overall revenues, operating expenses, debt service, capital expenses, and fund balances for each respective System's portion of the General Fund assuming the implementation of the recommended financial strategy (rate adjustments and debt issuance for capital projects in FY 2017).

2.10. WUE Fund Financial Projections

The WUE Fund is managed independently from the General Fund.

Figure 18 – WUE Fund Projection – No Rate Adjustment



3. Cost of Service Analysis

Cost-of-service ratemaking is a process of allocating the utility system user-charge revenue requirements to customers based on their water use needs. Individual customer demands vary depending on the nature of the utility use at the location where service is provided. For example, water and wastewater demand for a family residing in a typical single-family home is different than the water and wastewater demand for a large commercial customer. As a practical matter, it is not feasible to allocate system revenue requirements at the individual account level. As such, the standard ratemaking practice is to group customers with similar system needs into customer classes. Rates are then developed for each customer class with each individual customer paying the class' average allocated cost of service for each unit of specific usage.

3.1. Water System Cost of Service

Generally speaking, water utility customers place the following demands on a water system:

1. The number of customers connected to a water system presents one level of demand that is typically related to the utility's need to provide for customer services such as bill processing, customer service support, meter and meter reading, and other administrative services;
2. Actual water capacity demands are typically measured in terms of each class' average-day use, maximum-day use, and peak-hour use (and impacts the size of a customer's meter); and
3. Reservation for fire flow capacity is another system demand that is applicable to a water system.

3.1.1. Water System Customers Classes

A customer class consists of a group of customers, with common characteristics, who share responsibility for certain costs incurred by the utility. Joint costs are shared among all customers in the system proportionately based on their service requirements that drive costs; some specific costs are borne by specific classes based on the characteristics of that group alone. The District's Water System is made up of the following customer classes:

- **Residential:** Residential customers include single-family homes used as domiciles and *individually-metered* condominiums, townhouses, and apartments.
- **Multi-Family:** Multi-Family customers include multiple dwelling units with a single meter (master meter). Multi-Family customers are most often master-metered apartment buildings, condominiums, and multi-plex (townhome) units.
- **Commercial:** Commercial customers include all businesses from small retail shops to office buildings, car washes, and restaurants.
- **Irrigation:** Irrigation customers are customers who use the water system for the sole purpose of outdoor irrigation. This class includes both private irrigation connections, such as homeowners associations, as well as some municipal accounts with a separate meter dedicated to outdoor irrigation.

- **Temporary Accounts ("Construction Meters"):** The District provides customers with the ability to rent temporary meters for installation on (typically) fire hydrants for temporary activities such as providing water to construction sites or street cleaning.
- **Private Fire Protection:** Some larger accounts, such as apartments or commercial buildings are equipped with water systems that provide sufficient capacity to provide fire protection within the structure. While these accounts use very little water, the District's distribution infrastructure has to be sized in order to be able to serve those water systems.
- **Public Fire Protection:** This customer class is included to account for the general fire protection costs of the water system (i.e. public fire hydrants). The costs allocated to this class are eventually reallocated to all other customer classes as part of the cost-of-service allocation methodology discussed below.

3.1.2. Water Utility Cost Allocation Methodology

Costs of a water system are incurred as a result of customer demands. We measure customer demands on various levels based on the notion of cost causation. Essentially, cost causation means that the District incurs a cost of providing service as a result of a particular kind of demand. This Rate Study Report used what is commonly referred to as the base extra-capacity method[16], under which customer demands are measured, and costs are allocated, as one of the following:

- **Base Costs**: Costs that tend to vary with the total quantity of water used, plus the costs incurred to provide water under average daily demand conditions. Base demands for customer classes are measured as each class' average daily demand.
- **Extra-Capacity Costs**: Costs incurred as a result of having to meet rate of use requirements in excess of the average daily demands. Extra-capacity costs are measured as maximum-day ("max-day") costs and peak-hour ("max-hour") costs. Extra-capacity demands are measured as each class' maximum-day and peak-hour demands. See Section 3.1.4 for more information.
- **Customer & Meter Costs:** Costs incurred as a result of serving customers without regard to the amount of water used. These costs are incurred at the same level whether the utility provides any water or no water. Customer costs include the costs of meter reading, meter maintenance, customer accounting, general and administrative costs, and other related costs. Measurements of demand for customer costs are based on the number of customer accounts. Meter costs are those costs associated with maintaining a customer's meter, the costs of which vary based on the size of the meter. Measurements of demand for meter costs are based on the meter equivalency count for customer classes.
- **Fire Protection Costs**: Costs incurred as a result of sizing the distribution infrastructure in order to be able to serve (both public and private) fire protection infrastructure.

In addition to these common allocation factors, the District added **Water Use Efficiency Costs, which are costs** attributable to managing the District's water supplies through water conservation efforts and water efficiency programs, as tracked by the District's dedicated WUE Fund.

[16] See AWWA M1 Manual

The following sections describe the measurements of demand related to each of the above.

3.1.3. Average Daily Water Demands

The base costs of a water system are incurred as a result of providing water demands at an average daily rate. Since customers' meters are not read on a daily basis, we estimate average daily demands by dividing total annual demand by 365 days. Based on the best available data, this cost-of-service analysis used the water usage from FY 2013 (Table 13). The cost implications of water demand are discussed in the next section.

Table 13 - Water Demand by Customer Class for FY 2013

	Total Annual Demand (ccf)	Average Monthly Demand (ccf)
Residential	7,424,526	618,711
Multi-Family	1,076,035	89,670
Commercial	1,113,966	92,831
Irrigation	1,547,630	128,969
Construction Meter	14,556	1,213
Private Fire Protection	1,081	90

3.1.4. Maximum-Day and Peak-Hour Demands

A significant characteristic of customer demand is the maximum-day and peak-hour demands that customers place on the system. Maximum-day and peak-hour demands describe the amount of water needed by customers on the day of greatest water need and hour of greatest water need, respectively. These demands have significant cost-of-service implications because the infrastructure for water supply and distribution needs to be sized to provide not just the average water demand, but rather the peak demands of customers. This infrastructure includes transmission pipes, meters, pump stations, pressure-reducing stations, storage, and distribution pipes. Customers with high seasonal use, such as summertime irrigators, tend to have the highest maximum day and peak-hour demands[17].

Since customers' meters are not read daily, we estimate daily class peaks based on the maximum daily production over the last 10 years divided by the average daily production over the last 10 years, which yields 1.71 (times average daily demand) for the District. The max hour demand is estimated to be equal to 1.5 times[18] the max day demand (yielding 2.56). We estimated class maximum-day and peak-hour demands using the following procedures:

1. We assumed a system maximum-day factor of 1.71 times the average day and a system peak-hour factor of 2.56 times the average day for the Test Year.

[17] These concepts are described in more detail in AWWA's M1 Manual
[18] Per California Code of Regulations (CCR), Title 22, Section 64554.

2. We divided total annual demand (see Figure 19) by 365 days to determine the system average day and multiplied that value by the maximum-day (1.71) and peak-hour (2.65) factors to determine the system maximum day and peak hour, respectively.
3. Each class' maximum-day demands were determined by dividing the class' peak month by the system peak month, and the resulting percentage was then multiplied by the estimate for the system maximum day (i.e., each class was allocated a proportionate share of the system maximum day based on its respective peak-month measured demand).
4. Peak-hour demand by class was calculate by multiplying each class's maximum-day demands by 1.5.

The results are summarized in Table 14.

Table 14 - Water Demand and Peaking Factor Summary[19]

	Average Day (ccf)	Max Day Factor	Max-Day Demand (ccf)	Max-Hr Factor	Max-Hr. Demand (ccf)
Single Family Residential	20,341	1.76	35,734	2.64	53,601
Multi-Family Residential	2,948	1.44	4,248	2.16	6,372
Commercial	3,052	1.59	4,838	2.38	7,256
Irrigation	4,240	2.24	9,483	3.35	14,225
Fire Hydrant	40	4.51	180	6.76	270
Private Fire Protection	3	1.83	5	2.74	8
Public Fire Protection	-	0.00	642	0.00	3,850
Total	**30,624**	**1.80**	**55,130**	**2.79**	**85,582**

3.1.5. Customer Counts, Meters in Service, and Customer Service Units

The number of customers and meters in service is another measure of demand for certain costs. Meter costs are related to the number and size of the meters in service, while other customer costs are related to the number of customers served. We determined equivalent meters (i.e., all meter sizes stated in terms of multiples of a single-family meter) and number of customer accounts Table 15 summarizes the number of units for both of these metrics in FY 2013.

[19] These maximum-day and peak-hour estimates are estimates of these demand measurements to be used for ratemaking purposes. They are meant to be reasonable approximations of maximum-day and peak-hour demand and should not be construed as actual measurements.

Table 15 – FY 2013 Water Customer Metrics

	Number of Accounts	Number of Equivalent Meters	Total Annual Usage (ccf)
Residential	47,168	47,478	7,424,526
Multi-Family	2,051	10,378	1,076,035
Commercial	1,808	7,548	1,113,966
Irrigation	1,331	6,391	1,547,630
Private Fire Protection	954	28,929	1,081

To add more detail to the customer unit data shown above, the number of meters in service by size is provided in Table 16.

Table 16 – Summary of Water Meters by Size and Customer Class

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"	3"	4"	6"	8"	10"	Total Count
Equivalent Meter Ratio	1.0	1.0	1.0	3.3	5.3	8.5	11.7	20.0	41.7	60.0	96.7	
Residential	109	35,923	11,022	92	22	-	-	-	-	-	-	**47,168**
Multi-Family	-	18	95	220	1,688	-	18	10	-	2	-	**2,051**
Commercial	4	291	336	292	807	-	27	42	5	3	1	**1,808**
Irrigation	-	24	93	192	1,007	-	7	7	1	-	-	**1,331**
Private Fire Protection	-	-	64	57	160	28	51	93	303	181	17	**954**
Total	**113**	**36,256**	**11,610**	**853**	**3,684**	**28**	**103**	**152**	**309**	**186**	**18**	**53,312**

Fire protection capacity was added to reflect a fire flow requirement of 2,000 gallons per minute (gpm) for 4-hour duration, yielding a 64,167 maximum-day demand and a 385,001 peak-hour demand. The methodology used for calculating fire protection demands and associated costs was obtained from the M1 Manual (Chapter 30), which is produced by the American Water Works Association.

3.1.6. Procedure 1: Functionalize Water System Costs

O&M costs of water service were analyzed and segregated by system function. The functional categories and their associated values were instrumental in determining the proper allocation of the O&M costs to the various classes of customers based on their characteristics. The functions included in the cost-of-service study were as follows:

- Pumping
- Treatment/Supply
- Storage
- Transmission
- Distribution
- Meters
- Fire

- Customer Service
- Billing
- WUE (Conservation Program, three levels of effort)
- General/Administrative

Table 17 provides a summary of the Test Year O&M expenses by function. The values were assigned based on reviewing each line item of the District's O&M budget.

Table 17 – Water System FY 2015 O&M Budget by Function

System Function	Total
Pumping	$1,433,192
Treatment/Supply	28,334,128
Storage	771,451
Transmission	2,104,901
Distribution	1,780,818
Meters	3,095,063
Fire	70
Customer Service	794,274
Billing	496,136
Basic WUE	735,464
Escalated WUE	735,464
Aggressive WUE	1,470,927
General / Admin (O&M)	4,727,617
Total	**$46,479,506**
General Fund Budget	**$43,537,651**
WUE Budget	**$2,941,855**

Similar to O&M, the capital costs of the water utility were analyzed and segregated by system function. The functional categories listed above are instrumental in determining the proper allocation of capital costs to respective classes of customers based on their characteristics. The values for each function were determined by assigning the net value of each of the District's asset to a specific function or functions in the established categories.

The functionalized asset listing was utilized, in large part, to determine the Test Year capital costs attributable to each function. In order to accomplish this, the Test Year capital costs were multiplied by the percentage of fixed assets by function. The total Test Year cash-needs capital costs for the water system are $12.3 million (the amount needed to be funded through rate revenue). A summary of the net capital assets by function and the resultant capital budget allocation by function can be found in Table 18.

Table 18 – Water System Plant in Service and FY 2015 Capital Budget Allocation by Function

System Function	Plant in Service	Percent of Total Net Assets	FY2015 Capital Budget Allocation
Pumping	$12,896,968	9.8%	$1,207,834
Treatment/Supply	$3,288,848	2.5%	$308,009
Storage	$23,895,143	18.1%	$2,237,841
Transmission	$46,253,235	35.1%	$4,331,733
Distribution	$8,147,319	6.2%	$763,017
Meters	$5,813,361	4.4%	$544,436
Fire	$323,461	0.2%	$30,293
General / Admin (CAP)	$30,978,110	23.5%	$2,901,179
Customer Service	$211,789	0.2%	$19,835
Total	**$131,808,234**		**$12,344,176**

3.1.7. Procedure 2: Allocate Costs Based on Customer Service Characteristics

The functionalized O&M and capital costs are then assigned to the cost categories described in Section 3.1.2. The O&M and capital costs are allocated to various classes of customers based on the respective customer class' system demand and usage characteristics. A summary of the Test Year assignment of O&M and capital costs to each of the customer classes are shown in Table 19 and Table 20. The ratios and relative values in Table 14 and Table 15 were used to functionalize the capital costs shown in Table 17 and Table 18.

Table 19 - Allocation of Functionalized Water System Capital Costs

	Base	Max-Day	Max-Hour	Customer	Meter	Totals
Residential	$3,664,401	$2,571,580	$1,153,149	$22,940	$335,475	$7,747,545
Multi-Family	531,081	217,195	137,088	998	73,333	959,694
Commercial	549,802	298,300	156,108	879	53,333	1,058,423
Irrigation	763,838	875,940	306,028	647	45,155	1,991,608
Construction Meter	7,184	23,370	5,801	-	-	36,356
Private Fire Protection	534	410	175	464	204,408	205,990
Public Fire Protection	-	112,248	232,312	-	-	344,560
TOTALS	**$5,516,840**	**$4,099,043**	**$1,990,661**	**$25,928**	**$711,704**	**$12,344,176**
	45%	**33%**	**16%**	**0.2%**	**6%**	

Table 20 - Allocation of Functionalized Water System O&M Costs

	Base	Max-Day	Max-Hour	Customer	Meter	WUE and Water Resources	Totals
Residential	$23,046,586	$1,463,456	$933,405	$1,280,771	$1,636,632	$1,643,084	$30,003,934
Multi-Family	3,340,137	123,603	110,965	55,692	357,757	102,046	4,090,199
Commercial	3,457,879	169,759	126,360	49,093	260,189	437,600	4,500,881
Irrigation	4,804,022	498,487	247,711	36,141	220,293	759,125	6,565,780
Construction Meter	45,184	13,300	4,696	-	-	-	63,179
Private Fire Protection	3,356	234	142	25,904	997,214	-	1,026,849
Public Fire Protection	-	61,017	167,668	-	-	-	228,685
TOTALS	**$34,697,163**	**$2,329,856**	**$1,590,947**	**$1,447,601**	**$3,472,086**	**$2,941,855**	**$46,479,506**

3.1.8. Procedure 3: Allocate Non-Rate Revenues to Customer Classes

Non-rate revenues are allocated to specific customer classes, thereby reducing the rate revenue requirement for each respective class. Non-rate revenues are applied as credits for each of the customer classes based on the same methodology described in Procedure 2. It is necessary on occasion to allocate certain non-rate revenues to specific classes or groups of classes. For example, in this case, the interest earnings from the WUE Fund were only applied to the WUE function. The District collects a 1% ad valorem property tax, of which 93% was allocated to the Water System (see Table 22). The remaining 7% was allocated to the Recycled Water System (see Section 3.1.8). The non-rate revenues are unrestricted revenues that may be used for any purpose of the District. The District elected to use the forgoing allocations of non-rate revenue based on the relative size of each system, as measured by the number of equivalent meters. Table 21 summarizes the non-rate revenue[20] credits by class.

Table 21 – Water System Non-Rate Revenue Credits by Function

	Base	Max-Day	Max-Hour	Customer	Meter	WUE and Water Resource	Total
Residential	$3,654,345	$552,036	$285,463	$178,361	$269,805	$42,753	**$4,982,763**
Multi-Family	529,624	46,625	33,936	7,756	58,978	2,655	**679,573**
Commercial	548,293	64,036	38,645	6,837	42,893	11,386	**712,090**
Irrigation	761,742	188,036	75,757	5,033	36,316	19,752	**1,086,637**
Construction Meter	7,164	5,017	1,436	-	-	-	**13,617**
Private Fire Protection	532	88	43	3,607	164,394	-	**168,665**
Public Fire Protection	-	23,012	51,260	-	-	-	**74,272**
TOTALS	**$5,501,701**	**$878,849**	**$486,540**	**$201,594**	**$572,387**	**$76,547**	**$7,717,618**
	71%	**11%**	**6%**	**3%**	**7%**	**1%**	

[20] The non-rate revenue in this table does not include Ad Valorem property tax revenue.

3.1.9. Procedure 4: Distribute Total Costs to Specific Customer Classes

The total rate revenue requirement is determined by combining the O&M and capital costs and subtracting the credits for non-rate revenues for each respective class. From the total rate revenue requirements, the Public Fire Protection revenue requirements are allocated among the remaining customer classes (except Construction Meters) based on their respective capacity demands on the distribution system. The values in the last column of Table 22 are the revenue requirements that were used when calculating the water rates for each customer class, as described in Section 4.1.

Table 22 - Total Rate Revenue Requirements by Class - Water System

	(a) Total Capital Revenue Requirement	(b) Total O&M Revenue Requirement	(c) Non-Rate Revenue Credit	(d) Ad Valorem Tax Credit	(a)+(b)-(c)-(d) Total Rate Revenue Requirement	Reallocate Public Fire Protection	Billed Rate Revenue Requirement
Residential	$7,747,545	$30,003,934	$4,982,763	$13,515,780	$19,252,936	$211,284	$19,464,220
Multi-Family	959,694	4,090,199	679,573	1,958,839	2,411,480	46,185	2,457,666
Commercial	1,058,423	4,500,881	712,090	2,027,145	2,820,070	33,590	2,853,660
Irrigation	1,991,608	6,565,780	1,086,637	2,817,341	4,653,409	28,439	4,681,849
Construction Meter	36,356	63,179	13,617	0	85,917	0	85,917
Private Fire Protection	205,990	1,026,849	168,665	0	1,064,174	179,474	1,243,648
Public Fire Protection	344,560	228,685	74,272	0	498,973	-498,973	0
TOTALS	**$12,344,176**	**$46,479,506**	**$7,717,618**	**$20,319,105**	**$30,786,959**	**$0**	**$30,786,959**

Table 23 summarizes the shift of cost responsibilities recommended by this Rate Study Report. The shifting of cost responsibilities between customer classes is a normal phenomenon as water use patterns change and better data becomes available. In this case, the reduction in cost responsibility by the Multi-Family customers was driven by the customer class' low peaking requirements. The large increase in the Private Fire Protection was due to improved estimates of the fire meters' impacts on system capacity costs through the adoption of a meter equivalency schedule that is consistent with AWWA standards.

Table 23 - Water System Cost-of-Service Comparison

Customer Class	FY 2015 Cost-of-Service Allocation	Current Revenues	Difference	
Residential	$19,464,220	$18,594,448	$869,772	5%
Multi-Family	$2,457,666	2,936,975	(479,309)	-16%
Commercial	$2,853,660	3,025,084	(171,424)	-6%
Irrigation	$4,681,849	4,292,975	388,874	9%
Construction Meter	$85,917	65,027	20,890	32%
Private Fire Protection	$1,243,648	339,448	904,200	266%

3.2. Recycled Water System Cost of Service

The cost-of-service methodology for recycled water is nearly identical to the methodology for potable water, with the exception of a few small system characteristics such as not having a fire protection component. The following will describe the results for the recycled water cost-of-service analysis, while not unnecessarily repeating the description of the methodology provided in Section 3.1.

3.2.1. Recycled Water System Customers Classes

The District currently only has one class of customer for its recycled water service (retail service), which greatly simplifies the cost-of-service analysis.

3.2.2. Water Utility Cost Allocation Methodology

Recycled Water customer demands were measured, and costs were allocated, as one of the following:

- Base costs
- Extra-capacity costs
- Customer & meter costs
- WUE costs

3.2.3. Average Daily Water Demands

Based on the best available data, this cost-of-service analysis used water usage during FY 2013 (see Table 24).

Table 24 - Recycled Water Demand

Total Annual Demand (ccf)	Average Monthly Demand (ccf)
3,063,673	255,306

3.2.4. Maximum-Day and Peak-Hour Demands

Recycled water maximum day peaking yielded a factor of 2.21 while the maximum hour yielded a factor of 3.32. The Recycled Water maximum-day and peak-hour demands results are summarized in Table 25.

Table 25 – Recycled Water Demand and Peaking Factor Summary[21]

Average Day (ccf)	Max Day Factor	Max-Day Demand (ccf)	Max-Hour Factor	Max-Hour Demand (ccf)
8,388	2.21	18,547	3.32	27,821

3.2.5. FY 2013 Recycled Water Customer Metrics

Table 26 summarizes the amount of Recycled Water used in FY 2013 by units of water in hundreds of cubic feet (ccf).

Table 26 - Recycled Water Historical Customer Units

No. of Customer Accounts	No. of Equivalent Meters	Total Annual Usage (ccf)
1,274	7,240	3,063,673

The number of Recycled Water meters-in-service by size is provided in Table 27.

Table 27 – Summary of Recycled Water Meters

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"	3"	4"	6"	8"	10"	Total Count
Equivalent Meter Ratio	1.0	1.0	1.0	3.3	5.3	8.5	11.7	20.0	41.7	60.0	96.7	
Meter Count	0	0	11	74	1,168	0	4	6	8	1	2	**1,274**

3.2.6. Procedure 1: Functionalize Recycled Water System Costs

O&M costs of Recycled Water service were analyzed and segregated by system function. The functions included in the Recycled Water cost-of-service study were as follows:

- Pumping
- Treatment/Supply
- Storage
- Transmission
- Distribution
- Meters
- Customer Service
- Billing
- WUE (Conservation Program, three levels of effort)
- General/Administrative

[21] These maximum-day and peak-hour estimates are estimates of these demand measurements to be used for ratemaking purposes. They are meant to be reasonable approximations of maximum-day and peak-hour demand and should not be construed as actual measurements.

Table 28 provides a summary of the Test Year O&M expenses by function.

Table 28 – Recycled Water System FY 2015 O&M Budget by Function[22]

System Function	FY2015 O&M Budget
Pumping	$846,146
Treatment/Supply	-221,442
Storage	303,942
Transmission	586,699
Distribution	54,079
Meters	1,184,814
Customer Service	208,102
Billing	14,787
Basic WUE	180,148
Escalated WUE	180,148
Aggressive WUE	360,297
General / Admin (O&M)	1,551,654
Total	**$5,249,374**
General Fund Total	**$4,528,781**
WUE Total	**$720,593**

The total Test Year cash-needs capital costs for the Recycled Water system are $2.49 million (the amount need to be funded through rate revenue). A summary of the net capital assets by function and the resultant capital budget allocation by function can be found in Table 29.

Table 29 – Recycled Water Plant in Service and FY 2015 Capital Budget Allocation by Function

System Function	Plant in Service	Percent of Total Net Assets	FY2015 Capital Budget Allocation
Pumping	$7,470,421	8.0%	$199,223
Treatment/Supply	11,420,951	12.2%	304,577
Storage	6,626,408	7.1%	176,715
Transmission	41,710,634	44.6%	1,112,349
Distribution	4,748,319	5.1%	126,629
Meters	1,206,469	1.3%	32,174
General / Admin (CAP)	20,208,791	21.6%	538,933
Customer Service	20,558	0.02%	548
Billing	36,265	0.04%	967
Total	**$93,448,815**		**$2,492,115**

[22] Negative value for Treatment/Supply due to one-time rebate from MWDOC

3.2.7. Procedure 2: Allocate Costs Based on Customer Service Characteristics

A summary of the Test Year assignment of O&M and capital costs to the customer service characteristics are shown in Table 30 and Table 31. The ratios and relative values in Table 25 and Table 26 were used to functionalize the capital costs shown in Table 28 and Table 29.

Table 30 - Allocation of Functionalized Recycled Water Capital Costs

Base	Max-Day	Max-Hour	Customer	Meter	Water Resources	Totals
$1,010,951	$1,224,432	$213,746	$1,933	$41,052	$0	**$2,492,115**

Table 31 - Allocation of Functionalized Recycled Water O&M Costs

Base	Max-Day	Max-Hour	Customer	Meter	Water Resources	Totals
$803,559	$973,245	$610,590	$339,057	$1,802,329	$720,593	**$5,249,374**

3.2.8. Procedure 3: Allocate Non-Rate Revenues to Customer Classes

As with the water system, non-rate revenues are applied as credits against the rate revenue requirement for Recycled Water. Again, the interest earnings from the WUE Fund were only applied to the WUE function. Table 32 summarizes the non-rate revenue credits by function. The District receives a portion of the 1% ad valorem property tax collected by Orange County, of which 7% was allocated to the Recycled Water System (see Table 33). As explained in Section 3.1.8, the other 93% was allocated to the Water System based on the relative size of each system, as measured by the number of equivalent meters.

Table 32 - Non-Rate Recycled Water Revenue Credits by Function

Base	Max-Day	Max-Hour	Customer	Meter	Water Resources	Total
$120,484	$145,926	$54,736	$22,642	$122,401	$18,750	**$484,939**

3.2.9. Procedure 4: Distribute Total Costs

The total rate revenue requirements for Recycled Water are shown in Table 33. The values in the last column are the revenue requirements that were used when calculating the Recycled Water as covered in Section 4.1.

Table 33 - Total Rate Revenue Requirements – Recycled Water System

(a) Total Capital Revenue	(b) Total O&M Revenue Requireme	(c) Non-Rate Revenue Credit	(d) Ad Valorem Tax Credit	(a) + (b) - (c) - (d) Rate Revenue Requirement
$2,492,115	$5,249,374	$484,939	$1,529,395	**$5,727,155**

3.3. Wastewater Cost of Service

The following will describe the methodology used for allocating costs to the customer classes within the Wastewater System. The methodology for allocating wastewater service costs is different from the cost-of-service methodology for water due to the fundamental differences in cost drivers. That being said, those concepts that are similar won't be explained in as much detail as provided in Section 3.1.

Customer characteristics for wastewater systems are measured in terms of estimated wastewater flows and sewage loadings. Sewage loadings are measures of the "strength" or concentrations of the wastewater being discharged to the wastewater system. The District assesses strength with two measures: (1) biochemical oxygen demand (BOD) and (2) total suspended solids (TSS). Understanding strength is important in a cost-of-service study because sewage loadings are a primary driver for the cost of treatment. In addition to flow and strength, other cost drivers include bill processing, customer service, and other administrative services that are primarily driven by the number of customers connected to the collection system.

3.3.1. Wastewater Utility Cost Allocation Methodology

Much like with water, costs in a wastewater system are incurred as a result of customer demands. In this case, customer demands were measured, and costs were allocated, as one of the following:

- **Flow**: Costs that vary with the hydraulic flow of sewage. Flow costs typically include the operating, maintenance, and capital costs associated with treatment, collection lines, lift stations, and outfall infrastructure, which are typically designed to accommodate maximum hydraulic flow rates. These costs were assigned to the customer classes based on each class' demand characteristics.
- **BOD and TSS Loadings:** Costs associated with sewage loadings. Loadings are measures of the concentrations and mass of wastes contributed to the wastewater system. SOCWA, like most wastewater utilities, measures waste composition for two primary categories: BOD and TSS. The removal of BOD is primarily associated with the degradation of organic compounds. The cost of BOD removal is measured by total BOD loadings by customer class, as described in Section 3.3.2. The cost of TSS removal is primarily associated with the separation and disposal of solids. The cost of TSS removal is measured by total TSS loadings by customer class, as described in Section 3.3.2.
- **Customer Costs:** Costs incurred as a result of serving customers are determined without regard for the amount of wastewater produced because these costs are not impacted by the amount of wastewater produced. This decision was driven by the Districts' service agreement with SOCWA whereby the District pays for SOCWA's O&M and capital costs based on the District's ownership of SOCWA facilities, not based on actual wastewater flows or composition. Customer costs include the costs of billing, customer accounting, general and administrative costs, and other related costs. Measurements of demand for customer costs are based on the number of customer accounts.

The following sections describe the measurements of demand related to each of the above.

3.3.2. Wastewater System Customers Classes and Assumptions

The District's Wastewater System is made up of the following customer classes:

- Residential
- Multi-Family
- Commercial, which is subdivided into four categories based on sewage strength, as explained below

Costs were allocated to customer classes using the same general methodology used for the current wastewater rates, whereby customers are charged based on the approximate volume and strength of their wastewater. Table 34 lists the six customer classes, along with industry standard values[23] for wastewater concentrations by customer class, including examples of the type of customers that fall into each respective class.

Table 34 – Wastewater Strength by Customer Class[24]

	BOD (mg/L)	TSS (mg/L)	Type of Accounts
Residential	213	213	Single meter residential
Multi-family	213	213	Master metered residential
Commercial 1	132	134	Banks, car washes, churches, department stores, laundromats, offices, schools and colleges.
Commercial 2	278	188	Beauty and barber shops, hospitals and convalescence, commerical laundry, repair shops, service stations and veterinarian hospitals.
Commercial 3	700	733	Hotels with dining facilities, markets with garbage disposals, mortuaries and fast food restaurants.
Commercial 4	955	783	Restaurants, auto steam cleaning and bakeries.

Wastewater flow demands are difficult to measure accurately since individual customer discharges to the wastewater system are not metered. Currently wastewater demands are estimated based on metered potable water usage. Using metered water as a proxy for the volume of wastewater discharge however doesn't fully account for the "return-to-sewer" factor, which describes how much potable water is discharged back to a sewer drain. Best available data was used to estimate the return-to-sewer factor for each respective customer class. To do this, average wintertime (December through March) water usage was compared to year-round average water usage; with the idea that in the winter the water demand is primarily for indoor use (i.e., returned to the wastewater system) while during other times of the year there is both indoor and outdoor water use. While it is acknowledged that some

[23] This study used standard user strength data published by the California State Water Quality Control Board in the Revenue Program Guidelines, Appendix G, March 1998.
[24] Sewer strength data as per the California State Water Quality Control Board (Revenue Program Guidelines, Appendix G, March 1998 Edition).

irrigation does occur during the winter, the approach uses the best available data and is applied equally (therefore equitably) to all customer classes. For purposes of this Rate Study Report, water usage data was used from FY 2012 and FY 2013. The results are provided in Table 35 .

Table 35 – Calculated Return-To-Sewer Factors by Customer Class

Class	Factor
Residential	**0.79**
Multi-Family	**0.89**
Commercial	**0.99**

Based on the assumptions listed above and using projected water usage data, the total flow and loading values by customer class were projected for the Test Year and are provided in Table 36.

Table 36 - Projected Wastewater Flows and Loading (FY 2015)

	No. of Customers (Accounts)	Equivalent Meters (Meters)	Assumed Wastewater Flow (ccf)	BOD Loadings (lbs)	TSS Loadings (lbs)
Residential	46,760	46,760	4,269,028	10,120,867	10,120,867
Multi-family	2,051	10,378	1,044,813	2,477,008	2,477,008
Commercial 1	1,229	5,071	391,686	577,187	584,470
Commercial 2	351	1,736	273,176	847,260	572,967
Commercial 3	156	580	121,330	947,538	992,659
Commercial 4	80	295	59,434	633,242	518,860

3.3.3. Procedure 1: Functionalize Costs

O&M costs for wastewater service were analyzed and segregated by distinct system functions. The functions were as follows:

- **Collection System:** Costs associated with conveying sewage from the customer site to treatment facilities.
- **Treatment Admin:** Costs associated with the administrative function at SOCWA.
- **Treatment Flow:** Costs associated with the conveyance of sewage through the treatment plant(s).
- **Treatment BOD:** Costs associated with the removal of BOD.
- **Treatment TSS:** Costs associated with the removal of TSS.
- **Billing**: Costs associated with billing customers for wastewater services.
- **Customer Service:** Costs associated with serving customers.
- **General/Administrative:** District overhead costs.

Table 37 provides a summary of the Test Year O&M expenses by function.

Table 37 – Wastewater System FY 2015 O&M Budget by Function

System Function	Total
Collection System	$4,580,256
Treatment Admin	953,996
Treatment Flow	2,892,442
Treatment BOD	2,103,934
Treatment TSS	1,701,867
Customer Service	156,075
Billing	445,644
General / Admin (O&M)	2,289,359
TOTAL*	**$15,123,572**

* FOG costs expected to be collected through non-rate revenue

Similar to O&M, the capital costs of the wastewater utility were analyzed and segregated by system function. Like with water, the functions were determined by reviewing the District's most recent listing of capital assets and functionalizing those assets, net of depreciation, in the established categories. The functionalized asset listing was used to determine the Test Year capital costs attributable to each function. The total Test Year cash-needs capital costs for the water system are $4.5 million (the amount needed to be funded through rate revenue). A summary of the net capital assets by function and the resultant capital budget allocation by function can be found in Table 38.

Table 38 – Wastewater System Plant in Service and FY 2015 Capital Budget Allocation by Function[25]

System Function	Plant in Service	Percent of Total	FY 2015 Capital Budget Allocation
Collection System	$73,536,262	62%	$2,792,653
Treatment Admin	$4,725,908	4%	$179,474
Treatment Flow	$16,901,464	14%	$641,859
Treatment BOD	$10,422,470	9%	$395,809
Treatment TSS	$12,720,942	11%	$483,097
General / Admin	$943,193	1%	$35,819
Customer Service	$179,089	0.1%	$6,801
Total	**$119,429,328**		**$4,535,514**

3.3.4. Procedure 2: Allocate Costs Based on Customer Service Characteristics

The functionalized O&M and capital costs were then assigned to the cost categories described in Section 3.1.2 A summary of the Test Year assignment of O&M and capital costs to each of the customer classes

[25] Table numbers may not add up due to rounding

are shown in Table 39 and Table 40. The relative values in Table 36 were used to functionalize the capital costs shown in Table 37 and Table 38.

Table 39 - Allocation of Functionalized Wastewater Capital Costs[26]

System Function	FLOW	BOD	TSS	Customer	Totals
Residential	$2,394,860	$260,548	$323,409	$176,057	**$3,154,875**
Multi-family	586,125	63,767	79,152	7,722	**736,766**
Commercial 1	219,730	14,859	18,677	4,627	**257,893**
Commercial 2	153,247	21,812	18,309	1,322	**194,690**
Commercial 3	68,064	24,393	31,720	587	**124,765**
Commercial 4	33,342	16,302	16,580	301	**66,525**
TOTALS	**$3,455,368**	**$401,681**	**$487,847**	**$190,617**	**$4,535,514**

Table 40 - Allocation of Functionalized Wastewater O&M Costs[27]

Class	FLOW	BOD	TSS	Customer	Totals
Residential	$6,390,312	$1,495,329	$1,291,164	$1,524,420	**$10,701,225**
Multi-family	1,563,982	365,971	316,003	66,865	**2,312,820**
Commercial 1	586,316	85,278	74,563	40,067	**786,223**
Commercial 2	408,917	125,180	73,096	11,443	**618,636**
Commercial 3	181,619	139,996	126,638	5,086	**453,339**
Commercial 4	88,967	93,560	66,193	2,608	**251,328**
TOTALS	**$9,220,112**	**$2,305,314**	**$1,947,658**	**$1,650,488**	**$15,123,572**

3.3.5. Procedure 3: Allocate Non-Rate Revenues to Customer Classes

As with the Water system, non-rate revenues are applied as credits against the rate revenue requirement for Wastewater. Table 41 summarizes the non-rate revenue credits by function.

[26] Table numbers may not add up due to rounding
[27] Table numbers may not add up due to rounding

Table 41 - Non-Rate Revenue Credits by Function

Customer Class	FLOW	BOD	TSS	Customer	Total
Residential	$717,432	$143,392	$131,852	$138,868	**$1,131,543**
Multi-family	175,586	35,094	32,270	6,091	**249,041**
Commercial 1	65,825	8,178	7,614	3,650	**85,267**
Commercial 2	45,909	12,004	7,464	1,042	**66,419**
Commercial 3	20,390	13,425	12,932	463	**47,210**
Commercial 4	9,988	8,972	6,760	238	**25,957**
TOTALS	**$1,035,129**	**$221,064**	**$198,893**	**$150,352**	**$1,605,438**

3.3.6. Procedure 4: Distribute Total Costs to Specific Customer Classes

The total rate revenue requirements for the Wastewater System are shown in Table 42. The values in the last column are the revenue requirements that were used when calculating the Wastewater rates for each customer class, as described in Section 4.2.1.

Table 42 - Total Rate Revenue Requirements – Wastewater System

	(a) Total Capital Revenue Requirement	(b) Total O&M Revenue Requirement	(c) Non-Rate Revenue Credit	(a) + (b) - (c) Total Rate Revenue Requirement
Residential	$2,134,873	$10,701,223	$1,131,343	$12,724,336
Multi-family	736,766	2,312,820	249,041	2,800,545
Commercial 1	237,893	786,223	85,267	938,850
Commercial 2	194,690	618,636	66,419	746,906
Commercial 3	124,765	453,339	47,210	530,894
Commercial 4	66,525	251,329	25,957	291,896
	$4,535,514	$15,123,572	$1,605,438	$18,053,647

Table 43 summarizes the shift of cost responsibilities recommended by this Rate Study Report. The shifting of cost responsibilities between customer classes is a normal phenomenon as service requirements change and better data becomes available. In this case the reduction in cost responsibility by the Multi-Family customers was driven by the recognition of the customer class' low sewage loadings and high return-to-sewer ratio. Those costs, in turn, shifted to other customer classes such as the commercial customers with higher sewage strengths.

Table 43 - Wastewater System Cost-of-Service Comparison

Customer Class	FY 2014 Cost-of-Service Cost Allocation	Current Revenue	Difference	
Residential	$12,724,556	$11,879,081	$845,476	7%
Multi-family	2,800,545	3,414,914	(614,369)	-18%
Commercial 1	958,850	619,451	339,398	55%
Commercial 2	746,906	451,985	294,922	65%
Commercial 3	530,894	242,356	288,538	119%
Commercial 4	291,896	132,354	159,542	121%

3.3.7. FOG Program

The District has a FOG program that is administered by a third party. The current FOG fees collect approximately $35 thousand per year, while this cost-of-service study found that the total cost of the program is actually $215 thousand per year. The District staff's intention is to update the FOG fees and apply them to all applicable accounts in the near future.

4. Rate Design & Rate Schedule Recommendation

The following explains how the recommended rates were designed in a manner such that they will comply with the cost-of-service results and address District pricing objectives. The recommended rate schedules are designed to recover the revenue requirement particular to a customer class such that each class pays its own proportionate share the costs of services, and customers within each customer class pay their proportionate share of the cost of providing service.

4.1. Water and Recycled Water Rates

4.1.1. Current Water and Recycled Budget Allocations

The District currently provides potable and recycled water service to customers via a Water Budget Based Rate Structure ("WBBRS") which is made up two parts:

1. Basic Service Charge; and
2. Consumption Charge.

The Basic Service Charge is a fixed charge that is assessed based on the meter size at the service address.

The Consumption Charge is a variable charge, which is determined by the amount of water served to the property and is measured in ccf. Each customer receives an allocation (also referred to as a "budget") of water that is individualized to their indoor and outdoor water needs. This is done for purposes of equity since some accounts require more water than others. For example, a large home with a large yard requires more water than a condominium with a small yard. Moreover, businesses use water in a variety of different ways. The goal of the WBBRS is to individualize the water rate structure such that the lower tier rates reflect the reasonable water needs of each respective customer and proportionately allocate the costs associated with providing water service. Those customers who are efficient with their water use and stay within their allocations will be able to pay the lowest rates. Those who use water in excess of their budget pay for incremental costs associated with the greater demands that they place on the water system.

Residential and Multifamily Customer Water Budgets

Current Residential and Multi-Family water allocations are made up of two budgets: an indoor budget and an outdoor budget. The indoor water budget is calculated using the following three factors:

1. 65 gallons of water per person per day (gpcd).
2. The number of people in the household (assumed to be 4 per Residential account or 3 per Multi-family unit).
3. The number of days in the billing cycle.

As an equation, the indoor water budget allocation is expressed as follows:

$$Indoor\ Water\ Allocation = [Household\ Size]x[65\ gallons]x[Days\ Billed]$$

The outdoor water budget is calculated based on the following three factors:

1. Amount of irrigated area per parcel, based on County Assessor parcel data and the District's Geographic Information System (GIS), site measurements for all non-residential accounts, and aerial imagery where appropriate.
2. Actual daily evapotranspiration (ET) as measured at 110 virtual weather stations that calculate data for distinct microclimate zones within the District's service area. ET is the amount of water that is lost due to evaporation and plant transpiration. ET will vary due to factors such as wind, humidity and temperature.
3. A plant factor which reflects the water needs of specific types of plants. Currently the District uses a plant factor of 0.8, which is associated with water-thirsty grass.

   As an equation, the outdoor water budget allocation is expressed as follows:

$$Outdoor\ Water\ Allocation = [Actual\ evapotranpiration\ (inches)]x[Irrigation\ Area(ft^2)]x[0.8\ (Plant\ Factor)]$$

Residential and Multifamily customer rates are ultimately made up of five tiers, as follows:

Tier 1 - Indoor water budget (see above)
Tier 2 - Outdoor water budget (see above)
Tier 3 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 25%.
Tier 4 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 50%.
Tier 5 – All remaining water usage

Irrigation and Recycled Water Customer Water Budgets

Irrigation and Recycled Water customers also have a two-part budget. The first budget consists of a 20 ccf of water per month allowance for all Irrigation customers. The second budget is determined by the account's outdoor budget, which is calculated in the same manner as residential outdoor budgets (see above). Irrigation and Recycled Water customer current rates are ultimately made up of five tiers, as follows:

Tier 1 – 20 ccf allowance (see above)
Tier 2 - Outdoor water budget (see above)
Tier 3 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 10%.
Tier 4 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 20%.
Tier 5 - All remaining water usage.

Commercial Customer Water Budgets

Commercial customers also have a two-part budget. Like Irrigation customers, the first budget consists of a 20 ccf allowance for all Commercial customers. The second budget is calculated based on a three-year rolling average of each customer's monthly water use. Commercial customer rates are ultimately made up of five tiers, as follows:

Tier 1 – 20 ccf allowance (see above)
Tier 2 – Average monthly use (see above)
Tier 3 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 10%.
Tier 4 - Based on exceeding the combined Tier 1 and Tier 2 water budget by up to 20%.
Tier 5 - All remaining water usage.

Variance Program

Each customer class has the ability to apply for temporary or permanent variances from the above described budget allocations, as described by the District's adopted variance program rules.

4.1.2. Current Water and Recycled Water Rates

Table 44 summarizes the current rate schedule for all Water and Recycled Water customers.

Table 44 – Current Water and Reycled Water Rate Schedule

	Tier Rates ($/ccf)			Service Charge*	
	Residential, Multifamily & Commercial	Irrigation	Recycled Water	Meter Size	Monthly Rate
Tier 1	$1.38	$1.54	$1.23	5/8"	$10.36
Tier 2	$1.54	$1.54	$1.23	3/4"	$10.36
Tier 3	$2.75	$2.75	$2.20	1"	$10.36
Tier 4	$5.51	$5.51	$4.41	1 1/2"	$34.53
Tier 5	$11.02	$11.02	$8.81	2"	$55.25
				3"	$120.87
				4"	$207.20
				6"	$431.67
				8"	$621.60
				10"	$1,001.47

* Residential water meters are all assumed to be either 5/8", ¾" or 1" and billed at the same current monthly rate of $10.36 per month.

Figure 19 and Figure 20 presents the current share of Water and Recycled Water revenue received from each tier, respectively.

Figure 19 – Current Volumetric Water Revenue by Tier

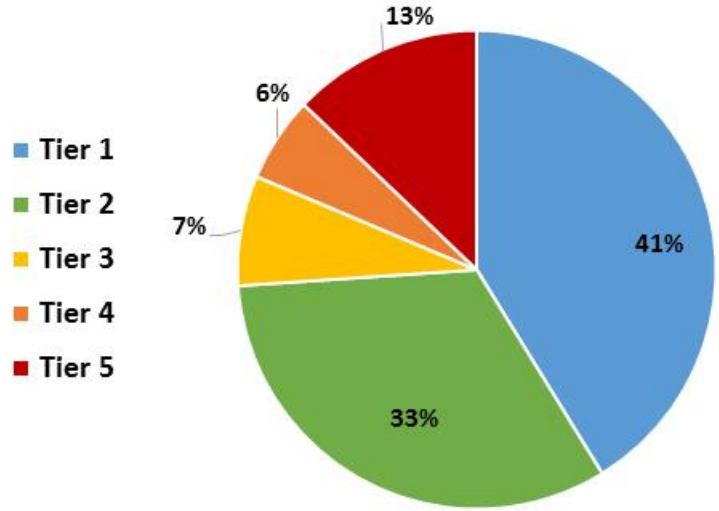
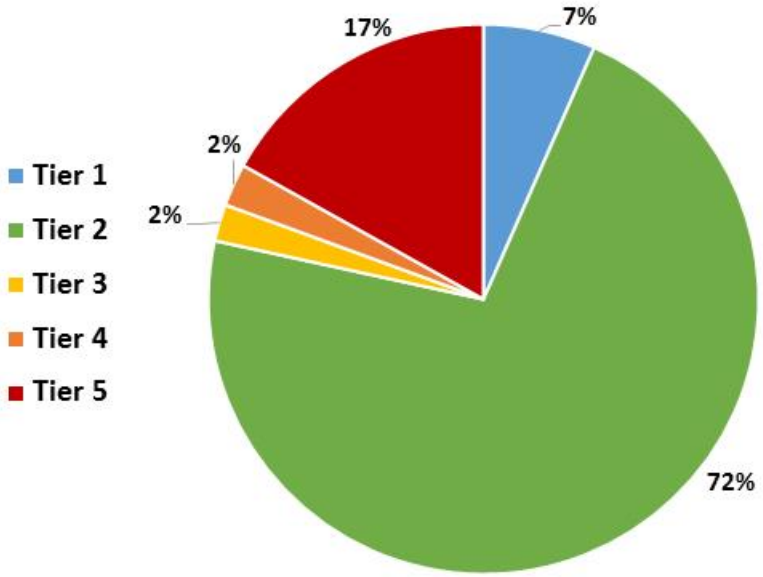


Figure 20 – Current Volumetric Recycled Water Revenue by Tier



Part of the rate revenue derived from Tiers 4 and 5 above the Tier 2 rate is used to support the WUE Fund.

Private Fire Protection and Construction Meters

The District also has a monthly service charge and volumetric usage charge for private fire protection and construction meters (known as "Hydrant" accounts). Fire Protection rates are currently charged based on a linear meter equivalency scale, which is not a common practice in the industry. These charges are reflected below in Table 45 and Table 46.

Table 45 – Current Private Fire Protection Rates

Fire Protection Rates	
Volumetric Rate = $2.29 / ccf	
Meter Size	Monthly Rate
1"	$6.28
1.5"	$9.42
2"	$12.56
2.5"	$15.70
3"	$18.84
4"	$25.12
6"	$37.68
8"	$50.24
10"	$62.80

Table 46 – Current Construction Meter Rates

Hydrant Rates	
Volumetric Rate =	$2.29 / ccf
Fixed Monthly Rate =	$78.45

4.1.3. Proposed Changes to Water and Recycled Water Rate Structure

This Rate Study Report recommends retaining the same basic rate structure for water rates with the following modifications:

1) GPCD – Recommend a reduction of the indoor gpcd allocation from 65 gallons to 60 gallons to be more aligned with the estimated actual indoor water use within the District[28] and to address the water use goals expressed by the California Department of Water Resources (which has expressed a goal of 55 gpcd).
2) Plant Factor – Recommend a reduction of the outdoor water budget plant factor from 0.80 to 0.70 to be aligned with the water needs of plants that are native to the District's service area and guidelines provided by the California's SBx7-7 water conservation mandate and Model Water Efficient Landscape Ordinance pursuant to AB 1881 Section 65597. This change is not applicable to some designated high-use public spaces which require more water to maintain turf health, as well as Recycled Water rates due to the fact that recycled water has higher salt content and therefore requires more water to avoid salt accumulation in the soil.

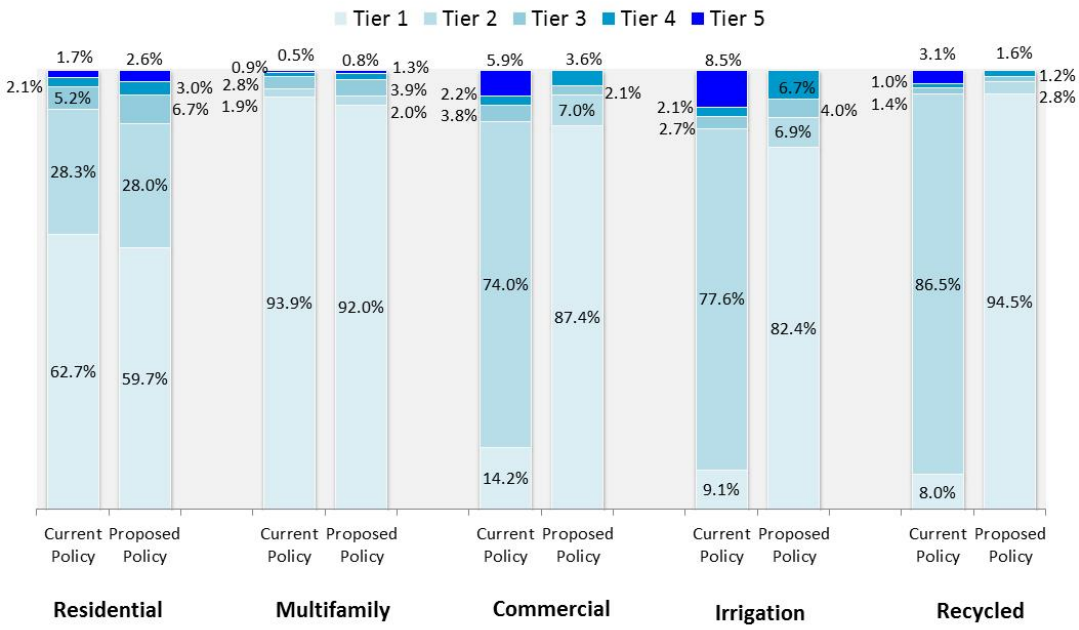
[28] The indoor water usage in the District was estimated by dividing each Multi-Family account's FY 2013 water usage by each account's respective household size. This should yield the approximate per capita indoor water usage since Multi-Family customers use approximately all of their water indoors. The average usage was 55 GPCD with 72% of Multi-Family accounts using less than 60 GPCD indoors.

3) Number of Tiers – Recommend eliminating the 20 ccf Tier 1 allowance for Commercial, Irrigation, and Recycled water customers, thereby creating a 4-tier rate structure for those customers.
4) Non-budget Tier Allocations – Recommend making the budget allocation for the (new) Tier 2 and Tier 3 for Commercial and Irrigation customers each equal to 25% of their budget (as opposed to the current 10% allocation), thereby giving each customer class the same relative allocation in this regard.
5) Universal Tiered Rates & Tailored Service Charge Rates – The cost-of-service analysis yielded the costs of providing Water and Recycled Water service to each respective customer class. The primary drivers for the difference in cost for providing service were due to (1) distribution capacity requirements and (2) number of accounts. The distribution capacity requirements for a customer class are determined by both the volume of water that they require and their peaking behavior (i.e., the amount of distribution capacity they require during their peak demands). Since these cost drivers are both fixed in nature, the District has elected to recover those costs through the fixed Service Charge. As such, it is recommended that each Water customer class have its own respective fixed Service Charge schedule and that all Water customers pay the same unit price for volumetric water rates. It is proposed that Recycled Water pay the same Service Charge as Irrigation customers (since their capacity requirements are similar) and the volumetric rates are unique to Recycled Water customers (since the cost of recycled water is different from the cost of potable water).
6) Rate Revenue Allocation to WUE Fund: All Water rate revenue in excess of $2.27 per ccf (which is approximately the marginal cost of purchasing water from MWDOC) will be designated for the WUE Fund. In other words, the first $2.27 of every unit of potable water sold will be designated for the District's General Fund, and in the case of Tier 3, 4 and 5 for residential customers and Tier 2, 3, & 4 for non-residential customers (hereafter referred to as the "upper tiers") the revenue in excess of that amount will be designated for the WUE Fund. The rates for the non-budget tiers were established based on the volume of water currently sold in those tiers and the revenue requirements of the WUE Fund. In the case of Recycled Water, this delineation of revenue to the General Fund and the WUE Fund is above and below $1.44 per ccf, respectively.

   The purpose for charging incrementally more expensive rates with each tier is to collect WUE program revenue from those users that are creating the greatest demand on the system, and therefore driving the costs of the program. Those water users that stay within their allocation are not charged for WUE program costs. The more that a water customer exceeds their allocation, the more conservation effort is required from the District's WUE program. As such, the inclining tiers result in collecting the most WUE program revenue from those customers that enter into the upper tiers.

The first three policies described above will result in more water usage in the upper tiers. Since rate setting must, by definition, remain revenue neutral, there is no fiscal impact to making these changes to the rate structure. As the allocation of water in the budgets is reduced, and as more consumption occurs in the upper tiers, the overall water rates will be reduced in order to remain revenue neutral. Figure 21 shows the impact of proposed policy changes.

Figure 21 – Comparison of Percentage of Consumption by Tier



4.1.4. Recommended Water & Recycled Water Rates

The recommended rate schedules for Water and Recycled Water for FY 2015 are summarized in Table 47. As described in Section 4.1.3, the volumetric rates are the same between all Water customer classes and marginally lower for Recycled Water (reflecting the lower cost of water supply for Recycled Water). The intention of making the volumetric rates for potable water the same for all customer classes is to reflect the fact that cost of potable water is largely the same, irrespective of the customer demands. The fixed Service Charge, on the other hand, varies significantly between customers classes, reflecting the fixed costs associated with service demands of each customer class. These fixed cost drivers include system capacity, peaking factors, meter maintenance, billing costs, and customer service support.

The recommended rate schedule was designed in order to meet the cost-of-service results by customer class, as reported in Table 22. These costs were calculated using a complex model which calculated anticipated revenue based the current water use patterns of existing customers. As explained in Section 4.1.3, all volumetric rate revenue from rates at or below $2.27 (in FY 2105) is used to meet the revenue requirements of the General Fund. All Water rate revenue from volumetric rates above $2.27 is used to meet the revenue requirements of the WUE Fund. As explained in Section 2.10, those customers who exceed their allocation are those that drive the costs of the WUE program, and therefore shall bear the costs of the program. Since the proposed rate adjustments will only be for the General Fund (not the WUE Fund) the threshold of $2.27 will be increased by the same adjustment from FY 2016 onward.

Table 47 – Recommended Water and Recycled Water Rate Schedule – Effective April 1, 2015*

Volumetric Rates ($/ccf) WUE Threshold: $2.27						Service Charge ($/month)					
Residential & Multifamily		Commercial & Irrigation		Recycled Water		Meter Size	Residential	Multifamily	Commercial	Irrigation	Recycled
Tier 1	$1.41	Tier 1	$1.61	Tier 1	$1.17	5/8"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 2	$1.61	Tier 2	$2.49	Tier 2	$1.66	3/4"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 3	$2.49	Tier 3	$4.25	Tier 3	$3.42	1"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 4	$4.25	Tier 4	$9.04	Tier 4	$8.21	1 1/2"	$35.97	$22.13	$19.77	$56.27	$56.27
Tier 5	$9.04					2"	$57.55	$35.41	$31.63	$90.03	$90.03
						3"	$125.89	$77.47	$69.19	$196.94	$196.94
						4"	$215.80	$132.80	$118.60	$337.60	$337.60
						6"	$449.94	$276.89	$247.28	$703.90	$703.90
						8"	$647.40	$398.40	$355.80	$1,012.80	$1,012.80
						10"	$1,043.39	$642.09	$573.43	$1,632.30	$1,632.30

* For potable water, volumetric rates above the $2.27/ccf threshold will be designated for the WUE Fund. The threshold for Recycled Water is $1.44

The District also has a monthly service charge and volumetric usage charge for private fire protection and construction meters. These charges are reflected below in Table 48 and Table 49.

Table 48 – Proposed Private Fire Protection Rates – Effective April 1, 2015

Meter Size	Meter Equivalency Schedule	Current Rate ($/month)	Proposed Rate ($/month)
5/8"	1.00	$6.28	$3.58
3/4"	1.00	$6.28	$3.58
1"	1.00	$6.28	$3.58
1 1/2"	3.33	$9.42	$11.94
2"	5.33	$12.56	$19.11
2.5"	8.50	$15.70	$30.45
3"	11.67	$18.84	$41.80
4"	20.00	$25.12	$71.65
6"	41.67	$37.68	$149.27
8"	60.00	$50.24	$214.95
10"	96.67	$62.80	$346.31

Table 49 – Proposed Construction Meter – FY 2015

Meter Charge ($/month)	$114.78
Volumetric Charge ($/ccf)	
Potable Water	$2.45
Recycled Water	$2.38

A complete 3-year schedule of the proposed Water and Recycled Water Rates, escalated as recommended in Section 2.9 of this Rate Study Report, are provided as Appendix G.

4.2. Wastewater Rate Design

4.2.1. Current Wastewater Rates

The District's current rate structure for wastewater rates which is made up of two parts:

1. Sewer Service Charge; and
2. Volumetric Charge.

The Sewer Service Charge is a fixed charge that is assessed per dwelling unit (and sometimes sewer lateral), regardless of water meter size. The volumetric charge is a variable charge that is determined by the amount of water served to the property and is measured in ccf. Residential customers are charged a maximum volumetric charge of 25 ccf per account and multifamily customers are charged the same maximum per dwelling unit.

The volumetric rates for non-residential customers also depend on the type of business and the associated wastewater strength for that classification.

Non-residential customers (typically commercial) are assigned to one of the four classes below based on the type of commercial activity. These classifications were choosen due to the availabile data on District customers and the availalability of industry-standard strength data for such classifications.

- **Commercial Class 1:** Typical users include residential, bank, car washes, churches, department and retail stores, Laundromats, professional offices, schools and colleges.
- **Commercial Class 2:** Typical users include beauty and barber shops, hospital and convalescent facilities, commercial laundry, repair shops, service stations and veterinary hospitals.
- **Commercial Class 3:** Typical users include hotels with dining facilities, markets with garbage disposals, mortuaries and fast-food restaurants.
- **Commercial Class 4:** Typical users include restaurants, auto-steam-cleaning facilities and bakeries.

A summary of current Wastewater Rates is provided in Table 50.

Table 50 – Current Wastewater Rate Schedule

Service Charge ($ / month / lateral)	Volumetric Rates ($ / ccf)	
$11.14	**Residential**	$0.88
	Commercial	
	Class 1	$0.88
	Class 2	$1.19
	Class 3	$1.51
	Class 4	$1.82

4.2.1. Proposed Changes to Wastewater Rate Structure

This Rate Study Report recommends eliminating the volumetric portion of the wastewater rates in favor of fixed rates based on meter size. There are two primary drivers for this recommendation:

1) The District's costs to provide sewer service are almost entirely fixed. The only costs that vary with wastewater volume are some limited pumping and chemical costs.
2) Concern regarding the equity of charging a volumetric wastewater rate based on metered water usage when some customers use significant quantities of water outdoors rather than returning it to the sewer.

4.2.2. Recommended Wastewater Rates

Using the results of the cost-of-service analysis, the District recommends the following wastewater rate schedule based on meter size (see Table 51). Residential customers are charged only one rate (the equivalent of a 1" meter).

Table 51 – Proposed Wastewater Rate Schedule – FY 2015

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"
Single Family Residential	$22.68	$22.68	$22.68	$22.68	$22.68	$22.68
Multi-family Residential	$24.72	$24.72	$24.72	$75.90	$119.77	$119.77
Commercial 1	$17.87	$17.87	$17.87	$53.05	$83.22	$83.22
Commercial 2	$38.07	$38.07	$38.07	$120.39	$190.96	$190.96
Commercial 3	$78.32	$78.32	$78.32	$254.54	$405.60	$405.60
Commercial 4	$84.49	$84.49	$84.49	$275.11	$438.53	$438.53

Meter Size	3"	4"	6"	8"	10"
Single Family Residential	NA	NA	NA	NA	NA
Multi-family Residential	$258.72	$441.52	$916.83	$1,319.01	$2,123.37
Commercial 1	$178.75	$304.43	$631.22	$907.72	$1,460.74
Commercial 2	$414.46	$708.50	$1,473.04	$2,119.93	$3,413.76
Commercial 3	$884.04	$1,513.46	$3,150.05	$4,534.81	$7,304.41
Commercial 4	$956.06	$1,636.92	$3,407.27	$4,905.21	$7,901.16

A complete 3-year schedule of the Wastewater rates, escalated as recommended in Section 2.9 of this Rate Study Report, is provided as Appendix G.

5. Conclusion

This Rate Study Report used methodologies that are aligned with industry standard practices for rate setting as promulgated by AWWA and WEF and all applicable law, including Proposition 218. The rate adjustments recommended by the Long Range Financial Plan for FY 2015 are included in rate recommendations presented in Section 4. As such, those recommended rates will need to be adjusted annually, as described in the Long Range Financial Plan and Section 2.9 of this report.

The District's WBBRS has proven to be an effective demand-side management tool that allows the District to equitably share target usages by providing targeted messaging to the public regarding efficient water use and maximizing essential use during water shortages. On July 28, 2014, the State of California (State) adopted drought emergency water conservation regulations in response to the Governor's call for action to address the severe statewide drought. The District's WBBRS contributes towards the District's ability to comply with the current requirements of the State's Section 865 Mandatory Actions by Water Suppliers and plays a key role in the District's ability to achieve a level of conservation that is superior to that achieved by implementing limitations on outdoor irrigation of ornamental landscapes or turf with potable water. To date, the District's WBBRS has allowed the District to realize a 26 percent reduction in its potable water use since its peak use during 2007[29]. While most communities experience a rebound in water usage when restrictions are lifted, the District's water usage increased minimally, despite economic recovery, three percent population growth, and a relatively dry climate. This long-term sustained reduction in demand demonstrates the effectiveness of the WBBRS. Moreover, WBBRS has allowed the District to avoid imposing water day restrictions on its customers. We believe that WBBRS will continue to be an important demand-side management tool for the District as it continues to monitor water use behaviors and manage the District's limited water resources.

The adjustments to the Wastewater rates will provide revenue stability and continue to equitably and proportionately recover costs from the appropriate customers.

[29] Plan for Alternative Demand Reductions, August 15, 2014

Appendix A – Water System Proforma – Projections with No Rate Adjustments

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790
Ad Valorem Property Tax Revenue	$ 20,319,105	$ 20,519,055	$ 20,929,436	$ 21,348,025	$ 21,774,985	$ 22,210,485	$ 22,654,695	$ 23,107,789	$ 23,569,944	$ 24,041,343
Cellular Lease Income	$ 957,000	$ 946,000	$ 897,237	$ 885,296	$ 847,652	$ 858,405	$ 873,720	$ 889,285	$ 905,104	$ 921,181
Connection Fees	$ 339,265	$ 680,988	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533
Tax Credit Subsidy	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147
AMP RPOI	$ 3,523,663	$ 6,968	$ 6,834	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 293,956	$ 330,249	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236
General Obligation Property Tax	$ 6,227,747	$ 6,240,500	$ 6,365,900	$ 1,419,500	$ 1,449,875	$ 1,490,375	$ -	$ -	$ -	$ -
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 1,193,141	$ 1,157,920	$ 1,226,184	$ 949,919	$ 775,448	$ 733,330	$ 372,921	$ (39,667)	$ (586,992)	$ (1,265,159)
Rate Revenue Adjustments	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenues	$ 60,388,814	$ 57,416,616	$ 57,332,297	$ 52,509,446	$ 52,754,666	$ 53,199,300	$ 51,808,041	$ 51,864,112	$ 51,794,762	$ 51,604,071
Revenue Requirements										
Salaries	$ 4,741,626	$ 5,050,171	$ 5,277,429	$ 5,409,365	$ 5,544,599	$ 5,683,214	$ 5,825,294	$ 5,970,926	$ 6,120,200	$ 6,273,204
Benefits	$ 2,019,900	$ 2,126,662	$ 2,239,990	$ 2,280,130	$ 2,320,929	$ 2,362,398	$ 2,404,545	$ 2,447,382	$ 2,490,917	$ 2,535,162
Water Purchases	$ 28,514,417	$ 28,790,898	$ 28,894,760	$ 29,796,280	$ 30,809,912	$ 32,105,621	$ 33,457,850	$ 34,744,329	$ 36,108,427	$ 37,581,872
O&M	$ 7,211,338	$ 6,790,595	$ 6,948,245	$ 7,109,194	$ 7,274,210	$ 7,443,411	$ 7,616,915	$ 7,794,846	$ 7,977,331	$ 8,164,500
SOCWA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
JPA	$ 1,050,370	$ 1,254,000	$ 1,296,127	$ 1,342,945	$ 1,391,453	$ 1,441,714	$ 1,493,790	$ 1,547,748	$ 1,603,654	$ 1,661,580
Existing GO Bond Debt Service	$ 6,227,747	$ 6,240,500	$ 6,365,900	$ 1,419,500	$ 1,449,875	$ 1,490,375	$ -	$ -	$ -	$ -
COPs	$ 5,582,711	$ 5,580,016	$ 5,581,281	$ 5,578,201	$ 5,643,170	$ 5,640,763	$ 5,640,832	$ 5,637,738	$ 5,636,845	$ 5,635,195
Loans										
New Debt Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service	$ 11,810,457	$ 11,820,516	$ 11,947,181	$ 6,997,701	$ 7,093,045	$ 7,131,138	$ 5,640,832	$ 5,637,738	$ 5,636,845	$ 5,635,195
Total Revenue Requirements	$ 55,348,109	$ 55,832,841	$ 56,603,732	$ 52,935,613	$ 54,434,148	$ 56,167,495	$ 56,439,227	$ 58,142,970	$ 59,937,373	$ 61,851,513
Revenues Over (Under) Expenses	$ 5,040,705	$ 1,583,775	$ 728,565	$ (426,167)	$ (1,679,482)	$ (2,968,195)	$ (4,631,186)	$ (6,278,857)	$ (8,142,610)	$ (10,247,442)
Change in Fund Balance										
Capital Expenses	$ 27,439,944	$ 22,513,214	$ 13,777,226	$ 5,219,090	$ 4,481,154	$ 5,943,318	$ 4,838,138	$ 5,293,818	$ 8,198,284	$ 7,998,183
Bond Issuance New Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 91,338,894	$ 68,939,656	$ 48,010,217	$ 34,961,556	$ 29,316,299	$ 23,155,663	$ 14,244,150	$ 4,774,827	$ (6,797,848)	$ (23,138,742)
Ending Balance	$ 68,939,656	$ 48,010,217	$ 34,961,556	$ 29,316,299	$ 23,155,663	$ 14,244,150	$ 4,774,827	$ (6,797,848)	$ (23,138,742)	$ (41,384,367)

Appendix B – Recycled Water System Proforma – Projections with No Rate Adjustments

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591
Ad Valorem Property Tax Revenue	$ 1,529,395	$ 1,544,445	$ 1,590,778	$ 1,638,502	$ 1,687,657	$ 1,755,163	$ 1,825,370	$ 1,898,384	$ 1,974,320	$ 2,053,292
Cellular Lease Income	$ 174,000	$ 172,000	$ 163,134	$ 160,963	$ 154,119	$ 156,074	$ 158,858	$ 161,688	$ 164,564	$ 167,487
Connection Fees	$ 61,685	$ 123,816	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915
Tax Credit Subsidy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
AMP RPOI	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 53,447	$ 60,045	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679
General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 176,537	$ 155,160	$ 98,632	$ 5,319	$ (46,663)	$ (122,156)	$ (201,812)	$ (293,369)	$ (393,013)	$ (478,504)
Rate Revenue Adjustments	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenues	$ 6,700,654	$ 6,761,057	$ 6,625,730	$ 6,577,969	$ 6,568,298	$ 6,562,266	$ 6,555,602	$ 6,539,889	$ 6,519,056	$ 6,515,462
Revenue Requirements										
Salaries	$ 1,907,953	$ 2,034,165	$ 2,125,702	$ 2,178,845	$ 2,233,316	$ 2,289,149	$ 2,346,378	$ 2,405,037	$ 2,465,163	$ 2,526,792
Benefits	$ 831,110	$ 874,358	$ 920,804	$ 937,305	$ 954,076	$ 971,123	$ 988,449	$ 1,006,058	$ 1,023,954	$ 1,042,142
O&M	$ 1,044,556	$ 893,296	$ 925,175	$ 957,609	$ 991,195	$ 1,025,975	$ 1,061,991	$ 1,099,288	$ 1,137,912	$ 1,177,910
SOCWA	$ 745,161	$ 760,848	$ 774,336	$ 788,212	$ 802,316	$ 816,651	$ 831,221	$ 846,029	$ 861,079	$ 876,374
JPA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COPs	$ 296,747	$ 296,208	$ 296,461	$ 295,845	$ 308,839	$ 308,358	$ 308,371	$ 307,753	$ 307,574	$ 307,244
Loans	$ 2,507,751	$ 2,353,360	$ 2,198,955	$ 2,198,463	$ 1,700,615	$ 1,380,874	$ 1,380,338	$ 1,379,448	$ 1,184,595	$ -
New Debt Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service	$ 2,804,498	$ 2,649,568	$ 2,495,416	$ 2,494,308	$ 2,009,454	$ 1,689,231	$ 1,688,709	$ 1,687,201	$ 1,492,169	$ 307,244
Total Revenue Requirements	$ 7,333,279	$ 7,212,234	$ 7,241,434	$ 7,356,279	$ 6,990,357	$ 6,792,129	$ 6,916,748	$ 7,043,613	$ 6,980,277	$ 5,930,462
Revenues Over (Under) Expenses	$ (632,625)	$ (451,177)	$ (615,704)	$ (778,310)	$ (422,059)	$ (229,863)	$ (361,146)	$ (503,724)	$ (461,220)	$ 585,000
Change in Fund Balance										
Capital Expenses	$ 2,603,778	$ 4,356,039	$ 3,574,101	$ 1,346,095	$ 970,949	$ 1,449,560	$ 2,021,873	$ 1,782,701	$ 2,334,203	$ 2,149,591
Bond Issuance New Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 13,475,572	$ 10,239,169	$ 5,431,954	$ 1,242,149	$ (882,256)	$ (2,275,264)	$ (3,954,686)	$ (6,337,705)	$ (8,624,130)	$ (11,419,554)
Ending Balance	$ 10,239,169	$ 5,431,954	$ 1,242,149	$ (882,256)	$ (2,275,264)	$ (3,954,686)	$ (6,337,705)	$ (8,624,130)	$ (11,419,554)	$ (12,984,145)

Appendix C – Wastewater System Proforma – Projections with No Rate Adjustments

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141
Ad Valorem Property Tax Revenue	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cellular Lease Income	$ 609,000	$ 602,000	$ 570,969	$ 563,370	$ 539,415	$ 546,258	$ 556,003	$ 565,909	$ 575,975	$ 586,206
Connection Fees	$ 215,896	$ 433,356	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703
Tax Credit Subsidy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
AMP RPOI	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 187,063	$ 210,158	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878
General Obligation Property Tax										
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 590,968	$ 486,773	$ 327,451	$ 104,565	$ (47,803)	$ (368,519)	$ (749,416)	$ (1,179,881)	$ (1,614,250)	$ (2,101,197)
Rate Revenue Adjustments	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Revenues	$ 18,343,068	$ 18,472,428	$ 17,875,141	$ 17,644,657	$ 17,468,333	$ 17,154,459	$ 16,783,308	$ 16,362,749	$ 15,938,447	$ 15,461,730
Revenue Requirements										
Salaries	$ 2,915,535	$ 3,107,801	$ 3,247,652	$ 3,328,843	$ 3,412,064	$ 3,497,366	$ 3,584,800	$ 3,674,420	$ 3,766,281	$ 3,860,438
Benefits	$ 1,255,493	$ 1,322,298	$ 1,392,858	$ 1,417,818	$ 1,443,188	$ 1,468,973	$ 1,495,181	$ 1,521,818	$ 1,548,889	$ 1,576,401
O&M	$ 3,440,304	$ 3,325,941	$ 3,414,002	$ 3,504,856	$ 3,598,362	$ 3,694,605	$ 3,793,672	$ 3,895,654	$ 4,000,645	$ 4,108,740
SOCWA	$ 7,705,659	$ 7,869,152	$ 8,008,656	$ 8,152,169	$ 8,298,039	$ 8,446,302	$ 8,596,993	$ 8,750,147	$ 8,905,800	$ 9,063,988
JPA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COPs	$ 917,218	$ 915,552	$ 916,334	$ 914,430	$ 954,593	$ 953,105	$ 953,148	$ 951,235	$ 950,683	$ 949,663
New Debt Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service	$ 917,218	$ 915,552	$ 916,334	$ 914,430	$ 954,593	$ 953,105	$ 953,148	$ 951,235	$ 950,683	$ 949,663
Total Revenue Requirements	$ 16,234,210	$ 16,540,744	$ 16,979,502	$ 17,318,115	$ 17,706,245	$ 18,060,351	$ 18,423,794	$ 18,793,274	$ 19,172,296	$ 19,559,229
Revenues Over (Under) Expenses	$ 2,108,858	$ 1,931,685	$ 895,639	$ 326,541	$ (237,912)	$ (905,892)	$ (1,640,486)	$ (2,430,526)	$ (3,233,850)	$ (4,097,499)
Change in Fund Balance										
Capital Expenses	$ 17,051,150	$ 17,212,008	$ 12,621,887	$ 3,682,218	$ 6,716,629	$ 7,699,409	$ 9,179,938	$ 8,702,762	$ 7,785,668	$ 9,717,319
Bond Issuance New Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 47,164,489	$ 32,222,197	$ 16,941,874	$ 5,215,626	$ 1,859,949	$ (5,094,592)	$ (13,699,894)	$ (24,520,318)	$ (35,653,606)	$ (46,673,124)
Ending Balance	$ 32,222,197	$ 16,941,874	$ 5,215,626	$ 1,859,949	$ (5,094,592)	$ (13,699,894)	$ (24,520,318)	$ (35,653,606)	$ (46,673,124)	$ (60,487,942)

Appendix D – Water System Proforma – Projections with Recommended Financial Strategy

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790	$ 26,203,790
Ad Valorem Property Tax Revenue	$ 20,319,105	$ 20,519,055	$ 20,929,436	$ 21,348,025	$ 21,774,985	$ 22,210,485	$ 22,654,695	$ 23,107,789	$ 23,569,944	$ 24,041,343
Cellular Lease Income	$ 957,000	$ 946,000	$ 897,237	$ 885,296	$ 847,652	$ 858,405	$ 873,720	$ 889,285	$ 905,104	$ 921,181
Connection Fees	$ 339,265	$ 680,988	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533	$ 98,533
Tax Credit Subsidy	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147	$ 1,331,147
AMP RPOI	$ 3,523,663	$ 6,968	$ 6,834	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 293,956	$ 330,249	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236	$ 273,236
General Obligation Property Tax	$ 6,227,747	$ 6,240,500	$ 6,365,900	$ 1,419,500	$ 1,449,875	$ 1,490,375	$ -	$ -	$ -	$ -
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 1,196,039	$ 1,188,938	$ 1,782,074	$ 2,042,025	$ 2,009,549	$ 2,620,862	$ 2,577,456	$ 2,545,155	$ 2,445,807	$ 2,287,955
Rate Revenue Adjustments	$ 386,506	$ 2,323,018	$ 3,774,001	$ 5,015,046	$ 6,170,143	$ 7,367,979	$ 8,610,134	$ 9,898,249	$ 11,234,025	$ 12,619,224
Total Revenues	$ 60,778,218	$ 59,770,653	$ 61,662,188	$ 58,616,598	$ 60,158,910	$ 62,454,812	$ 62,622,710	$ 64,347,183	$ 66,061,585	$ 67,776,408
Revenue Requirements										
Salaries	$ 4,741,626	$ 5,050,171	$ 5,277,429	$ 5,409,365	$ 5,544,599	$ 5,683,214	$ 5,825,294	$ 5,970,926	$ 6,120,200	$ 6,273,204
Benefits	$ 2,019,900	$ 2,126,662	$ 2,239,990	$ 2,280,130	$ 2,320,929	$ 2,362,398	$ 2,404,545	$ 2,447,382	$ 2,490,917	$ 2,535,162
Water Purchases	$ 28,514,417	$ 28,790,898	$ 28,894,760	$ 29,796,280	$ 30,809,912	$ 32,105,621	$ 33,457,850	$ 34,744,329	$ 36,108,427	$ 37,581,872
O&M	$ 7,211,338	$ 6,790,595	$ 6,948,245	$ 7,109,194	$ 7,274,210	$ 7,443,411	$ 7,616,915	$ 7,794,846	$ 7,977,331	$ 8,164,500
SOCWA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
JPA	$ 1,050,370	$ 1,254,000	$ 1,296,127	$ 1,342,945	$ 1,391,453	$ 1,441,714	$ 1,493,790	$ 1,547,748	$ 1,603,654	$ 1,661,580
Existing GO Bond Debt Service	$ 6,227,747	$ 6,240,500	$ 6,365,900	$ 1,419,500	$ 1,449,875	$ 1,490,375	$ -	$ -	$ -	$ -
COPs	$ 5,582,711	$ 5,580,016	$ 5,581,281	$ 5,578,201	$ 5,643,170	$ 5,640,763	$ 5,640,832	$ 5,637,738	$ 5,636,845	$ 5,635,195
Loans										
New Debt Service	$ -	$ -	$ 1,951,543	$ 1,951,543	$ 1,951,543	$ 1,951,543	$ 1,951,543	$ 1,951,543	$ 1,951,543	$ 1,951,543
Total Debt Service	$ 11,810,457	$ 11,820,516	$ 13,898,724	$ 8,949,244	$ 9,044,588	$ 9,082,681	$ 7,592,375	$ 7,589,281	$ 7,588,388	$ 7,586,738
Total Revenue Requirements	$ 55,348,109	$ 55,832,841	$ 58,555,275	$ 54,887,156	$ 56,385,691	$ 58,119,039	$ 58,390,770	$ 60,094,513	$ 61,888,916	$ 63,803,056
Revenues Over (Under) Expenses	$ 5,430,110	$ 3,937,812	$ 3,106,913	$ 3,729,442	$ 3,773,219	$ 4,335,773	$ 4,231,940	$ 4,252,671	$ 4,172,670	$ 3,973,352
Change in Fund Balance										
Capital Expenses	$ 27,439,944	$ 22,513,214	$ 13,777,226	$ 5,219,090	$ 4,481,154	$ 5,943,318	$ 4,838,138	$ 5,293,818	$ 8,198,284	$ 7,998,183
Bond Issuance New Cash	$ -	$ -	$ 29,750,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 91,338,894	$ 69,329,060	$ 50,753,658	$ 69,833,345	$ 68,343,697	$ 67,635,763	$ 66,028,218	$ 65,422,020	$ 64,380,873	$ 60,355,259
Ending Balance	$ 69,329,060	$ 50,753,658	$ 69,833,345	$ 68,343,697	$ 67,635,763	$ 66,028,218	$ 65,422,020	$ 64,380,873	$ 60,355,259	$ 56,330,428

Appendix E – Water System Proforma – Projections with Recommended Financial Strategy

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141	$ 16,740,141
Ad Valorem Property Tax Revenue	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Cellular Lease Income	$ 609,000	$ 602,000	$ 570,969	$ 563,370	$ 539,415	$ 546,258	$ 556,003	$ 565,909	$ 575,975	$ 586,206
Connection Fees	$ 215,896	$ 433,356	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703	$ 62,703
Tax Credit Subsidy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
AMP RPOI	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 187,063	$ 210,158	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878	$ 173,878
General Obligation Property Tax										
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 593,793	$ 518,096	$ 467,967	$ 378,953	$ 394,871	$ 492,772	$ 441,213	$ 396,660	$ 408,996	$ 434,017
Rate Revenue Adjustments	$ 376,653	$ 2,373,333	$ 3,799,500	$ 4,844,224	$ 5,826,070	$ 6,841,550	$ 7,902,726	$ 9,011,655	$ 10,170,486	$ 11,381,464
Total Revenues	$ 18,722,546	$ 20,877,084	$ 21,815,157	$ 22,763,269	$ 23,737,077	$ 24,857,300	$ 25,876,663	$ 26,950,945	$ 28,132,178	$ 29,378,408
Revenue Requirements										
Salaries	$ 2,915,535	$ 3,107,801	$ 3,247,652	$ 3,328,843	$ 3,412,064	$ 3,497,366	$ 3,584,800	$ 3,674,420	$ 3,766,281	$ 3,860,438
Benefits	$ 1,255,493	$ 1,322,298	$ 1,392,858	$ 1,417,818	$ 1,443,188	$ 1,468,973	$ 1,495,181	$ 1,521,818	$ 1,548,889	$ 1,576,401
O&M	$ 3,440,304	$ 3,325,941	$ 3,414,002	$ 3,504,856	$ 3,598,362	$ 3,694,605	$ 3,793,672	$ 3,895,654	$ 4,000,645	$ 4,108,740
SOCWA	$ 7,705,659	$ 7,869,152	$ 8,008,656	$ 8,152,169	$ 8,298,039	$ 8,446,302	$ 8,596,993	$ 8,750,147	$ 8,905,800	$ 9,063,988
JPA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COPs	$ 917,218	$ 915,552	$ 916,334	$ 914,430	$ 954,593	$ 953,105	$ 953,148	$ 951,235	$ 950,683	$ 949,663
New Debt Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service	$ 917,218	$ 915,552	$ 916,334	$ 914,430	$ 954,593	$ 953,105	$ 953,148	$ 951,235	$ 950,683	$ 949,663
Total Revenue Requirements	$ 16,234,210	$ 16,540,744	$ 16,979,502	$ 17,318,115	$ 17,706,245	$ 18,060,351	$ 18,423,794	$ 18,793,274	$ 19,172,296	$ 19,559,229
Revenues Over (Under) Expenses	$ 2,488,336	$ 4,336,341	$ 4,835,655	$ 5,445,153	$ 6,030,832	$ 6,796,949	$ 7,452,868	$ 8,157,670	$ 8,959,881	$ 9,819,179
Change in Fund Balance										
Capital Expenses	$ 17,051,150	$ 17,212,008	$ 12,621,887	$ 3,682,218	$ 6,716,629	$ 7,699,409	$ 9,179,938	$ 8,702,762	$ 7,785,668	$ 9,717,319
Bond Issuance New Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 47,164,489	$ 32,601,675	$ 19,726,008	$ 11,939,776	$ 13,702,711	$ 13,016,914	$ 12,114,454	$ 10,387,384	$ 9,842,292	$ 11,016,505
Ending Balance	$ 32,601,675	$ 19,726,008	$ 11,939,776	$ 13,702,711	$ 13,016,914	$ 12,114,454	$ 10,387,384	$ 9,842,292	$ 11,016,505	$ 11,118,365

Appendix F – Water System Proforma – Projections with Recommended Financial Strategy

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024
Revenue										
Current Rate Revenue	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591	$ 4,705,591
Ad Valorem Property Tax Revenue	$ 1,529,395	$ 1,544,445	$ 1,590,778	$ 1,638,502	$ 1,687,657	$ 1,755,163	$ 1,825,370	$ 1,898,384	$ 1,974,320	$ 2,053,292
Cellular Lease Income	$ 174,000	$ 172,000	$ 163,134	$ 160,963	$ 154,119	$ 156,074	$ 158,858	$ 161,688	$ 164,564	$ 167,487
Connection Fees	$ 61,685	$ 123,816	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915	$ 17,915
Tax Credit Subsidy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
AMP RPOI	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Other Income	$ 53,447	$ 60,045	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679	$ 49,679
General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Future General Obligation Property Tax	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Investment Income	$ 177,057	$ 160,730	$ 123,578	$ 54,687	$ 34,316	$ 37,677	$ 21,801	$ 5,661	$ (6,124)	$ 9,531
Rate Revenue Adjustments	$ 69,407	$ 417,160	$ 677,723	$ 900,586	$ 1,108,014	$ 1,323,118	$ 1,546,180	$ 1,777,495	$ 2,017,370	$ 2,266,119
Total Revenues	$ 6,770,582	$ 7,183,787	$ 7,328,398	$ 7,527,923	$ 7,757,291	$ 8,045,217	$ 8,325,394	$ 8,616,415	$ 8,923,315	$ 9,269,615
Revenue Requirements										
Salaries	$ 1,907,953	$ 2,034,165	$ 2,125,702	$ 2,178,845	$ 2,233,316	$ 2,289,149	$ 2,346,378	$ 2,405,037	$ 2,465,163	$ 2,526,792
Benefits	$ 831,110	$ 874,358	$ 920,804	$ 937,305	$ 954,076	$ 971,123	$ 988,449	$ 1,006,058	$ 1,023,954	$ 1,042,142
O&M	$ 1,044,556	$ 893,296	$ 925,175	$ 957,609	$ 991,195	$ 1,025,975	$ 1,061,991	$ 1,099,288	$ 1,137,912	$ 1,177,910
SOCWA	$ 745,161	$ 760,848	$ 774,336	$ 788,212	$ 802,316	$ 816,651	$ 831,221	$ 846,029	$ 861,079	$ 876,374
JPA	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
COPs	$ 296,747	$ 296,208	$ 296,461	$ 295,845	$ 308,839	$ 308,358	$ 308,371	$ 307,753	$ 307,574	$ 307,244
Loans	$ 2,507,751	$ 2,353,360	$ 2,198,955	$ 2,198,463	$ 1,700,615	$ 1,380,874	$ 1,380,338	$ 1,379,448	$ 1,184,595	$ -
New Debt Service	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service	$ 2,804,498	$ 2,649,568	$ 2,495,416	$ 2,494,308	$ 2,009,454	$ 1,689,231	$ 1,688,709	$ 1,687,201	$ 1,492,169	$ 307,244
Total Revenue Requirements	$ 7,333,279	$ 7,212,234	$ 7,241,434	$ 7,356,279	$ 6,990,357	$ 6,792,129	$ 6,916,748	$ 7,043,613	$ 6,980,277	$ 5,930,462
Revenues Over (Under) Expenses	$ (562,697)	$ (28,446)	$ 86,965	$ 171,645	$ 766,934	$ 1,253,088	$ 1,408,646	$ 1,572,802	$ 1,943,038	$ 3,339,154
Change in Fund Balance										
Capital Expenses	$ 2,603,778	$ 4,356,039	$ 3,574,101	$ 1,346,095	$ 970,949	$ 1,449,560	$ 2,021,873	$ 1,782,701	$ 2,334,203	$ 2,149,591
Bond Issuance New Cash	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Beginning Balance	$ 13,475,572	$ 10,309,097	$ 5,924,612	$ 2,437,475	$ 1,263,025	$ 1,059,010	$ 862,539	$ 249,312	$ 39,413	$ (351,752)
Ending Balance	$ 10,309,097	$ 5,924,612	$ 2,437,475	$ 1,263,025	$ 1,059,010	$ 862,539	$ 249,312	$ 39,413	$ (351,752)	$ 837,811

Appendix G – Proposed 3-Year Rate Schedules

April 1, 2015

Water and Recycled Water*

Volumetric Rates ($/ccf) WUE Threshold: $2.27						Service Charge ($/month)					
Residential & Multifamily		Commercial & Irrigation		Recycled Water		Meter Size	Residential	Multifamily	Commercial	Irrigation	Recycled
Tier 1	$1.41	Tier 1	$1.61	Tier 1	$1.17	5/8"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 2	$1.61	Tier 2	$2.49	Tier 2	$1.66	3/4"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 3	$2.49	Tier 3	$4.25	Tier 3	$3.42	1"	$10.79	$6.64	$5.93	$16.88	$16.88
Tier 4	$4.25	Tier 4	$9.04	Tier 4	$8.21	1 1/2"	$35.97	$22.13	$19.77	$56.27	$56.27
Tier 5	$9.04					2"	$57.55	$35.41	$31.63	$90.03	$90.03
						3"	$125.89	$77.47	$69.19	$196.94	$196.94
						4"	$215.80	$132.80	$118.60	$337.60	$337.60
						6"	$449.94	$276.89	$247.28	$703.90	$703.90
						8"	$647.40	$398.40	$355.80	$1,012.80	$1,012.80
						10"	$1,043.39	$642.09	$573.43	$1,632.30	$1,632.30

* For potable water, volumetric rates above the $2.27/ccf threshold will be designated for the WUE Fund. The threshold for Recycled Water is $1.44.

Fire Protection

Meter Size	Proposed Rate ($/month)
5/8"	$3.58
3/4"	$3.58
1"	$3.58
1 1/2"	$11.94
2"	$19.11
2.5"	$30.45
3"	$41.80
4"	$71.65
6"	$149.27
8"	$214.95
10"	$346.31

Construction Water Rates

Meter Charge ($/month)	$114.78
Volumetric Charge ($/ccf)	
Potable Water	$2.45
Recycled Water	$2.38

Wastewater Rates ($/month)

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"
Single Family Residential	$22.68	$22.68	$22.68	$22.68	$22.68	$22.68
Multi-family Residential	$24.72	$24.72	$24.72	$75.90	$119.77	$119.77
Commercial 1	$17.87	$17.87	$17.87	$53.05	$83.22	$83.22
Commercial 2	$38.07	$38.07	$38.07	$120.39	$190.96	$190.96
Commercial 3	$78.32	$78.32	$78.32	$254.54	$405.60	$405.60
Commercial 4	$84.49	$84.49	$84.49	$275.11	$438.53	$438.53

Meter Size	3"	4"	6"	8"	10"
Single Family Residential	NA	NA	NA	NA	NA
Multi-family Residential	$258.72	$441.52	$916.83	$1,319.01	$2,123.37
Commercial 1	$178.75	$304.43	$631.22	$907.72	$1,460.74
Commercial 2	$414.46	$708.50	$1,473.04	$2,119.93	$3,413.76
Commercial 3	$884.04	$1,513.46	$3,150.05	$4,534.81	$7,304.41
Commercial 4	$956.06	$1,636.92	$3,407.27	$4,905.21	$7,901.16

January 1, 2016

Water and Recycled Water

(based on 5.6% increase over April 1, 2015)

Volumetric Rates ($/ccf) WUE Threshold: $2.40*					
Residential & Multifamily		Commercial & Irrigation		Recycled Water	
Tier 1	$1.49	Tier 1	$1.70	Tier 1	$1.24
Tier 2	$1.70	Tier 2	$2.62	Tier 2	$1.74
Tier 3	$2.62	Tier 3	$4.38	Tier 3	$3.50
Tier 4	$4.38	Tier 4	$9.17	Tier 4	$8.29
Tier 5	$9.17				

Service Charge ($/month)					
Meter Size	Residential	Multifamily	Commercial	Irrigation	Recycled
5/8"	$11.39	$7.01	$6.26	$17.83	$17.83
3/4"	$11.39	$7.01	$6.26	$17.83	$17.83
1"	$11.39	$7.01	$6.26	$17.83	$17.83
1 1/2"	$37.98	$23.37	$20.88	$59.42	$59.42
2"	$60.77	$37.39	$33.40	$95.07	$95.07
3"	$132.94	$81.81	$73.06	$207.97	$207.97
4"	$227.88	$140.24	$125.24	$356.51	$356.51
6"	$475.14	$292.40	$261.13	$743.32	$743.32
8"	$683.65	$420.71	$375.72	$1,069.52	$1,069.52
10"	$1,101.82	$678.05	$605.54	$1,723.71	$1,723.71

* For potable water, volumetric rates above the $2.40/ccf threshold will be designated for the WUE Fund. The threshold for Recycled Water is $1.52

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Fire Protection

(based on 5.6% increase over April 1, 2015)

Meter Size	Proposed Rate ($/month)
5/8"	$3.78
3/4"	$3.78
1"	$3.78
1 1/2"	$12.61
2"	$20.18
2.5"	$32.16
3"	$44.14
4"	$75.66
6"	$157.63
8"	$226.99
10"	$365.70

Construction Water Rates

(based on 5.6% increase over April 1, 2015)

Meter Charge ($/month)	$121.21
Volumetric Charge ($/ccf)	
Potable Water	$2.59
Recycled Water	$2.51

Wastewater ($/month)

(based on 9.5% rate adjustment over April 1, 2015)

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"
Single Family Residential	$24.83	$24.83	$24.83	$24.83	$24.83	$24.83
Multi-family Residential	$27.07	$27.07	$27.07	$83.11	$131.15	$131.15
Commercial 1	$19.56	$19.56	$19.56	$58.09	$91.12	$91.12
Commercial 2	$41.69	$41.69	$41.69	$131.83	$209.10	$209.10
Commercial 3	$85.76	$85.76	$85.76	$278.72	$444.14	$444.14
Commercial 4	$92.52	$92.52	$92.52	$301.25	$480.19	$480.19

Meter Size	3"	4"	6"	8"	10"
Single Family Residential	NA	NA	NA	NA	NA
Multi-family Residential	$283.30	$483.47	$1,003.93	$1,444.31	$2,325.09
Commercial 1	$195.73	$333.35	$691.18	$993.95	$1,599.51
Commercial 2	$453.84	$775.81	$1,612.98	$2,321.33	$3,738.07
Commercial 3	$968.02	$1,657.24	$3,449.31	$4,965.62	$7,998.33
Commercial 4	$1,046.88	$1,792.43	$3,730.96	$5,371.20	$8,651.77

January 1, 2017

Water and Recycled Water

(based on 4.6% adjustment over January 1, 2016)

Volumetric Rates ($/ccf) WUE Threshold: $2.510*					
Residential & Multifamily		Commercial & Irrigation		Recycled Water	
Tier 1	$1.56	Tier 1	$1.78	Tier 1	$1.29
Tier 2	$1.78	Tier 2	$2.73	Tier 2	$1.81
Tier 3	$2.73	Tier 3	$4.49	Tier 3	$3.57
Tier 4	$4.49	Tier 4	$9.28	Tier 4	$8.36
Tier 5	$9.28				

Service Charge ($/month)					
Meter Size	Residential	Multifamily	Commercial	Irrigation	Recycled
5/8"	$11.91	$7.33	$6.55	$18.65	$18.65
3/4"	$11.91	$7.33	$6.55	$18.65	$18.65
1"	$11.91	$7.33	$6.55	$18.65	$18.65
1 1/2"	$39.73	$24.45	$21.84	$62.15	$62.15
2"	$63.57	$39.11	$34.94	$99.44	$99.44
3"	$139.06	$85.57	$76.42	$217.54	$217.54
4"	$238.36	$146.69	$131.00	$372.91	$372.91
6"	$497.00	$305.85	$273.14	$777.51	$777.51
8"	$715.10	$440.06	$393.00	$1,118.72	$1,118.72
10"	$1,152.50	$709.24	$633.39	$1,803.00	$1,803.00

* For potable water, volumetric rates above the $2.51/ccf threshold will be designated for the WUE Fund. The threshold for Recycled Water is $1.59.

Fire Protection

(based on 4.6% adjustment over January 1, 2016)

Meter Size	Proposed Rate ($/month)
5/8"	$3.95
3/4"	$3.95
1"	$3.95
1 1/2"	$13.19
2"	$21.11
2.5"	$33.64
3"	$46.17
4"	$79.14
6"	$164.88
8"	$237.43
10"	$382.52

Construction Water

(based on 4.6% adjustment over January 1, 2016)

Meter Charge ($/month)	$126.78
Volumetric Charge ($/ccf)	
Potable Water	$2.71
Recycled Water	$2.63

Wastewater ($/month)

(based on 5.6% adjustment over January 1, 2016)

Meter Size	5/8"	3/4"	1"	1 1/2"	2"	2.5"
Single Family Residential	$26.22	$26.22	$26.22	$26.22	$26.22	$26.22
Multi-family Residential	$28.58	$28.58	$28.58	$87.76	$138.50	$138.50
Commercial 1	$20.66	$20.66	$20.66	$61.35	$96.23	$96.23
Commercial 2	$44.02	$44.02	$44.02	$139.21	$220.81	$220.81
Commercial 3	$90.56	$90.56	$90.56	$294.33	$469.01	$469.01
Commercial 4	$97.70	$97.70	$97.70	$318.12	$507.08	$507.08

Meter Size	3"	4"	6"	8"	10"
Single Family Residential	NA	NA	NA	NA	NA
Multi-family Residential	$299.17	$510.54	$1,060.15	$1,525.19	$2,455.30
Commercial 1	$206.69	$352.02	$729.89	$1,049.61	$1,689.08
Commercial 2	$479.25	$819.25	$1,703.30	$2,451.32	$3,947.40
Commercial 3	$1,022.23	$1,750.04	$3,642.47	$5,243.70	$8,446.24
Commercial 4	$1,105.51	$1,892.81	$3,939.89	$5,671.99	$9,136.27

Moulton Niguel Water
Leading the Way in Service

Frequently Asked Questions
MNWD's Budget-Based Rates & Drought Water Supply Management

Moulton Niguel Water District (MNWD) is actively working to address new and pressing water supply challenges during California's severe drought. In order to balance the needs of our customers with the need for increased conservation during the drought, the District has implemented a number of innovative initiatives. The following list of frequently asked questions is meant to help customers better understand the District's plans to address drought and water supply challenges, and ways that customers may be affected.

Our Local Water Supply

Where Does Our Water Come From?
MNWD, like most South Orange County water providers, does not have the benefit of significant local water supplies. Therefore, the District imports 75 percent of its supplies from the Colorado River and the Sierra Nevada Mountains. The District purchases these imports through the Municipal Water District of Orange County (MWDOC), a regional water supplier that purchases its supplies from the Metropolitan Water District of Southern California (MWD).

MNWD has worked to supplement these supplies and diversify its sources by treating and delivering recycled water, which accounts for 25 percent of the District's supply and can be used by customers for irrigation.

What is MNWD Doing to Expand and Diversify Our Water Supply?
The District has invested in infrastructure to increase both the amount of recycled water produced and emergency supply storages. As MNWD relies on outside sources for the majority of its water supply, the increased use of recycled water and the strategic augmentation of emergency storages has provided the District with a critical safety net while also helping to conserve potable water use during the drought. These efforts have led to a substantial increase in the amount of recycled water produced by MNWD, allowing the District to capture and treat water that would otherwise go unused. In total, these efforts have allowed MNWD to save 2.7 billion gallons of water each year – enough to supply 16,000 families.

MNWD has also taken steps to augment its emergency water reserves to provide a 31-day supply, ensuring the District can continue to provide customers with water during planned and unplanned service interruptions.

Limited Water Supply

What is the Current State of California's Water Supply?
California is in a state of extreme to exceptional drought, a condition which has lasted for a number of years and is expected to continue through 2015. The state's prolonged drought has placed incredible strain on water supplies, like those that MNWD relies on. The historic drought conditions have also caused a decrease in the amount of supplies available to water districts across California, including MNWD. In response to the severe drought conditions, California Governor Jerry Brown has called for a mandatory, state wide 25 percent reduction in water use.

How is the Drought Affecting MNWD?
MNWD relies solely on outside providers for its potable water supply, which means that when providers like MWDOC and MWD receive reduced water supplies as the drought persist, the amount of water MNWD receives is also reduced. When the District receives less water than normal, it must turn to enhanced conservation measures and work with customers to encourage water-wise practices and ensure that the supplies received are enough to meet MNWD's needs.

Managing Water Supply Through the Drought

What Has MNWD Done to Manage Water Supply Demand during the Drought?
In order to reliably meet water demand of the service area, MNWD has implemented a budget-based rate structure and Water Shortage Contingency Plan. The District has proactively addressed water challenges by managing supply and demand, preparing for potential water shortages, and fostering increased water conservation.

The District has made changes to the way water budgets are calculated to reflect the current drought conditions and encourage increased levels of conservation as water supplies continue to decline. In response to additional State regulations and the Governor's call for a statewide reduction in water use, the District has reached out to businesses, such as restaurants and hotels, to assist them in complying with the issued mandates. MNWD has also worked during the drought to increase its budget for rebate programs, resulting in the removal of more than 2 million square feet of turf.

How Does MNWD's Rate Structure Help to Manage Supply and Demand?
The District's innovative rate structure is different, and more effective, than mandatory water restrictions in that it incentivizes and encourages conservation by providing commercial and residential customers with personalized water budgets. To calculate these personalized budgets, MNWD utilizes the number of persons in each residence, the total irrigated landscape area, and the daily weather patterns. The District then calculates a water budget based on each customer's specific needs.

MNWD's rate structure is designed to ensure customer needs are being met while creating parameters for efficient water use. By providing customers with a tailored water budget, the District leaves water use entirely up to customers, with the understanding that inefficient use of water will impact the rate the customer will pay. The new rates ensure that those who place the greatest demands on the water system pay their fair share of the costs.

This rate structure has helped MNWD achieve a 26 percent reduction in overall water-use – the lowest water use since 1991 – despite population growth and a rebounding economy. However, further reductions are needed as the drought conditions persist.

In response to the current severity of the drought, the District modified its rate structure – effective April 1, 2015 – with lowered water budget allocations to further encourage efficient indoor and outdoor water use. MNWD has also incorporated the ability to further modify its rate structure to respond to worsening conditions by implementing stages of the District's Water Shortage Contingency Plan.

How Have Customer Water Budgets Changed?

To encourage further conservation in the face of limited water supplies and the persisting drought, MNWD has altered the way customers' water budgets are calculated.

For indoor water-use, customers were previously allotted 65 gallons of potable water per-individual-per-day. This allotment has been decreased to 60 gallons per-individual-per-day. The change is in line with state recommendations and encourages customers to increase individual conservation measures during the statewide emergency drought situation.

The District has also changed how outdoor water budgets are calculated. MNWD previously used a plant factor (amount of water needed by plants) of 0.8 to calculate irrigation budgets for each customer's property but, due to the need for increased conservation, this factor has been reduced to 0.7, which is also in line with state recommendations. The new calculation no longer supports irrigation for a full lawn, but instead supports native plants, which utilize less water. This change will require customers with full lawns to convert some portion of outdoor landscape to drought-tolerant plants in order to stay within the new outdoor water budget. To support this change, MNWD is continuing to offer customers $3.50 for each square foot of turf removed. The District's turf removal program has resulted in the removal of more than 2 million square feet of turf to date, but MNWD is encouraging more customers to take advantage of the program in order to conserve and facilitate compliance with changes made to the outdoor water budget.

What Changes Will Customers See with the New Rates?
Along with the changes in water budgets, MNWD has also updated its rate structure to further incentivize conservation and allow the District to invest in capital improvement projects, including increased emergency water storage and additional recycled water supplies.

The new rates will affect all customers and, while specific dollar amounts vary between residential, commercial, irrigation and recycled water customers, general changes apply across all water users. For commercial, irrigation, and recycled water customers, the number of tiers has been reduced from five to four. Customers in this category who stay within their overall water budget will remain in Tier 1, those who exceed it, will be bumped up to Tiers 2 – 4, depending on the amount by which the budget is exceeded. Residential customers will continue to have a five-tier rate structure with Tier 1 for indoor use, Tier 2 for outdoor use and Tiers 3 – 5 signaling to customers of the inefficient use of water.

Customers seeking additional information on specific rate changes can call the District at (949) 831-2500.

What is the Water Shortage Contingency Plan and how will it Affect Customers?
As required by state law, MNWD has adopted a Water Shortage Contingency Plan (WSCP) to manage supply and demand during the drought and address the need for more water conservation. The contingency plan uses a five-stage, phased approach to ease customers into increased levels of water use efficiency based on the availability of water supplies. Each stage requires heightened levels of water conservation. MNWD's elected Board of Directors is responsible for evaluating the severity of supply shortages and, in the event of worsened conditions, would vote to increase water use reductions to preserve water supplies for the health and safety of our community.

During the first stage of the WSCP, customers will be asked to voluntarily reduce water use, and the District will encourage everyone to remain within their allocated water budget. If water shortages and usage levels require MNWD to implement Stage 2 of the WSCP, customers will be required to stay within their allocated water budget. If increased stages must be implemented, the District will incrementally

decrease the amount of water customers are allowed to use: in Stage 3, outdoor water budgets will be reduced by 40 percent; in Stage 4, outdoor water budgets will be reduced by 70 percent; and, if Stage 5 becomes necessary in the event demand becomes inconsistent with drought conditions or water supply challenges, residential and commercial customers will not be permitted to utilize any potable water outdoors. In Stage 2 and beyond, customers will face substantially increased rates of approximately $9.00 per centum cubic foot (ccf) if allocated budgets are exceeded.

The District encourages customers to remain within their water budgets at all times to help MNWD avoid increasing the WSCP stage and assist in water supply management during the state's extreme drought.

What can Customers to do Help Save Water during the Drought?

To curb demand and help MNWD meet the Governor's goal of a 25 percent reduction in water use, the District encourages customers to follow these best water management practices:

- Plant drought-tolerant landscaping
- Limit watering hours and duration
- Do not water during the rain
- Ensure outdoor watering does not produce excessive water flow or runoff
- Do not wash down hard or paved surfaces
- Check for and fix leaks, breaks or malfunctions
- Re-circulate water in fountains and decorative water features
- Reduce car washing
- Cover swimming pools and spas to prevent evaporation

The District is committed to conservation and continues to offer voluntary water saving programs, including turf removal rebates, home water surveys, sprinkler adjustments, and more. These programs have proven effective in reducing water-use and helping achieve MNWD's conservation goals. For more information on voluntary conservation programs and practices, please visit http://www.mnwd.com/rebates/.

Moulton Niguel Water District

Moulton Niguel Water District (MNWD) provides drinking water, recycled water, and sewer service to more than 170,000 customers in Laguna Niguel, Aliso Viejo, Laguna Hills, Mission Viejo, and portions of the City of Dana Point. Approximately 25 percent of MNWD's water is provided through local water recycling programs. Approximately 75 percent of MNWD's water is imported from the Metropolitan Water District of Southern California – a regional water wholesaler that delivers water from Northern California and the Colorado River.

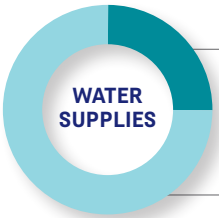
Appendix 3 Outreach Materials

- **Material 3.1 –** Informational Flyer
- **Material 3.2 -** Postcard 1
- **Material 3.3 –** Postcard 2

Moulton Niguel Water
Leading the Way in Service
www.mnwd.com

Managing South Orange County Water Through the Drought

WHERE DOES OUR WATER COME FROM?



25% RECYCLED WATER

75% IMPORTED WATER
from Northern California and the Colorado River

WHO USES THIS WATER?

2,700 COMMERCIAL ACCOUNTS

170,000 PEOPLE

5 CITIES
Aliso Viejo
Dana Point
Laguna Hills
Laguna Niguel
Mission Viejo

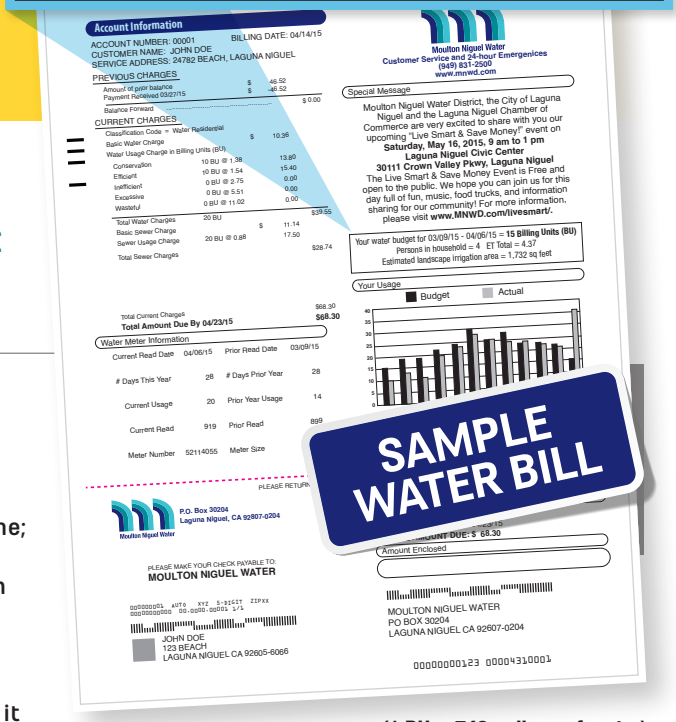
WHAT'S THE PROBLEM

California faces a fourth year of extreme drought, a rebounding economy, and a growing population. In the face of these challenges, Governor Brown has called for a mandatory **25 percent reduction in statewide water use** and the State Water Resources Control Board has enacted mandatory conservation regulations.

WHAT SHOULD I DO?

Stay within your water budget

Your water budget for 03/09/15 - 04/06/15 = **15 Billing Units (BU)**
Persons in household = 4 ET Total = 4.37
Estimated landscape irrigation area = 1,732 sq feet



(1 BU = 748 gallons of water)

WHAT ELSE CAN I DO?

TO HELP CONSERVE WATER SUPPLIES MNWD ENCOURAGES CUSTOMERS TO FOLLOW THESE BEST WATER MANAGEMENT PRACTICES:

DO

- Replace your lawn with drought-tolerant landscaping
- Check for and fix leaks, breaks or malfunctions
- Ensure outdoor watering does not produce excessive water flow or runoff

DON'T

- Wash down hard or paved surfaces
- Wash your car at home; instead, use a commercial car wash
- Request water at restaurants unless you're going to drink it

WHAT ARE WE DOING?

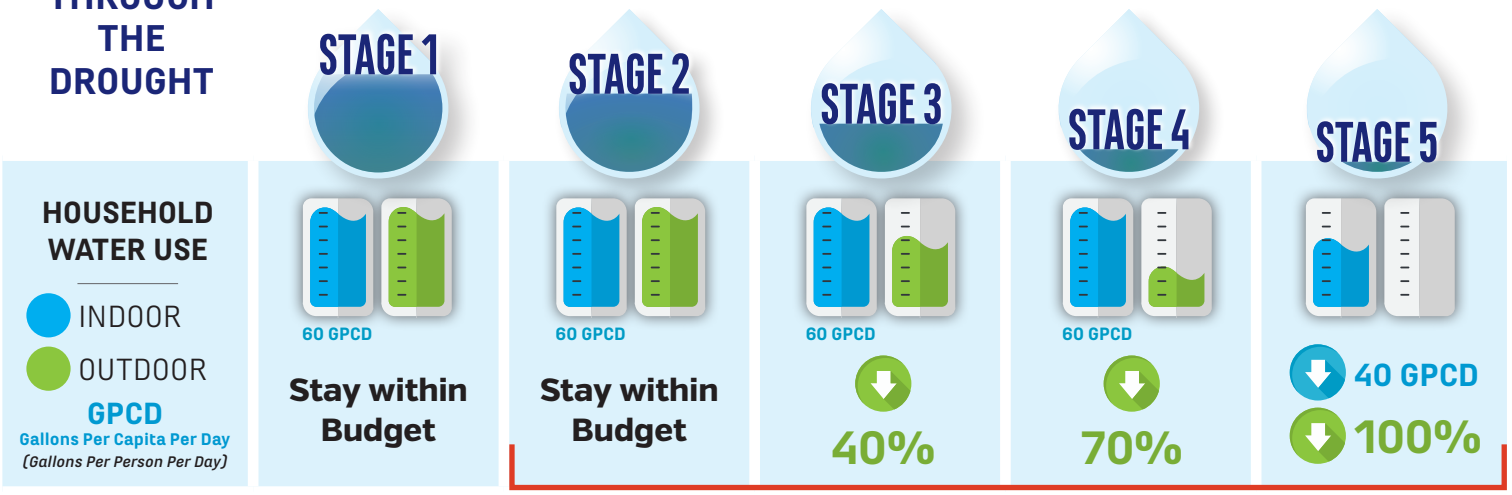
MNWD: MEETING THE WATER NEEDS OF SOUTH ORANGE COUNTY

In response to the drought, MNWD has adopted a Water Shortage Contingency Plan and budget-based rate structure. The District has linked these innovative programs to proactively address water challenges.

MANAGING WATER SUPPLIES THROUGH THE DROUGHT

WATER SHORTAGE CONTINGENCY PLAN

MNWD has adopted a five-stage water shortage contingency plan. The contingency plan uses a phased approach to ease customers into heightened levels of water use efficiency based on the availability of water supplies and the response by customers to each stage. Each stage requires heightened levels of water conservation.



THERE ARE PENALTIES FOR EXCEEDING WATER BUDGET IN STAGES 2-5.

CONSERVATION-BASED WATER BUDGET CHANGES

To manage limited water supplies, MNWD has updated customers' water budgets. **The following changes took effect April 1, 2015:**

INDOOR WATER BUDGET

Indoor water budgets have been reduced from 65 gallons per person per day to **60 gallons per person per day.**

OUTDOOR WATER BUDGET

Outdoor water budgets have been reduced to **sustain a mix of California native plants and lawn**, not a full lawn.

ADVANCING SOLUTIONS TO MEET WATER SUPPLY NEEDS

Expanding Recycled Water Use

Implementing Leak Detection Programs

Evaluating Water Supply Solutions

e.g. Desalination

Offering Voluntary Water Saving and Rebate Programs

Despite population growth and economic recovery, our customers have reduced water use to levels not seen since 1991.

SAVINGS OF NEARLY **2 MILLION GALLONS** OF WATER PER DAY

26% REDUCTION IN TOTAL DISTRICT-WIDE WATER USE

Moulton Niguel Water
Leading the Way in Service

The District is committed to conservation and continues to offer **voluntary water saving programs**, including turf removal rebates, home water surveys, sprinkler adjustments and more. These programs have proven effective in conservation efforts. For more information on voluntary conservation programs and practices, please visit:

www.mnwd.com
(949) 831-2500

May 2015

Moulton Niguel Water
Leading the Way in Service

www.mnwd.com

PO BOX 30204
LAGUNA NIGUEL CA 92607-0204

GOVERNOR CALLS FOR MANDATORY REDUCTION IN STATEWIDE WATER USE

How Can I Help?

Stay within budget and take advantage of our conservation and rebate programs, including:

- ✓ **Turf Removal Rebates**
- ✓ **Synthetic Turf Installation Incentives**
- ✓ **Smart Irrigation Controller Rebates**

To find out more about conservation and rebate opportunities, visit:

www.mnwd.com/rebates

Moulton Niguel Water
Leading the Way in Service
www.mnwd.com

Managing Water Supplies Through the Drought

Due to our customers' efficient use of water, the State Water Resources Control Board has directed MNWD to reduce water use by only 20% compared to the statewide average of 25%. We need your help to meet this mandate.

What Does This Mean for Me?

STAY WITHIN YOUR WATER BUDGET

- Indoor and outdoor **water budgets have been reduced** to reflect serious drought conditions.
- Help us conserve by **staying within your water budget** and taking advantage of MNWD's conservation **rebate opportunities**.
- Remove thirsty lawns and **replace with drought tolerant landscaping**. We would love to help you. Ask us how!

What is MNWD Doing?

DIVERSIFYING SUPPLIES

MNWD recognizes the severity of the drought and is doing our part by:

Investigating Water Supply Alternatives
e.g. Desalination

Expanding Use of Recycled Water

Implementing Leak Detection Programs

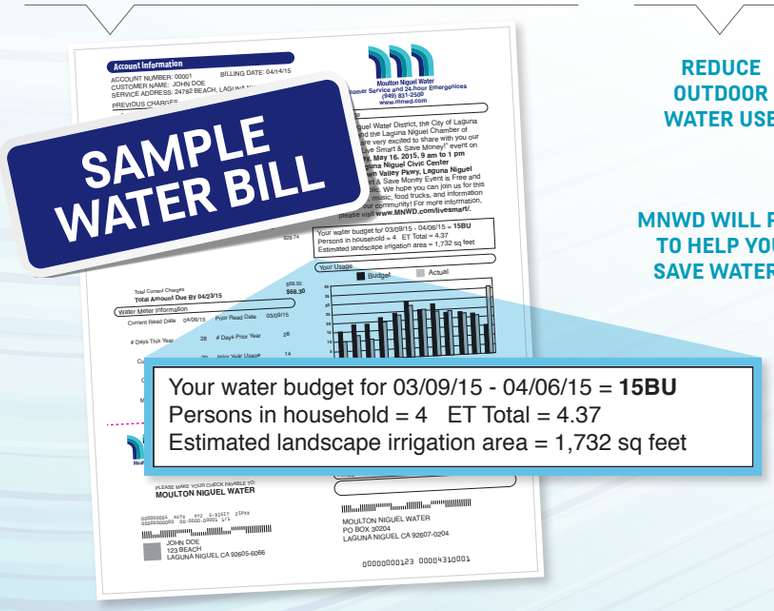
More information on MNWD's initiatives and rebate programs available at **www.mnwd.com**

Moulton Niguel Water
Leading the Way in Service
www.mnwd.com

What Does this Mean for Me?

STAY WITHIN YOUR WATER BUDGET

Know Your Water Budget



What Should I Do?

REDUCE OUTDOOR WATER USE

- Remove Turf
- Plant California Native Landscaping
- Limit Watering Hours and Duration
- Avoid Excessive Water Runoff

MNWD WILL PAY TO HELP YOU SAVE WATER!

TAKE ADVANTAGE OF OUR REBATE PROGRAMS

- Receive up to $3.50 per square foot for removing your lawn
- Receive up to $1.50 per square foot for installing synthetic turf
- Receive up to $380 for each weather-based irrigation controller installed
- Get up to $8 for each rotating sprinkler spray nozzle installed

More information on your water budget and rate structure is available online at **www.mnwd.com**

TRIM

Moulton Niguel Water
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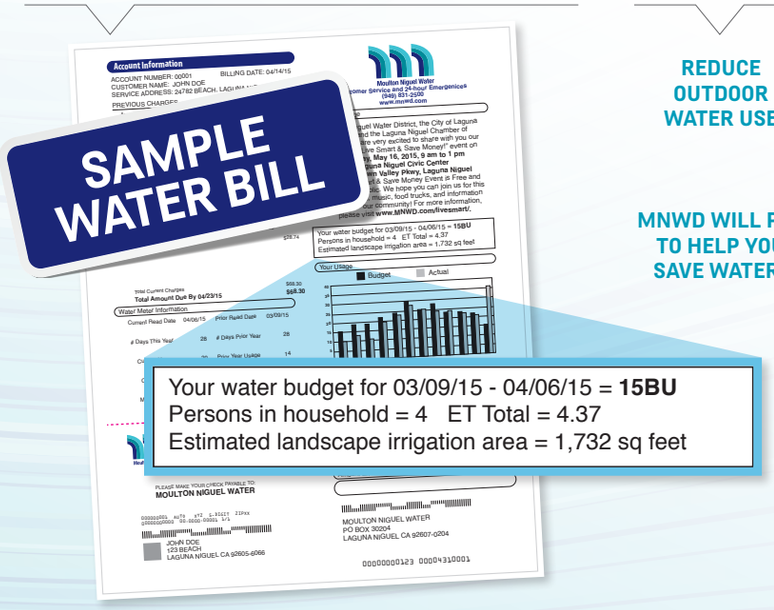
www.mnwd.com

What Does this Mean for Me?

STAY WITHIN YOUR WATER BUDGET

Know Your Water Budget



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TRIM

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PO BOX 30204
LAGUNA NIGUEL CA 92607-0204

Important Water Supply Update

California takes sweeping steps to conserve water in drought
AP Associated Press

Water supplier OKs 15% cut to cities, water districts in Southland
Los Angeles Times

Governor Brown Issues Mandatory 25 Percent Statewide Water Reductions

State tightens water cuts for 15 O.C. cities
THE ORANGE COUNTY REGISTER

ABC 30 ACTION NEWS

State Water Board Attempts to Prevent 'Catastrophic Impacts' of Drought, Revises Regulations
KTLA 5 NEWS

TRIM

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