

REQUEST FOR COUNCIL ACTION CITY OF SAN DIEGO	CERTIFICATE NUMBER (FOR COMPTROLLER'S USE ONLY) .N/A
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TO: CITY COUNCIL	FROM (ORIGINATING DEPARTMENT): Public Utilities	DATE: 7/21/2015
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SUBJECT: Potable, Fire and Recycled Water Rate Adjustments, Cost of Service Study and Proposition 218 Notice and Hearing

PRIMARY CONTACT (NAME, PHONE): Lee Ann Jones-Santos ,858-614-4042 MS 901A	SECONDARY CONTACT (NAME, PHONE): Jeanne Cole , 858-292-6313 MS 901A
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COMPLETE FOR ACCOUNTING PURPOSES

FUND					
FUNCTIONAL AREA					
COST CENTER					
GENERAL LEDGER ACCT					
WBS OR INTERNAL ORDER					
CAPITAL PROJECT No.					
AMOUNT	0.00	0.00	0.00	0.00	0.00



FUND					
FUNCTIONAL AREA					
COST CENTER					
GENERAL LEDGER ACCT					
WBS OR INTERNAL ORDER					
CAPITAL PROJECT No.					
AMOUNT	0.00	0.00	0.00	0.00	0.00

COST SUMMARY (IF APPLICABLE):

ROUTING AND APPROVALS

CONTRIBUTORS/REVIEWERS:	APPROVING AUTHORITY	APPROVAL SIGNATURE	DATE SIGNED
Debt Management	ORIG DEPT.	Jones-Santos, Lee Ann	07/23/2015
Environmental Analysis	CFO	Lewis, Mary	07/29/2015
Liaison Office	DEPUTY CHIEF	Gomez, Paz	07/29/2015
Financial Management	COO		
Comptroller	CITY ATTORNEY		
	COUNCIL PRESIDENTS OFFICE		

PREPARATION OF: RESOLUTIONS ORDINANCE(S) AGREEMENT(S) DEED(S)

1. Council authorization to notice, pursuant to Proposition 218, the following proposed rate adjustments and associated actions:
a. Proposed water rate adjustments, increasing water system revenues by 9.8%, effective January 1, 2016; 6.9%, effective July 1, 2016; 6.9% effective July 1, 2017; 5.0% effective July 1, 2018; and 7.0% effective July 1, 2019 consistent with the 2015 Water Cost of Service Study Update (Updated COSS); the San Diego County Water Authority (CWA) rate increase impact to City customers is projected to be 2.5% in 2017 - 2018, and 3.0% in

- 2019; in the event the CWA increase is higher than these amounts, the City will only pass through the actual CWA pass through rate impact to the City customers between 2.5% and 7%. The CWA pass through will not exceed 7% for fiscal years 2017, 2018 and 2019; and
- b. Proposed water base fee and commodity charge adjustments consistent with the Updated COSS; and
 - c. Proposed adjustments to the monthly Private Fire Service charges based on recommendation of the Updated COSS; and
 - d. Proposed recycled water base fee and commodity charge adjustments consistent with the revised Recycled Water Pricing Study; and
2. Set the public hearing date for a City Council hearing and vote on the proposed water, fire and recycled water rate adjustments for November 17, 2015; and
3. Accept the Water Updated COSS and Recycled Water Pricing Study; and
4. That the Report to City Council is received by the City Council and on file in the office of the City Clerk as Document No. RR-_____ ; and
5. That the Mayor or his designees are authorized to notice a public hearing on proposed water, fire and recycled water rate adjustments in accordance with the requirements of Proposition 218 and the procedures previously adopted by the City Council in Resolution R-302245, except that the notice required by Proposition 218 will be given by separate mailing to the address to which the Public Utilities Department customarily mails the regular customer billing statement, pursuant to the California Government Code section 53755; and
6. That the Mayor or his designees are authorized to notice said public hearing with the document “Notice of Public Hearing_____”, prepared in accordance with the requirements of Proposition 218 and the procedures previously adopted by the City Council in Resolution R-302245, except that the notice required by Proposition 218 will be given by separate mailing to the address to which the Public Utilities Department customarily mails the regular customer billing statement, pursuant to California Government Code section 53755.

STAFF RECOMMENDATIONS:
Approve Requested Actions

SPECIAL CONDITIONS (REFER TO A.R. 3.20 FOR INFORMATION ON COMPLETING THIS SECTION)

COUNCIL DISTRICT(S):	Citywide
COMMUNITY AREA(S):	Citywide
ENVIRONMENTAL IMPACT:	This Activity is not subject to CEQA, pursuant to CEQA Guidelines sections 15060 (c)(3) and 15378 (b)(5), because this activity is an organizational or administrative activity of a government that will not result in direct or indirect physical changes in the environment.
CITY CLERK INSTRUCTIONS:	

COUNCIL ACTION
EXECUTIVE SUMMARY SHEET
CITY OF SAN DIEGO

DATE: 7/21/2015

ORIGINATING DEPARTMENT: Public Utilities

SUBJECT: Potable, Fire and Recycled Water Rate Adjustments, Cost of Service Study and Proposition 218 Notice and Hearing

COUNCIL DISTRICT(S): Citywide

CONTACT/PHONE NUMBER: Lee Ann Jones-Santos /858-614-4042 MS 901A

DESCRIPTIVE SUMMARY OF ITEM:

This item is to update both potable and recycled water rates. For potable rates, this is a 2015 update to the 2013 Cost of Service Study (Updated COSS) to produce a five year rate case, which incorporates the increased cost of purchased water due to the Carlsbad Desalination Plant completion and Metropolitan Water District of Southern California (MWD) rate increases, the initial phase of the City's Pure Water program, replacement of aging infrastructure, investments in system efficiency, drought and the State mandate and recover required reserve levels. For recycled rates, a Peer Review of the 2013 Recycled Water Pricing Study (Pricing Study) Report has been completed by Black & Veatch consultants.

STAFF RECOMMENDATION:

Approve Requested Actions

EXECUTIVE SUMMARY OF ITEM BACKGROUND:

The City owns and operates a water system that provides safe drinking water to a population of approximately 1.4 million via over 275,000 connections. Local water sources are limited and in general, only 15 % of the City's historical annual water supply has been derived from local water sources. The City imports 85 % of its water supply from the San Diego County Water Authority (CWA). The CWA approves rate increases on an annual basis, which increases the City's costs to purchase water. For 2016, the CWA has increased its rates approximately 6.6%, primarily to cover additional costs related to its commitment to purchase water from the Carlsbad seawater desalination plant and higher wholesale water rates from the MWD. After four years of historic drought conditions, the City has only emergency reserve levels in its reservoirs and is projecting to not be able to draft any local supply in FY 2016. In addition, on April 1, 2015, the Governor's call to action for urban water districts to cut water consumption by 25% included direction to the State Water Resources Control Board (SWRCB) to achieve this target. On May 5, 2015 the SWRCB assigned the City of San Diego a conservation standard that resulted in a reduction mandate of 16%.

The proposed rate increases are recommended to be implemented as follows: 9.8% on January 1, 2016; 6.9% on July 1, 2016; 6.9% on July 1, 2017; 5% on July 1, 2018; and 7% on July 1, 2019. These rate increases are needed to recover the increased cost of purchased water due to the Carlsbad Desalination Plant completion and MWD rate increases, the initial phase of the City's Pure Water program, replacement of aging infrastructure, investments in system efficiency, drought and the State mandate and recover required reserve levels.

The cost for water purchased from CWA is known for 2016; however, the cost for 2017-2019 is estimated. This estimate is included as a factor in the proposed rate increases. The CWA rate increase impact to the City customers is projected to be 2.5% in 2017 and 2018, and 3.0% in 2019. In the event the CWA rate increase impact to the City customers is different than these amounts, the City will only pass through the actual CWA rate increase impact to the City customers between 0% and 7%.

Recycled Water:

The City currently sells recycled water at a commodity rate of \$0.80/HCF. The City began selling recycled water in October 1997 at \$1.34/HCF and reduced the rate to its current level in July 2001 to encourage recycled water use, to comply with grant requirements and reduce the demand on imported potable water. The proposed average rate increase to \$1.73/HCF will align and distribute current costs to the benefiting rate payer while providing an incentive for the use of recycled water. With the average increase to \$1.73/HCF for recycled water and the proposed increase to \$5.67/HCF for potable irrigation water, the proposed recycled water rate will be 30.5% of the potable irrigation water rate. Many utilities use a percentage of their respective potable water rate for their recycled water rate which can reach as high as 90%.

The proposed unitary rate was calculated so that operating and capital costs, are shared by irrigation, industrial, and wholesale customers receiving recycled water from the North City and South Bay reclamation plants.

CITY STRATEGIC PLAN GOAL(S)/OBJECTIVE(S):

Goal # 2: Work in partnership with all of our communities to achieve safe and livable neighborhoods.

Objective # 3: Invest in infrastructure

Goal #3: Create and sustain a resilient and economically prosperous City.

Objective #2: Increase water independence.

FISCAL CONSIDERATIONS: Proposed rates would be for all Potable Water and Recycled Water ratepayers.

EQUAL OPPORTUNITY CONTRACTING INFORMATION (IF APPLICABLE): N/A

PREVIOUS COUNCIL and/or COMMITTEE ACTION (describe any changes made to the item from what was presented at committee): N/A

COMMUNITY PARTICIPATION AND PUBLIC OUTREACH EFFORTS:

The Department has held open meetings including the Independent Rates Oversight Committee (IROC) meeting on July 20, 2015. IROC voted 6-0 to approve the staff recommendation, but move forward with the idea of presenting both the unitary rate and the two zone rate as an option to the Committee of the Environment and have the concept of two zone rates for recycled water return to IROC for further discussion. The Public Utilities Department has begun initial outreach efforts to potable and recycled ratepayers; however, this outreach will increase significantly

within each individual Council district, to boards of organizations active in policy discussion processes, stakeholder meetings, and other community groups in late summer and fall of 2015.

KEY STAKEHOLDERS AND PROJECTED IMPACTS:

All City Potable Water and Recycled Water ratepayers.

Jones-Santos, Lee Ann

Originating Department

Gomez, Paz

Deputy Chief/Chief Operating Officer

COST OF SERVICE UPDATE

San Diego Public Utilities Department Water Fund



PREPARED FOR

City of San Diego, CA

23 JULY 2015



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Introduction

This report was prepared for the City of San Diego (City) Public Utilities Department (PUD) to document the update of a multi-year financial plan, cost of service analysis, and the design of rate structures for the PUD's Water Fund (Fund). The specific goals of the study were to:

- Review and evaluate existing policies and procedures affecting utility rates;
- Evaluate the adequacy of projected revenues under existing rates to meet projected revenue requirements;
- Develop a sound financial plan for the Water Fund covering a five-year study period for both ongoing operations and planned capital improvements;
- Allocate projected Fiscal Year 2015-2016 (FY 16) revenue requirements to the various customer classes in accordance with the respective service requirements; and
- Develop a suitable rate schedule that produces revenues adequate to meet financial needs of the utility system while recognizing customer costs of service and local and state legal and policy considerations. Specific elements being incorporated into the rate schedules and addressed in this report include the following:
 - Required consumption reductions in accordance with the Governor's mandate.
 - San Diego County Water Authority adopted FY 2016 rate increase and projected increases for FY 2017 through FY 2020, and any associated pass through increases.
 - Inclusion of the accelerated City's Pure Water Program.
- In addition, the rate schedules are guided by the rate setting cost of service requirements of California Constitution Article XIII D (Proposition 218) and Proposition 26.

This Cost of Service (COS) update reviews the cost of providing water service to the City's customers. To that end, the study examines the revenues generated by the Fund and makes recommendations for revenue adjustments, as needed. This study is a recalibration of the City's rates to reflect current financial and water supply/restriction conditions.

BACKGROUND

The City of San Diego is located in San Diego County and stretches to the United States and Mexico international border. The City is the largest city in San Diego County with a population of roughly 1.4 million (2013 US Census Bureau estimate). The City owns and operates two self-supporting enterprises (Water and Wastewater). Only the Water Fund is subject to this cost of service analysis.

The Water utility system provides service to residential, commercial and industrial customers as well as wholesale customers such as California-American Water Company. The City, through PUD, operates the Water utility system as a self-supporting enterprise, with revenues and expenditures accounted for separately from other enterprise and General Fund activities. The City and PUD principally protect the long-term interests of water customers with respect to rate pricing, service quality and reliability of essential services. To achieve this objective, the PUD must consider the need for Water to remain financially viable and able to provide reliable, safe and secure water services to its consumers in the long run. Promoting economic efficiency and long-term investment is consistent with the factors that the PUD must operate.

The Water Enterprise (Water) serves approximately 1.4 million residential, commercial, industrial, and wholesale customers by providing potable water. To serve its customers, Water obtains water from two primary sources: local water sources and purchased water supplies from the San Diego County Water Authority (CWA). CWA purchases include treated water delivered to the City’s water distribution system and raw water transported to the City’s water treatment plants. It is anticipated that in calendar year 2016, another water supply source will be made available and added to CWA’s supply portfolio -- desalinated water from the Carlsbad Desalination Facility. Furthermore, the City is planning to implement its Pure Water program during the five-year study period which will help diversify the City’s water supply resources.

The Water system operates in an area subject to strict regulatory oversight by Federal and State agencies such as the U.S. Environmental Protection Agency (USEPA), California Department of Public Health (DPH), and the Air Pollution Control District. The PUD must comply with a multitude of laws including, but not limited to, the Safe Drinking Water Act. Complying with these regulations and resulting mandates contributes to a large share of the cost burden on the system.

Changes since the Last Rate Case

The City’s last utility rate case occurred in 2013. Since that time, a number of significant external and internal changes have occurred which have subsequently affected PUD’s finances and operations. Fundamental to the development of the 2013 Rate Case were four assumptions:

1. Declining economic conditions as a result of the housing bubble burst in 2008;
2. Slowing of water sales due to customer reactions to water conservation messaging;
3. Delays in executing Water’s capital project program; and
4. Purchased water cost increases in-line with historical averages.

Table 1 summarizes the major changes (affecting the 2016 rate case) to the assumptions underlying the former 2013 Rate Case.

Table 1 Major Changes to Former 2013 Rate Case Assumptions

2013 Rate Case Assumptions	Current Reality for FY 16 Rate Case
Housing bubble burst in 2008. The housing market was slowly recovering.	Housing and employment markets continue to recover.
Severe drought hit the nation’s southwest region in 2009. As a result, water conservation messaging becomes the norm and agencies develop drought restrictions. Per capita consumption drops to lowest levels in a decade.	Drought conditions continue to worsen. As a result, the State of California is in a drought state of emergency which requires all Californians to significantly reduce water use. The State is requiring that the City of San Diego reduce total consumption by 16% by the Spring of 2016. Per capita consumption in San Diego continues to decline thus impacting base revenue projections for the Water Utility.
The City experienced delays in executing its CIP. The financial market crash of late 2007 resulted in a tightening of lending activities and increased scrutiny on credit-worthiness.	The City is on target for the execution of its Water CIP. Lending activities are on the rise however increased scrutiny on credit-worthiness continues, particularly in light of potential revenue impacts due to drought conditions and reduced customer demand.
Since 2008, the effective rate that the City paid for purchased water from CWA (cost/acre-foot purchased) doubled. Infrastructure investments by both CWA and Metropolitan Water District of Southern California, restricted allocations from the Colorado River, and the Bay-Delta continued to drive costs up, while declining sales reflecting conservation efforts were driving down revenues.	The effective rate of purchased water continues to increase. Supply reliability improvements due to desalinated water availability in 2016 and future impacts of the Pure Water Program will continue to drive up costs in the short term.

Current Rate Case Focus

Scarcity in water supply continues to be a long-term concern to all water suppliers in Southern California, including the CWA. As a result, the price of water will continue to rise within San Diego County to meet future regional demands. Incorporated within this study, are three drivers of costs related to the Water Fund: 1) State-mandated water use restrictions, 2) CWA supply diversification efforts, and 3) the implementation of the San Diego Pure Water program.

The first major cost driver related to the 2016 Rate Case is the required consumption decrease mandated by the Governor's water use restriction declaration. California is experiencing one of the driest periods in its history. In 2015, Governor Jerry Brown declared a water use state of emergency and called for all Californians to significantly reduce water use. In response to this declaration, California established statewide emergency water conservation regulations. Consequently, the State is requiring that the City of San Diego reduce total consumption by 16 percent compared to calendar year (CY) 2013. Non-compliance with the mandate may result in fines as high as \$10,000 per day.

Second, the CWA has begun diversifying its water supplies to reduce reliance on water imported from the Colorado River and Sacramento-San Joaquin Bay-Delta. Within the rate adjustments contained in this report are projected costs associated with supply diversification and reliability efforts. One of these strategies includes the Carlsbad Desalination Project, which is expected to be completed by the fall of 2015. Water Fund cost projections include the purchase of desalination water from this Carlsbad project once it becomes operational.

The third cost consideration is the proposed implementation of the Pure Water program which is a part of the City's overall Water Capital Improvement Program. As of fiscal year (FY) 2015, the City is moving forward with the development of its Pure Water San Diego Program (Pure Water). This program will provide the City with an additional water supply. The Pure Water program will incorporate water purification technology to produce one third of San Diego's drinking water supply locally by 2035, thus ensuring future water supply reliability well into the future.

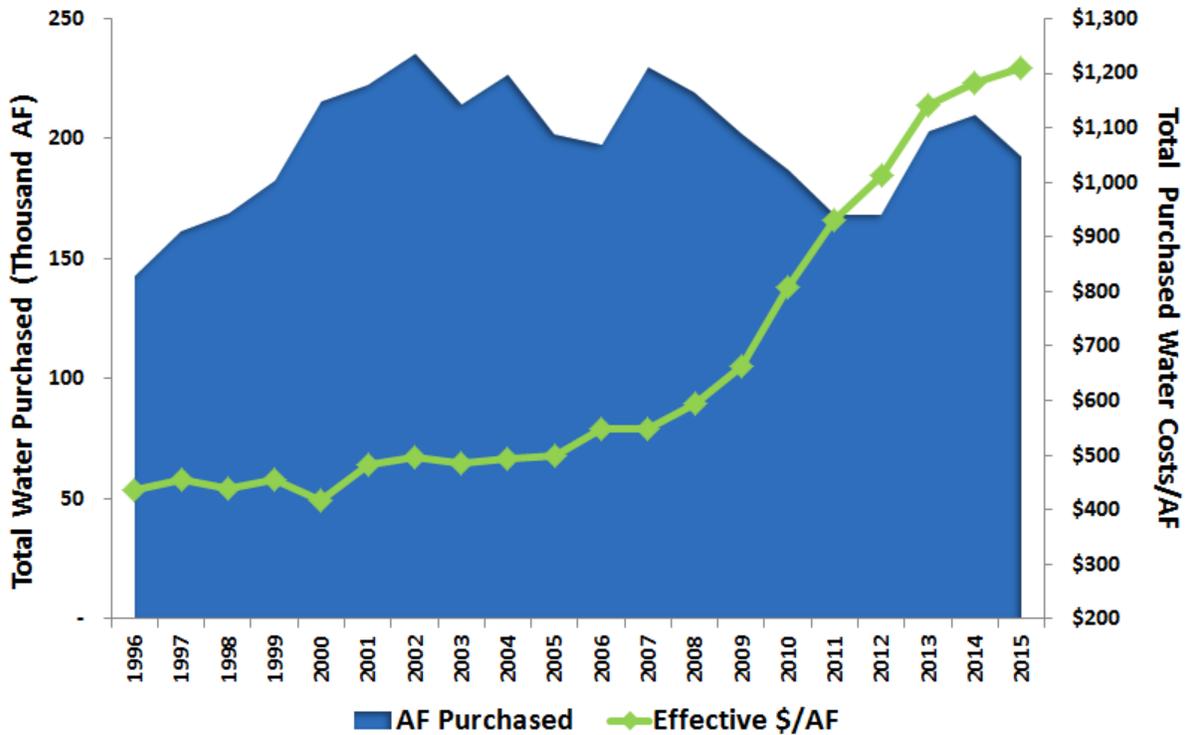
Water agencies across the state are implementing water conservation measures to comply with these regulations and working with customers to help reduce water use wherever possible to preserve this vital and limited resource. The City of San Diego makes conservation a priority and considers customers its greatest ally in building a sustainable future. Continued conservation ensures the region's water needs are met, now and in the future. However, a large part of the San Diego Water Utility's expenses do not vary based upon the quantity of water used by our customers. The proposed rates included in this study would assist the City to continue to generate sufficient revenues to operate, manage, and maintain its facilities and services, even in times of State-mandated water use restrictions.

City Water Supply Costs

The City's local water supply only provides about 10 to 15 percent of customer needs and the City purchases the vast majority of needed water from CWA. In FY 2016 and 2017, the City will not draw down local water supply as water levels are too low due to the on-going drought. As noted previously, infrastructure investments, ongoing State-mandated water use restrictions, and regulatory-imposed mandates put upward pressure on purchased water costs. Figure 1 illustrates the City's historical

effective rate paid for purchased water. The effective rate is the total amount paid to CWA divided by the total volume of water purchased in acre-feet (AF).

Figure 1. Historical Effective Rate Paid for Purchased Water



The 2016 Rate Case examines what actions the PUD should undertake to maintain the financial viability of the Water Enterprise in light of the results of the 2013 Rate Case, changing consumer demand in response to conservation awareness and State-mandated rationing, increasing purchased water costs, slow economic growth, regulatory requirements, and needed future large infrastructure investments.

PURPOSE

The purpose of this report is to present the findings obtained from Black & Veatch Corporation’s (Black & Veatch’s) study of Water rate structures and alternatives, financing, and capital needs. The study develops a financial plan that projects operating revenue, expenses and capital financing costs for the City’s Water Enterprise Fund over a five-year planning period ending June 30, 2020. The plan considers future revenues under existing rates, operation and maintenance expense, principal and interest expense on debt, and capital improvement requirements. Black & Veatch made annual projections of the number of customers, water use, revenues, and expenditures based on historical data and estimates for the next five years.

SCOPE OF WORK

The City retained Black & Veatch in 2012 to update its cost of service and rate study for its Water and Wastewater enterprises and continued with the retainer for the current rate cases. Presented herein are

the results of a study of the Water Fund’s projected revenues, revenue requirements, cost of service, and rates for service.

For purposes of this report, the study period is the five fiscal years beginning July 1, 2015 and ending June 30, 2020. Unless otherwise noted, references in this report to a specific year are for the City’s year ending June 30. To avoid confusion between calendar and fiscal years, the term FY refers to the year beginning July 1 and ending June 30. Black & Veatch projected revenues and revenue requirements for the study period based on a review of historical factors and Water’s operating and capital budgets and financial policies. The study of revenue requirements recognizes projected operation and maintenance (O&M) expenses, establishment and/or maintenance of reserve funds, and capital financing requirements. Capital financing requirements include payments on outstanding bond and loan issues as well as capital improvement expenditures met from annual revenues and available reserve funds. All figures are presented to the nearest hundred and totals may not foot due to rounding.

The Water Fund’s costs of service were allocated to customer classes utilizing a cost causative approach endorsed by the American Water Works Association (AWWA) M1 rate setting manual. The allocation methodologies produce cost of service allocations recognizing the projected customer service requirements for the City. The design of proposed rates is in accordance with allocated cost of service and local policy considerations, such as reserve funding levels. Additionally, this study evaluates the extent to which the existing rate structure recovers revenues from customer classes in accordance with cost of service allocations.

OVERVIEW OF LEGAL AND INDUSTRY BEST PRACTICES FOR COST-OF-SERVICE STUDIES

Rate-setting procedures in California require that agencies responsible for imposing property-related charges must demonstrate a nexus between the cost of providing services and the services or benefits received. The state of California considers water and wastewater services as property-related fees and as such, subject to state constitutional and statutory requirements. Presented in the next few sections are brief summaries of the relevant laws governing this study.

Proposition 13

Government Code Section §50076, adopted in 1979 provides that “special taxes shall not include any fee which does not exceed the reasonable cost of providing the service or regulatory activity for which the fee is charged.”

Proposition 218

California voters approved Proposition 218 in November 1996. This voter-approved initiative added Articles XIII C and D to the California Constitution. Article XIID Section 2(e), is a definition of a “fee”. Essentially, as defined by Proposition 218, a fee is “any levy other than an ad valorem tax, a special tax, or an assessment, imposed by an agency upon a parcel or upon a person as an incident of property ownership, including a user fee or charge for a property related service”. Until 2006, sewer charges were considered property related services while water charge were not defined as property-related until the 2006 California Supreme Court decision in *Bighorn-Desert View Water Agency v. Verjil*. After this decision, water charges are now considered as property-related fees and any new or increased water

charges must comply with the substantive and procedural requirements of Proposition 218. The substantive requirements include:

- Revenues derived from the fee or charge cannot exceed the funds required to provide the property related service.
- Revenues derived from the fee or charge cannot be used for any other purpose other than for which the fee or charge was imposed for.
- A property-related fee or charge cannot exceed the proportional cost of service attributable to the parcel.

Assembly Bill 2882

The California legislature passed Assembly Bill (AB) 2882 in 2008 which amended the California Water Code (Sections 370 – 374) to provide criteria for establishing allocation-based conservation water pricing in support of California Constitution Article X, Section 2. Article X, Section 2 states that waste or unreasonable use of water shall be prevented. Allocation-based conservation water pricing allows for the design of water budget rate structures. Per AWWA M1, “a water-budget rate structure is a form of increasing block rates where the amount of water within the first block or blocks is based on the estimated, efficient water needs of the individual customer.”

Under AB 2882, allocation-based rates can be employed if they meet the following criteria:

- Billing based on metered use.
- A base allocation (water amount) is established based on each customer's needs and property characteristics.
- A basic charge is imposed for all water used within the customer's base allocation.
- A conservation charge is imposed on all excess of the customer's base allocation.

Under AB 2882, tiered rates can be employed if they meet the following criteria:

- Conservation best management practices, conservation education, irrigation controls and other conservation devices, and other demand management measures.
- Water system retrofitting, dual plumbing and facilities for production, distribution, and all uses of recycled water and other alternative water supplies.
- Projects and programs for prevention, control, or treatment of the runoff of water from irrigation and other outdoor water uses. Incremental costs shall not include the costs of stormwater management systems and programs.
- Securing dry-year water supply arrangements.
- Procuring water supplies to satisfy increments of water use in excess of the basic use allocations for the customers of the public entity, including supply or capacity contracts for water supply rights or entitlements and related energy costs for water delivery.

Proposition 26

California voters approved Proposition 26 in November 2010. Included in the language of proposition, which amended California Constitution Article XIII C, Section 1, is a definition of “tax”. Essentially, as

defined by Proposition 26, a tax is any “levy, charge, or exaction of any kind imposed by a local government” with specifically outlined exceptions. These exceptions are:

- A charge imposed for a specific benefit conferred or a privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege, and
- A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product.

Proposition 26 establishes that the “...local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor’s burdens on, or benefits received from, the governmental activity.”

Government Code Section §54999.7

Under this section, rate-setting activities by public agencies are directed to follow cost-of-service principles and states that fees for “...for public utility service, other than electricity or gas, shall not exceed the reasonable cost of providing the utility service.” It also provides that these fees will be “established in consideration of service characteristics, demand patterns, and other relevant factors.”

Generally Accepted Rate-Setting Standards

The American Water Works Association (AWWA) is the industry organization tasked with providing guidance on the operation and management of water utilities. AWWA has established a general set of principles used to guide the development of water rates. These principles were developed to provide a consistent approach and minimum standards to rate-setting procedures. It is important to note that AWWA observes that there is no prescribed single approach for establishing cost-based rates. Rather, agencies must exercise judgment to align rates and charges with local conditions and requirements, as well as applicable state law.

Black & Veatch has used the guidelines contained in the AWWA documents and followed the applicable State law, including Proposition 218, to conduct the analyses contained herein.

DISCLAIMER

In conducting our study, we reviewed the books, records, agreements, capital improvement programs, customer sales and financial projections of the Water Fund, as we deemed necessary to express our opinion of the operating results and projections. While we consider such books, records, documents, and projections to be reliable, Black & Veatch has not verified the accuracy of these documents.

The projections set forth in this report are intended as “forward-looking statements”. In formulating these projections, Black & Veatch has made certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized in performing the analyses follows generally accepted practices for such projections. Such assumptions and methodologies are reasonable and appropriate for the purpose for which they are used. While we believe the assumptions are

reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur. Such factors that may affect the Fund's ability to manage the system and meet water quality, and/or other regulatory or environmental requirements include the following: the City's ability to execute the capital improvement program as scheduled and within budget; regional climate, weather conditions, and future responses to water supply within the State of California affecting the demand for water; and adverse legislative, regulatory or legal decisions (including environmental laws and regulations).

Water Rate Study

REVENUE AND REVENUE REQUIREMENTS

To meet the costs associated with providing water service to its customers, the Water Fund derives revenue from a variety of sources including water user charges, other water sales, rental income, capacity fees, interest earned from the investment of available funds, meter installation fees, and other miscellaneous revenues. Black & Veatch used a combination of an analysis of historical and future system growth in terms of number of accounts and water consumption to project the level of future revenue generated in the study.

With revenue derived from the various sources, the Water Fund meets the cash requirements of operation and maintenance (O&M); principal, interest, and reserve payments on revenue bonds and State Revolving Fund (SRF) loans indebtedness; and recurring annual capital expenditures for replacements, system betterments, and extensions not debt financed. Operation and maintenance expenses are those expenditures necessary to maintain the system in good working order. Routine annual capital expenditures, which include equipment replacements, consist of recurring annual replacements, minor extensions, and betterments, which are normally revenue financed. Other capital costs include bond and loan covenant-required payments and cash financed capital improvements.

Customer and Water Usage Projections

To forecast revenue, customer bills and billed water sales volume need to be determined within Water's service area. Recent historical trends demonstrate a slight uptick of growth in water connections over the past few years as the economic and development conditions in the region continue to improve. For this 2016 rate case, Black & Veatch has assumed a nominal water connection growth rate of approximately 0.65% annually over the five-year study period. Table 2 illustrates the anticipated number of water connections during the study period.

Table 2 Projected Number of Water Connections

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(Connections)	(Connections)	(Connections)	(Connections)	(Connections)
1	Single Family	223,306	224,423	225,546	226,675	227,809
2	Other Domestic	29,359	29,947	30,547	31,159	31,782
3	Non-Residential [*]	15,320	15,397	15,475	15,553	15,631
4	Temp Construction	380	381	382	383	384
5	Irrigation	7,049	7,101	7,153	7,207	7,262
6	Fire Service	5,623	5,623	5,623	5,623	5,623
7	Total Accounts	281,037	282,872	284,726	286,600	288,491

Projected water sales volumes use projected number of customers, customer bills and historical water usage patterns per customer class. Table 3 illustrates the projected water billed volume in hundred cubic feet (HCF). One HCF is equivalent to 748 gallons. Black & Veatch obtained several years of detailed consumption data and thus historical patterns of customer water usage were determined. Using historical water usage as a benchmark, the projected water sales volumes increase slightly over the

study period as shown in Table 3. This projection is used to determine anticipated baseline rate revenues during the study period. Because of State-mandated water use restrictions, FY 2016 incorporated an immediate decrease in water consumption that slowly increases during the study period. This potential increase is addressed in the rate design section as any future consumption decreases will affect levels of rate revenues generated.

Table 3 Projected Billed Volume

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(HCF)	(HCF)	(HCF)	(HCF)	(HCF)
1	Single Family	24,100,457	24,220,959	24,342,064	24,463,774	24,586,093
2	Other Domestic	14,578,835	14,870,412	15,167,820	15,471,176	15,780,600
3	Non-Residential [*]	16,554,727	16,637,501	16,720,689	16,804,292	16,888,313
4	Temp Construction	221,122	221,564	222,007	222,451	222,896
5	Irrigation	9,090,405	9,158,583	9,227,272	9,296,477	9,366,201
6	Total Water Usage (HCF)	64,545,546	65,109,019	65,679,852	66,258,170	66,844,103
7	Total Water Usage (AF)	148,176	149,470	150,780	152,108	153,453

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

HCF = hundred cubic feet, AF = Acre-Feet (1 AF = 435.6 HCF)

Revenue Projections

Water generates revenue primarily from water sales. Since revenue generated outside of water sales are not subject to rate increases, we have excluded them from this portion of the analysis. The cash flow portion of this report incorporates these additional revenue sources.

Water's user-charge sales are composed of two parts, a monthly service charge and a commodity charge. The monthly service charge is an amount based on meter size designed to recover fixed costs, which do not vary with the volume of water used by a customer such as meter reading, customer billing, and debt service. The commodity charge is an amount based on units of consumption measured by the number of HCF of water consumed during the billing cycle. Included in the commodity charge are the costs associated with water purchases. Table 4 summarizes the City's current water rates for all customer classes.

Table 4 Existing Rates (Effective January 1, 2015)

Service Charge (\$/month)		Fire Service Charge (\$/month)		Commodity Charge (\$/HCF)	
Meter	Rate	Meter	Rate	Customer Class	Rate
3/4"	\$20.31			Single Family [**]	
1"	\$27.51	1"	\$2.58	Tier 1 (0-4 HCF)	\$3.90
1.5"	\$43.96	1.5"	\$2.58	Tier 2 (5-12 HCF)	\$4.36
2"	\$64.53	2"	\$4.00	Tier 3 (13-18 HCF)	\$6.23
3"	\$112.86	3"	\$15.50	Tier 4 (19+ HCF)	\$8.77
4"	\$181.75	4"	\$19.82	Multi Family	\$4.65
6"	\$352.44	6"	\$29.27	Non-Residential	\$4.47
8"	\$558.10	8"	\$41.34	Construction	\$4.95
10"	\$798.72	10"	\$53.41	Irrigation	\$4.95
12"	\$1,483.55	12"	\$63.74		
16"	\$2,580.72	16"	\$103.35		

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

[**] Bi-Monthly Tiers = 2x Monthly Tiers.

Table 5 incorporates the existing water rates, demonstrates water sales revenue increasing during the study period.

Table 5 Revenue under Existing Rates

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
1	Single Family	171,235,900	172,092,500	172,953,400	173,818,900	174,688,400
2	Other Domestic	79,247,500	80,834,700	82,453,800	84,104,700	85,787,600
3	Non-Residential [*]	82,134,900	82,545,300	82,957,800	83,372,200	83,788,400
4	Temp Construction	1,400,900	1,403,900	1,406,900	1,409,800	1,412,800
5	Irrigation	49,293,000	49,661,200	50,032,000	50,406,300	50,783,700
6	Fire Service	2,088,900	2,088,900	2,088,900	2,088,900	2,088,900
7	Total Revenue	\$385,401,100	\$388,626,500	\$391,892,800	\$395,200,800	\$398,549,800

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

Operation and Maintenance Projections

Summarized in Table 6 are Water’s projected O&M expenditures. These expenditures include costs related to personnel, contract services, operating supplies, utilities, and general and administrative. The forecasted expenditures are based on Black & Veatch and City staff’s expertise and knowledge. The figure box to the right summarizes key assumptions for inflation rates used in the O&M expense projections and applied to FY 2017-2020. Purchased water increases reflect adopted CY 2015 and CY 2016 CWA rates. The levels of adjustment illustrated above are consistent with recent increases seen throughout the area. Total O&M increases from \$424.2 million in FY 2016 to

- Personnel Services: 1%
- Operating Supplies: 3.5%
- Contracts: 3.5%
- IT Expenses: 0%
- Energy & Utilities: 9%
- Routine Capital: 0%
- Other Expenses: 0%
- Pure Water: 1%

\$486.0 million in FY 2020, due mainly to the increased cost of purchased water and water operations.

Table 6 Projected Operation and Maintenance Expenses

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
1	Finance & Information Technology	18,224,600	18,673,800	19,029,900	19,511,500	20,677,200
2	Employee Services & Quality Assurance	8,691,700	10,313,600	10,564,600	10,903,300	11,150,200
3	Customer Support Services	10,365,200	11,268,800	11,418,900	11,643,400	11,851,400
4	Long Range Planning	14,882,800	13,250,800	12,548,500	11,484,200	11,716,500
5	Engineering Program Management	9,224,400	8,096,500	7,419,800	6,227,200	5,064,500
6	Environmental Monitoring & Technical Services	6,514,500	6,708,300	6,555,500	6,758,800	6,884,500
7	Water Operations	86,882,200	93,657,400	98,365,300	100,252,500	103,803,300
8	Pure Water	1,341,500	1,265,000	1,256,100	1,311,500	1,333,500
9	Water Administration and Lakes	11,543,200	11,773,400	12,059,400	12,359,000	12,673,200
10	Water Supply	225,085,900	238,991,900	253,810,500	273,138,400	275,162,500
11	Administrative Services	33,947,300	25,916,900	25,777,400	25,263,300	25,704,700
12	Subtotal O&M Expenses	426,703,300	439,916,400	458,805,900	478,853,100	486,021,500
13	Less O&M Adjustments	(2,500,000)	0	0	0	0
14	Total O&M Expenses	\$424,203,300	\$439,916,400	\$458,805,900	\$478,853,100	\$486,021,500

Capital Improvement Program

While O&M expenses cover day-to-day operations, Water incurs additional capital expenditures to repair and replace existing water assets. As a result, Water has developed a long-term Capital Improvement Program (CIP) that identifies future water system facility needs. The CIP shown in Table 7 summarizes the capital improvement projects by system category during the study period. As part of the financial plan analyses, starting in FY 2016, Black & Veatch applied an annual inflation allowance of 2.27 percent based on a recent 5-year Engineering News Record's (ENR's) historical average for Construction Cost Indices.

The CIP is a constantly evolving program and PUD staff review all projects on an annual basis. Consequently, projects may shift out in time or drop off the CIP if they become unnecessary. Conversely, PUD may add projects as the need arises. Black & Veatch suggests that the reader not construe the project categories listed in Table 7 as "set in stone", but rather as indicative of the nature of projects planned for execution over the study period. We note that the CIP project totals presented in Table 7 reflect capital expenditures (cash out the door) versus the budgeted (encumbered) values shown in the City's approved CIP. Furthermore, as part of the current rate case, Black & Veatch in discussions with PUD staff have applied a 35 to 40 percent discount rate to the CIP (expenditure) values to more closely align study period expenditure trend with historic levels.

Table 7 Capital Improvement Program

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
1	Groundwater Projects	92,900	116,500	1,506,200	7,657,300	1,950,500
2	Miscellaneous	9,570,600	18,928,500	13,487,500	192,500	353,600
3	Pipeline Projects	34,756,200	40,400,900	38,389,200	35,991,600	36,158,900
4	Pipeline - Transmission	20,088,300	24,530,300	25,264,900	33,282,700	36,838,300
5	Pump Stations	8,542,200	6,143,500	9,812,300	4,679,200	3,998,900
6	Storage Projects	5,315,700	24,193,900	21,016,100	24,372,500	28,850,400
7	Water Treatment Projects	2,331,100	46,000	0	86,100	474,200
8	Pure Water Program	23,085,200	60,069,200	29,676,000	14,696,100	226,831,600
9	Total CIP (Inflated & Discounted)	103,782,200	174,428,800	139,152,200	120,958,000	335,456,400

Black & Veatch notes that over the past few years, the City has implemented a number of business process changes including the following:

- Changes to the Municipal Code allowing for Multiple Award Construction Contracts (MACC) that accelerate the selection and award process for design build procurements,
- Increasing the task limits for Job Order Contracts, and
- Developing an order project cascade list to allow remaining CIP funds in a project at completion to move directly to a priority project.

The PUD expects to see the full effect of these changes during this current (FY 16) rate case.

The proposed CIP includes targeted levels for water main replacement – moving from completion of 17.7 miles of replacement in FY 14 to a baseline of 30 miles awarded in FY 15. PUD’s target is 30+ miles awarded per year thereafter. As described in the 2007 and 2013 Rate Cases, Water is under a California Department of Public Health (DPH) compliance order. Of the proposed Water CIP, approximately \$61.3 million is associated with DPH-dictated projects.

Capital Fund Financing

Table 8 presents a proposed financing plan for Water’s CIP. Financing for the CIP comes from a combination of funds on hand, State Revolving Fund (SRF) loan proceeds, bond proceeds, grant monies, capacity fees, reserve fund transfers, and cash financing. PAYGO funding is cash receipts from operating revenues. In FY 14 and 15, the PUD cash funded its CIP program entirely from cash on hand and set aside revenues from operational savings. For this rate case period of five fiscal years (FY 16 to FY 20), capital fund financing takes into account grants, state loans, and capacity fee revenues which can fluctuate from year to year. The PUD will fund the remaining component of the CIP with bond financing and available cash on hand.

Additionally, PUD will transfer approximately \$32 million from the Rate Stabilization Fund in FY16 to bolster its debt service coverage levels and to mitigate rate increases for ratepayers. For the 2016 Rate Case, it is anticipated that PUD will be issuing new debt and will combine any bond proceeds with PAYGO, Other Cash Financing, capacity fees, SFR proceeds, and Rate Stabilization monies to fund the CIP

expenses. The large projected expense increases in FY 2020 is due to the investment in the Pure Water program for future supply reliability.

Table 8 CIP Financing Plan

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
Source of Funds						
1	Bond Proceeds	52,330,064	67,793,725	44,131,189	20,863,497	138,422,511
2	SRF Proceeds	24,542,056	83,758,316	78,474,426	79,341,074	148,214,362
3	Grants	1,675,080	2,938,660	2,054,785	2,467,429	30,595,227
4	Capacity Fees	15,000,000	12,000,000	12,000,000	12,000,000	12,000,000
5	PAYGO Funds	10,235,000	7,938,100	2,491,800	6,286,000	6,224,300
6	Total Sources	\$103,782,200	\$174,428,800	\$139,152,200	\$120,958,000	\$335,456,400
Use of Funds						
7	Capital Projects	103,782,200	174,428,800	139,152,200	120,958,000	335,456,400
8	Total Uses	\$103,782,200	\$174,428,800	\$139,152,200	\$120,958,000	\$335,456,400

Water maintains several funds used to finance CIP projects as well as to separate the commingling of rate funds, bond proceeds and capacity fee funds. The capital funds revenue consists of developer capacity fees, transfers and financing proceeds from a combination of bonds and State Revolving Fund loans. For the study period, Water will continue to depend on rate and fee revenue, reserves and financing proceeds to execute planned CIP projects.

Operating Fund Financing

Tables 9 and 10 summarize the proposed operating financial plan for Water over the study period. This financial plan generates sufficient funds to cover short-term and long-term expenses. Sources of revenue include water sales under existing rates, additional revenues realized from proposed rate adjustments, miscellaneous revenue and interest earnings on available balances.

The projected water revenue under existing rates represents service and commodity charges at current rate levels that are subject to rate adjustments. Based on the existing revenue indicated, additional annual revenue adjustments are necessary to meet operating fund requirements and fiscal policy objectives. To allow water customers to monitor usage and plan for potential financial impact, PUD proposes to implement revenue adjustments effective January 1 of 2016, July 1 of 2016 and then July 1 of each fiscal year thereafter through FY 20. Any changes to the capital-financing policies and/or CIP may alter these results since the operating fund helps supplement funds for traditional repair and replacement projects. Line 7 illustrates the resulting dollar impact of the proposed revenue adjustments.

The suggested revenue adjustments for each fiscal year are shown on Lines 2 through 6. These adjustments reflect known and anticipated CWA water purchase cost increases, costs associated with Water's supply and delivery systems, and maintenance of appropriate debt service coverage levels necessary for Water's outstanding bonds and credit standing. Should the actual cost of any of these components be less than their projected cost, the excess revenues will be dedicated to water supply

projects such as the Pure Water program and water conservation programs. Black & Veatch notes that the CY 17 through CY 20 CWA water purchases cost increases are only estimates at this time.

Black & Veatch further notes that the indicated percentage revenue increases discussed above are overall revenue increases. The results of the cost of service analysis presented later in this report may indicate that rate increases may vary from this average for the various customer classes with some classes receiving a greater than average increase, while others receive a less than average increase or perhaps a decrease.

Table 9 Operating Fund Financing Plan – Part I: Revenues [+]

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
Revenue						
Rate Revenue						
1	Revenue from Existing Rates	385,401,100	388,626,500	391,892,800	395,200,800	398,549,800
	Year	Months Effective	Rate Adjustment			
2	FY 2016	6	9.79%	18,865,400	38,046,500	38,366,300
3	FY 2017	12	6.90%		29,440,400	29,687,900
4	FY 2018	12	6.90%			31,736,300
5	FY 2019	12	5.00%			24,791,700
6	FY 2020	12	7.00%			36,752,600
7	Increased Revenue Due to Adjustments	18,865,400	67,486,900	99,790,500	125,424,600	163,240,000
8	Subtotal Rate Revenue	404,266,500	456,113,400	491,683,300	520,625,400	561,789,800
Other Operating Revenue						
9	Cal Amercian Sales	16,127,800	18,045,100	19,290,200	20,254,700	21,672,500
10	Other Water Sales	10,531,400	13,687,000	13,462,000	13,187,000	12,887,000
11	Service Charges	1,080,000	1,080,000	1,080,000	1,080,000	1,080,000
12	New Water Services	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
13	Contribution in Aid	146,000	0	0	0	0
14	Land and Building Rentals	6,429,400	5,480,700	5,495,600	5,550,400	5,606,300
15	Services Rendered Other Funds	6,902,000	6,802,000	6,702,000	6,702,000	6,702,000
16	Other Revenue	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
17	Subtotal Other Operating Revenue	44,816,600	48,694,800	49,629,800	50,374,100	51,547,800
Non-Operating Revenue						
18	Damages Recovered	245,000	245,000	245,000	245,000	245,000
19	Sale of Land	0	0	0	0	0
20	Earnings on Investments	6,304,500	8,201,400	9,603,700	11,580,100	14,617,700
21	Subtotal Non-Operating Revenue	6,549,500	8,446,400	9,848,700	11,825,100	14,862,700
22	Total Revenue	\$455,632,600	\$513,254,600	\$551,161,800	\$582,824,600	\$628,200,300

Table 10 Operating Fund Financing Plan – Part II: Revenue Requirements and Ending Balances [+]

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
	Revenue Requirements					
	Operating & Maintenance					
23	O&M Expenses	199,117,400	200,924,500	204,995,400	205,714,700	210,859,000
24	Water Supply	225,085,900	238,991,900	253,810,500	273,138,400	275,162,500
25	Subtotal O&M	424,203,300	439,916,400	458,805,900	478,853,100	486,021,500
	Debt Service					
26	Existing Revenue Bonds	59,860,700	61,847,100	61,839,800	61,844,000	61,833,500
27	Existing SRF Loans	5,724,300	6,577,800	8,665,300	9,743,400	12,944,100
28	Proposed Revenue Bonds	0	3,087,600	7,087,600	9,691,400	10,922,400
29	Proposed SRF Loans	0	533,200	1,846,100	2,465,400	2,730,600
30	Total Debt Service	65,585,000	72,045,700	79,438,800	83,744,200	88,430,600
	Transfers					
31	To CIP Fund (PAYGO)	10,235,000	7,938,100	2,491,800	6,286,000	6,224,300
32	To CIP Fund (Other Capital Financing) [*]	0	0	0	0	0
33	To Operating Reserve	7,143,800	346,600	780,700	137,900	986,600
34	To Capital Reserve	0	0	0	0	0
35	To Rate Stabilization Reserve	0	0	0	0	0
36	To Secondary Purchase Reserve	865,500	834,300	889,100	1,159,700	121,500
37	To Other Funds	0	3,445,306	3,445,305	0	0
38	Total Transfers	18,244,300	12,564,306	7,606,905	7,583,600	7,332,400
39	Total Revenue Requirements	\$508,032,600	\$524,526,406	\$545,851,605	\$570,180,900	\$581,784,500
40	Net Annual Cash Balance	(52,400,000)	(11,271,806)	5,310,195	12,643,700	46,415,800
41	Beginning Fund Balance	260,405,345	208,005,345	196,733,539	202,043,734	214,687,434
42	Net Cumulative Fund Balance	\$208,005,345	\$196,733,539	\$202,043,734	\$214,687,434	\$261,103,234
	Minimum Target Reserves Balances [**]					
43	Operating Reserve	38,186,900	38,533,500	39,314,200	39,452,100	40,438,700
44	Capital Reserve	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
45	Rate Stabilization Reserve	6,500,000	6,500,000	12,375,000	18,250,000	24,125,000
46	Secondary Purchase Reserve	13,505,200	14,339,500	15,228,600	16,388,300	16,509,800
47	Total Minimum Target Reserves	63,192,100	64,373,000	71,917,800	79,090,400	86,073,500
48	Cumulative Fund Balance Less Reserves	\$144,813,245	\$132,360,539	\$130,125,934	\$135,597,034	\$175,029,734

[+] Amounts may not total due to rounding.

[*] Other Capital Financing consists of capital cash balance, transfers from operating and interest income, etc.

[**] Reserve targets are set by the City's Reserve Policy.

In addition to rate revenue, other operating and non-operating revenues contribute to the income of the Water Enterprise. Typically, these revenue sources are minimal and volatile. For the purposes of this report, the subtotal of miscellaneous revenues increase slightly in the revenue projections. Non-operating sources (Lines 18 through 21) include interest income, revenue from damages recovered, and sale of land, if any.

For the 2016 Rate Case, PUD expects to draw down available monies from the Rate Stabilization Reserve. Per City Reserve Policy, the purpose of the Rate Stabilization Reserve is to maintain the legal covenant ratios in accordance with the respective bond installment purchase agreements. The transfer of \$32 million from the Rate Stabilization Reserve for FY 2016 is the maximum available and will help to ensure the Water Fund meets the legal covenant ratios. Without the use of the reserves, FY 2016

customer rates would have to be increased beyond the level proposed in this report. In this way, the use of the Rate Stabilization Reserve helps to minimize rate increases. The City anticipates replenishing the Rate Stabilization Reserve balance starting in FY 2018.

Line 22 of Table 9 shows total revenues for the study period. Within Table 10, Line 25 shows O&M expenses less anticipated O&M savings which matches the figure from Table 6. A summary of debt service on existing bond issues and SRF loans is on Lines 26 and 27, while Lines 28 and 29 show debt service from any proposed revenue bonds and SRF loans. Transfers to fund the CIP and other reserve accounts in accordance with the City's Reserve Policy occur on Lines 31 through 38. The total revenue requirements for the study period appear on Line 39.

Line 40 calculates the net annual cash balance for each year and the Net Cumulative fund balance shown on Line 42 for FY 16 is inclusive of reserve amounts. To obtain a true picture of the operating condition for Water, we subtract out these reserve amounts, as shown on Lines 43 through 47. Line 48 presents the net cumulative fund balance less reserves but including contractual obligations (encumbrances).

Black & Veatch notes that the figures presented in Tables 9 and 10 are based on Tables 2 through 8 and may not total due to rounding.

Summary of Revenues, Expenditures, and Obligations

To maintain financial viability as an enterprise fund, Water's annual revenues must be sufficient to satisfy three elements:

1. Adequate cash flow to cover O&M, capital and debt obligations
2. Meet debt service coverage (DSC) covenants
3. Maintain reserve funds

Long-term financial viability requires meeting all three elements. The need for revenue adjustments is either "cash flow" driven or "debt service coverage" driven depending on which of the first two elements creates the larger adjustment.

Table 11 summarizes Water's projected outstanding senior (parity) and subordinate debt obligations. Water's debt requirements have two separate DSC requirements. For senior or parity debt, the DSC is 1.2 times net utility revenues (1.2x); for aggregate debt, the DSC is 1.1x net revenues. Black & Veatch recommends that PUD consider using a 1.25x net revenues minimum target for aggregate debt instead of the 1.1x net revenues. Factors that bond Rating Agencies evaluate to determine the credit rating of a utility system include the system's financial profile, economic conditions, governance and management, operating profile, and legal provisions of bond documents. In recent years, the Rating Agencies have noted the pressure on Water's DSC and that continued lowering of the DSC could lower the system's financial profile, which could result in a negative rating action. Raising the minimum target to 1.25x net revenues in addition to implementing pass-through increases could help mitigate such negative credit implications.

Based on the analyses of revenues and revenue requirements, it is evident that Water is coverage-driven and needs revenue increases in order to meet revenue requirements, satisfy DSC covenants and replenish cash on hand to policy target levels.

Table 11 Estimated Debt Service Coverage on Existing Debt without Revenue Adjustments

Line No.	Description	Fiscal Year Ending June 30,				
		Projected				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
		(\$)	(\$)	(\$)	(\$)	(\$)
Debt Service Coverage Calculation						
Operating Revenue						
1	Water Sales	430,925,700	487,845,500	524,435,500	554,067,100	596,349,300
2	Service Charges	1,080,000	1,080,000	1,080,000	1,080,000	1,080,000
3	New Water Services	2,500,000	2,500,000	2,500,000	2,500,000	2,500,000
4	Land and Building Rentals	6,429,400	5,480,700	5,495,600	5,550,400	5,606,300
5	Services Rendered Other Funds	6,902,000	6,802,000	6,702,000	6,702,000	6,702,000
6	Contributions in Aid of Construction	1,246,000	1,100,000	1,100,000	1,100,000	1,100,000
7	Total Operating Revenue	449,083,100	504,808,200	541,313,100	570,999,500	613,337,600
Operating Expenses						
8	Department Expenses	199,117,400	200,924,500	204,995,400	205,714,700	210,859,000
9	Water Purchase	225,085,900	238,991,900	253,810,500	273,138,400	275,162,500
10	Total Operating Expenses	424,203,300	439,916,400	458,805,900	478,853,100	486,021,500
Net Operating Revenue						
		24,879,800	64,891,800	82,507,200	92,146,400	127,316,100
11	Transfer (to)/from Rate Stabilization Fund	32,000,000	0	(5,875,000)	(5,875,000)	(5,875,000)
12	Transfer (to)/from Other Fund	0	(3,445,306)	(3,445,305)	0	0
13	Interest Income on Operating Funds	6,304,500	8,201,400	9,603,700	11,580,100	14,617,700
14	Interest Income on Debt Service Reserve Fund	1,366,300	1,429,800	1,496,500	1,535,200	1,586,000
15	Capacity Fee Proceeds	15,000,000	12,000,000	12,000,000	12,000,000	12,000,000
16	Grant Proceeds	1,675,100	2,938,700	2,054,800	2,467,400	30,595,200
17	Less: Senior Debt Service Reserve Fund Interest	(1,010,200)	(1,073,700)	(1,140,400)	(1,179,100)	(1,229,900)
18	Total Net Adjusted System Revenues	80,215,500	\$84,942,694	\$97,201,495	\$112,675,000	\$179,010,100
Debt Service						
19	Adjusted Total Parity Debt Service	40,744,700	57,565,300	64,894,600	69,156,600	73,799,000
20	Total Aggregate Debt Service	68,347,350	72,045,675	79,438,825	83,744,175	88,430,625
Senior Debt Service Coverage						
21	Senior Debt Service Coverage without Revenue Adjustments	1.49	0.26	(0.10)	(0.25)	0.13
22	Senior Debt Service Cover with Revenue Adjustments	1.97	1.48	1.50	1.63	2.43
Aggregate Debt Service Coverage						
23	Coverage without Revenue Adjustments	0.90	0.27	(0.02)	(0.20)	0.12
24	Coverage with Revenue Adjustments	1.19	1.24	1.28	1.36	2.04

To meet DSC requirements for senior or aggregate debt in FY 2017 forward, revenue adjustments will be needed beginning in FY 2016 within the COS study for the operational and capital plans. To meet regulatory requirements and maintain the current level of service the City recommends continuing with planned CIP program.

The revenue requirements of Water consist of system O&M expenses, routine capital outlay for minor expenditures on equipment not financed from bond proceeds, debt service requirements on existing and proposed bonded debt, and transfers to other funds. Moreover, the revenues generated should be sufficient to 1) mitigate the financial effects of State-mandated water use restrictions, 2) meet CWA water purchase increases, 3) meet reserve requirements and rate covenant requirements, and 4) provide adequate levels of working capital, including the Pure Water program.

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COST OF SERVICE ALLOCATIONS

The revenue requirements to be derived from rates and charges for water service are summarized in Lines 1 through 9 of Table 12. In analyzing the Water Fund's cost of service for allocation to customer classes, the annual revenue requirements for FY 16 are selected as the Test Year (TY) requirements to demonstrate the development of cost of service water rates. In determining the costs of service met by charges for water service, we use the figures presented in Tables 9 and 10 and deduct income received from other sources that are not subject to rate adjustments from the total revenue requirements. The adjustments section includes recognition that available cash is used (Line 10) and the addition of 6 months additional rate revenue from the revenue increase since it is effective for only 6 months (Line 11) of the fiscal year. As a result, the total cost of service to be recovered from rates is shown on Line 13, Column 5.

Table 12 Total Costs to be Recovered from Rates for TY 16

Line No. (1)	Description (2)	Operating Expense (3)	Capital Cost (4)	Total Cost (5)
		(\$)	(\$)	(\$)
Revenue Requirements				
1	O&M Expenses	199,117,400		199,117,400
2	Water Supply	225,085,900	0	225,085,900
3	Debt Service	0	65,585,000	65,585,000
4	Transfers	8,009,300	10,235,000	18,244,300
5	Subtotal	\$432,212,600	\$75,820,000	\$508,032,600
Less Revenue Requirements Met from Other Sources				
6	Other Operating Revenue	44,816,600	0	44,816,600
7	Other Non-Operating Revenue	6,549,500	0	6,549,500
8	Transfers	0	0	0
9	Subtotal	\$51,366,100	\$0	\$51,366,100
Adjustments				
10	Adjustment for Annual Cash Balance	52,400,000	0	52,400,000
11	Adjustment to Annualize Rate Increase	(18,865,400)	0	(18,865,400)
12	Subtotal	\$33,534,600	\$0	\$33,534,600
13	COS to be Recovered from Rates	\$347,311,900	\$75,820,000	\$423,131,900

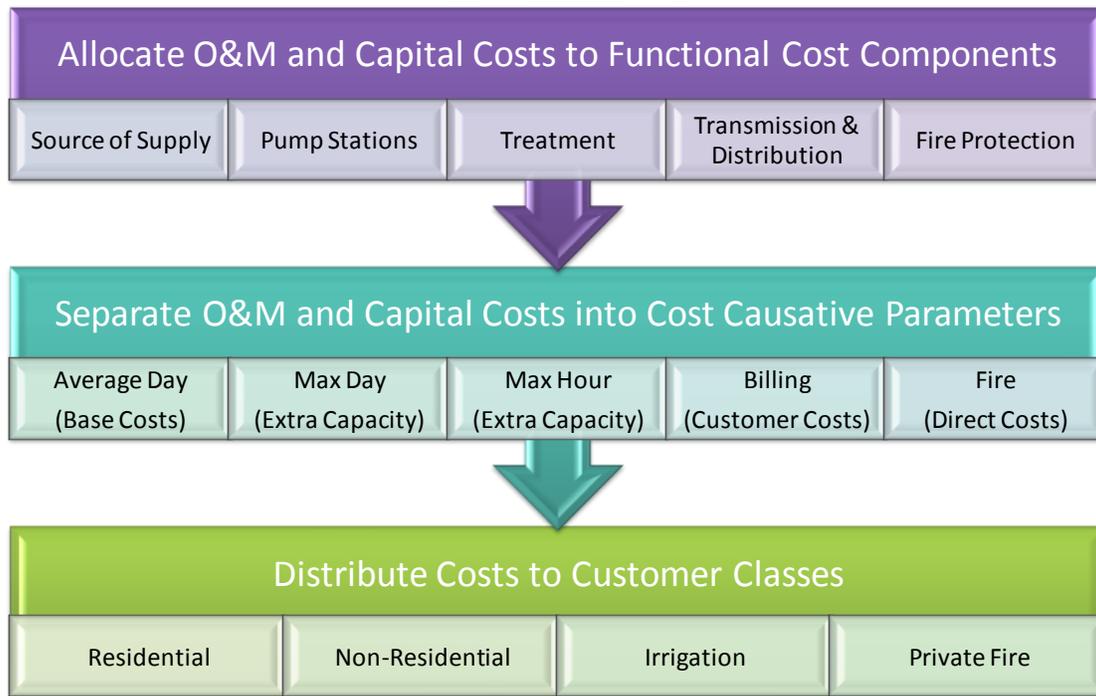
Functional Cost Components

In developing an equitable rate structure, we allocate revenue requirements to the various customer classifications according to the cost of service rendered. Allocations of these requirements to customer classes of Water should take into account water flow, the number of customers, and other relevant factors.

Customer classification occurs to reflect groups of customers with similar service requirements for whom a utility can serve at a similar cost. Each class represents a particular type of service requirement. For the purposes of the cost of service analysis, the customer classifications in this study include single family and multi-family residential, commercial, industrial, irrigation, outside City, construction, and private fire protection.

Figure 2 illustrates the general process for allocating costs of service to customer classes. The cost-of-service methodology first allocates costs to functional cost components, then to cost categories, and subsequently distributes the costs to customer classes. In this analysis, there are six primary cost categories: (1) base flow, or volume costs, (2) maximum day cost, (3) peak hour costs, (4) meter services, (5) customer and billing costs, and (6) fire protection.

Figure 2. General Cost of Service Allocation Methodology



Allocation to Cost Components

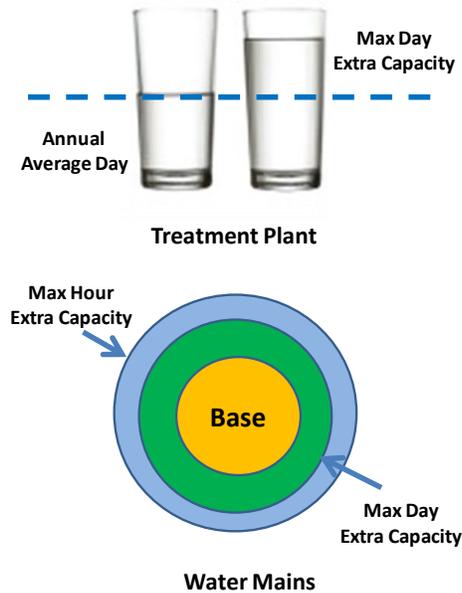
In this report, Black & Veatch analyzes the cost of providing water service by system function in order to properly allocate the costs to the various classes of customers and subsequently design rates. As a basis for allocating costs of service among customer classes, we have separated costs into the following four basic functional cost components: (1) “Base”; (2) “Extra Capacity”; (3) “Customer”; and (4) “Direct Assignment.” In order to provide service to its customers at all times, PUD must be capable of not only providing the total amount of water used, but also meet peak or maximum rates of demand.

- Base costs include the purchase of water, regulatory fees, debt service costs, water treatment, energy, administration, and operating and maintenance costs of the System associated with service to customers to the extent required for a constant, or average annual rate of use.
- Extra Capacity costs represent those operating costs incurred in meeting demands in excess of average, and capital related costs for additional plant and system capacity beyond that required for the average rate of use.
- Customer costs are those elements that tend to vary in proportion to the number of customers connected to the system. These include meter reading, billing, collecting and accounting, and maintenance and capital costs associated with meters and services.

- Directly assigned costs are costs specifically identified as, those incurred to serve a specific customer group(s). The separation of costs of service into these principal categories facilitates allocating such costs to the various customer classes based on the respective service requirements of each class.

Similar to the 2007 and 2013 Rate Cases, this rate case also uses the base-extra capacity allocation method. Figure 3 illustrates some of the base-extra capacity concepts for water systems.

Figure 3. Water Cost of Service Concepts



Black & Veatch has allocated each element of cost to functional cost components using the parameter or parameters having the most significant influence on the magnitude of that element of cost. We allocate O&M and general and administrative (G&A) expense items directly to appropriate cost components, while the allocation of capital and replacement costs uses a detailed allocation of related capital investment. The separation of costs into functional components provides a means for distributing such costs to the various classes of customers based on their respective responsibilities for each particular type of service.

For volume-related cost allocations, the first step in determining the allocation percentages is to assign system peaking factors. The Base element is equal to the average daily demand (ADD) and assigned a value of 1.0. PUD's maximum day (Max Day) demand is estimated to be 1.50 times the ADD.

Thus, the Max Day is assigned a value of 1.50. The maximum instantaneous usage is approximated by the maximum hourly (Max Hour) usage and is estimated to be 2.25 times the ADD. Thus, Max Hour is assigned a value of 2.25. These peaking factors are based on a combination of historic billing data and discussions with PUD staff.

Cost components that are solely Base-related, are allocated 100 percent to Base. Cost components that are designed to meet Max Day requirements, such as reservoirs, are allocated to Base and Max Day factors as follows:

$$\text{Base} = (1.0/1.50) \times 100 = 66.7\%$$

$$\text{Max Day} = (1.50 - 1.0)/1.50 \times 100 = 33.3\%$$

Cost components that are designed to meet Max Hour design requirements, such as Distribution, are allocated in a similar fashion, as follows:

$$\text{Base} = (1.0/2.25) \times 100 = 44.4\%$$

$$\text{Max Day} = (1.50 - 1.0)/2.25 \times 100 = 22.2\%$$

$$\text{Max Hour} = (2.25 - 1.50)/2.25 \times 100 = 33.3\%$$

Fire Protection

A direct cost to the water system is fire protection. Fire protection consists of those costs associated with having the capability to provide public (municipal fire hydrants) and private (individual fire sprinklers) fire suppression services. While a small amount of water is actually consumed for fire suppression and fire training, the water system is still designed to accommodate relatively large flows of water for short durations at suitable pressure. Therefore, when allocating O&M and capital expenses to the four basic functional costs factors, a pro rata share of O&M and capital expenses is directly assigned to the fire protection category.

Allocation of Operation and Maintenance Expenses

Table 13 summarizes the allocation percentages used in Table 14. Table 14 shows the allocation of O&M expense to cost functions. Where possible, percentage allocations use data gathered from employee time cards. O&M costs such as general and administrative expenses (G&A) are distributed to functional cost components based on the average of the other line item costs. A new line item for the impact of the Pure Water program has been added since the 2013 Rate Case. Because the program is a supply-driven one, the percentage allocations are assigned to base, extra capacity and fire protection functions. The total Test Year expense less funds available from other sources equal the net O&M expense recovered from rates. Line 17 of Table 14 presents a Net Test Year O&M expense of approximately \$347 million.

Table 13 O&M Allocation Percentage for TY 16

Description	Base	Extra Capacity		Customer		Fire Protection
	Base	Max. Day	Max. Hour	Meters	Cust./Bill.	
Finance & Information Technology	52.40%	17.50%	17.50%	5.30%	5.30%	2.00%
Employee Services & Quality Assurance	53.00%	25.00%	20.00%	0.00%	0.00%	2.00%
Customer Support Services	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
Long Range Planning	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Engineering Program Management	46.50%	25.00%	25.00%	0.00%	0.00%	3.50%
Environmental Monitoring & Technical Services	66.67%	33.33%	0.00%	0.00%	0.00%	0.00%
Water Operations	49.00%	25.00%	20.00%	1.00%	0.00%	5.00%
Pure Water	53.00%	25.00%	20.00%	0.00%	0.00%	2.00%
Water Administration and Lakes	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Administrative Services	53.00%	25.00%	20.00%	0.00%	0.00%	2.00%
Water Supply	66.30%	0.00%	0.00%	19.57%	12.63%	1.50%

Table 14 Allocation of O&M Expenses to Functional Cost Components

Line No.	Description	Total Costs	Common to All Customers					Fire Protection
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Billing	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
	Operating Expenses							
1	Finance & Information Technology	17,998,600	9,431,200	3,149,800	3,149,800	953,900	953,900	360,000
2	Employee Services & Quality Assurance	8,583,900	4,549,400	2,146,000	1,716,800	0	0	171,700
3	Customer Support Services	10,236,700	0	0	0	0	10,236,700	0
4	Long Range Planning	14,698,300	14,698,300	0	0	0	0	0
5	Engineering Program Management	9,110,000	4,236,100	2,277,500	2,277,500	0	0	318,900
6	Environmental Monitoring & Technical Services	6,433,700	4,289,100	2,144,600	0	0	0	0
7	Water Operations	85,804,900	42,044,500	21,451,200	17,161,000	858,000	0	4,290,200
8	Pure Water	1,324,900	702,200	331,200	265,000	0	0	26,500
9	Water Administration and Lakes	11,400,100	11,400,100	0	0	0	0	0
10	Administrative Services	33,526,400	17,769,000	8,381,600	6,705,300	0	0	670,500
11	Water Supply	225,085,900	149,232,900	0	0	44,043,900	28,432,800	3,376,300
12	Total O&M Expenses	424,203,400	258,352,800	39,881,900	31,275,400	45,855,800	39,623,400	9,214,100
13	Transfers	8,009,300	3,924,500	2,002,300	1,601,900	80,100	0	400,500
14	Total	\$432,212,700	\$262,277,300	\$41,884,200	\$32,877,300	\$45,935,900	\$39,623,400	\$9,614,600
	Less Other Revenue							
15	Miscellaneous Revenues	51,366,100	25,169,400	12,841,500	10,273,200	513,700	0	2,568,300
16	Other Adjustments	33,534,600	16,432,000	8,383,700	6,706,900	335,300	0	1,676,700
17	Net Operating Expenses	\$347,312,000	\$220,675,900	\$20,659,000	\$15,897,200	\$45,086,900	\$39,623,400	\$5,369,600

Allocation of Capital Costs

The estimated investment in water system facilities serves as a proxy for the further distribution of capital-related costs to the various customer classes. Table 15 illustrates the allocation of estimated plant investment serving water customers for the Test Year. The total plant investment of just over \$2 billion shown on Line 13 represents the estimated Test Year original cost less accumulated depreciation of plant in service. Line 14 represents the existing debt and transfers associated with Test Year 2016.

The allocation of specific items of investment to identified cost categories uses the basis previously described. For example, source of supply items correspond to flow (volume cost component) and then further delineated by whether the asset is common-to-all or primarily serves specific customers. Water treatment designs rely on treatment plant flow and are assigned to the volume cost function. Elements such as storage facilities serve to address system peaking needs, and as such have a peak hour cost component.

Units of Service

To establish the total cost responsibility of each class of service, Black & Veatch developed the unit costs of service for each cost function and assigned those costs to the customer classes based on the respective service requirements of each. Each customer class receives its share of base, maximum day and peak hour costs. The number of units of service required by each customer class provides a means for the proportionate distribution of costs previously allocated to respective cost categories. Table 16 summarizes the estimated units of service for the various customer classes.

The cost of service responsibility for base costs varies with the volume of water requirements and may be distributed to customer classes on that basis. Extra-capacity costs are those costs associated with meeting peak rates of water use, and are distributed to customer classes based on their respective system capacity requirements in excess of average requirement rates. Customer costs, which consist of meter related costs, billing, collection and accounting costs, are allocated based on the number of equivalent meters and bills. Private fire protection costs are allocated based on equivalent fire hydrants.

Table 16 shows the estimated units of service for the various customer classifications. Estimates of test year annual water consumption, shown in Column 1, are based on the projections of total water sales from Table 3. Average daily use of all water sales, which is simply Column 1 divided by 365 days, is presented in Column 2. Columns 3 through 8 represent the estimated maximum day and peak hour capacity factors for each customer class.

Table 15 Allocation of Net Capital Costs to Functional Cost Components

Line No.	Description	Total Costs	Common to All Customers					Fire Protection
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Billing	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
	Plant Assets							
1	Source of Supply	139,961,100	139,961,100	0	0	0	0	0
2	Pumping	41,246,400	27,497,600	13,748,800	0	0	0	0
3	Treatment	520,542,700	347,028,500	173,514,200	0	0	0	0
4	Transmission & Distribution	1,192,994,300	530,219,700	265,109,800	397,664,800	0	0	0
5	Meters & Service	39,852,900	0	0	0	39,852,900	0	0
6	Hydrants	3,321,100	0	0	0	0	0	3,321,100
7	Customer Billing	0	0	0	0	0	0	0
8	General Plant	28,821,800	16,013,900	6,722,300	6,036,200	0	0	49,400
9	Recycled Water	34,119,200	15,164,100	7,582,000	11,373,100	0	0	0
10	Total Plant Assets	2,000,859,500	1,075,884,900	466,677,100	415,074,100	39,852,900	0	3,370,500
	Less Other Revenue							
11	Miscellaneous Revenues	0	0	0	0	0	0	0
12	Other Adjustments	0	0	0	0	0	0	0
13	Net Capital Expenses	\$2,000,859,500	\$1,075,884,900	\$466,677,100	\$415,074,100	\$39,852,900	\$0	\$3,370,500
14	Capital Cost Allocation	\$75,820,000	\$40,468,400	\$17,638,200	\$15,837,800	\$1,746,000	\$0	\$129,600

Table 16 Units of Service for TY 16

Line No.	Description	Consumption		Maximum Day			Maximum Hour			Customer		Fire Protection
		Annual	Avg. Day	Factor	Total	Extra	Factor	Total	Extra	Meters	Billing	
	Column Reference	(1)	(2)=(1)/365	(3)	(4)=(3) x (2)	(5)=(4) - (2)	(6)	(7)=(6) X (2)	(8)=(7) - (4)	(9)	(10)	(12)
	Units of Measure	(HCF)	(HCF/day)		(HCF/day)	(HCF/day)		(HCF/day)	(HCF/day)	(EMs)	(Bills)	(EHs)
1	Single Family	24,100,457	66,029	175%	115,550	49,521	325%	214,593	99,043	237,405	2,679,672	0
2	Other Domestic	14,578,835	39,942	185%	73,893	33,951	335%	133,806	59,913	64,210	352,308	0
3	Non-Residential [*]	16,554,727	45,355	200%	90,711	45,355	270%	122,460	31,749	50,989	183,840	0
4	Temp Construction	221,122	606	225%	1,363	757	425%	2,575	1,212	2,117	4,560	0
5	Irrigation	9,090,405	24,905	200%	49,810	24,905	420%	104,602	54,791	28,157	84,588	0
6	Subtotal	64,545,546	176,837		331,327	154,490		578,035	246,708	382,878	3,304,968	
	Fire Service											
7	Public Fire	0	0		1,247	1,247		5,985	4,738	0	0	25,060
8	Subtotal	0	0		1,247	1,247		5,985	4,738	0	0	25,060
9	Total Water System	64,545,546	176,837		332,574	155,737		584,020	251,446	382,878	3,304,968	25,060

In the overall rate-setting process, there is a need to establish a base level of cost for which the cost of all customers can be measured. Customer-related meter and service costs are allocated based on the number of equivalent 5/8" and 3/4" meters because these meter sizes are the most prevalent meter sizes found in many water utilities. Included in the development of meter cost ratios is the direct cost of the various categories of labor involved in the installation, fringe benefit related overheads and other appropriate administrative overheads applicable to the labor costs, all direct materials and supplies costs, and the cost of equipment used in the installation.

Generally, equivalent meter cost ratios should be used when assigning elements of costs specifically related to meters among the various sizes of meters used by the customer in the system. PUD's most prevalent meter size is 3/4" and therefore is considered equal to one-meter equivalent. All larger meters are given a meter equivalent ratio based on hydraulic capacity, as illustrated in the box to the right. Thus, a 6-inch meter is the equivalent of thirty-three 3/4" meters based on hydraulic capacity. The equivalent number of meters and services shown in the third column from the end of Table 16 were estimated using AWWA standard meter flow rate equivalencies as adjusted to set 5/8" and 3/4" meters to an equivalency of 1.0. The equivalent number of private fire connections shown in the last column of Table 16 were estimated using AWWA standard meter flow rate equivalencies with 6" fire protection connections assigned an equivalency of 1.0. All public fire hydrants are assumed to be a 6" connection.

Meter Size	Capacity	Fire
	Meter Ratio	Hydrant Ratio
5/8", 3/4"	1.00	
1"	1.70	0.01
1.5"	3.30	0.03
2"	5.30	0.06
3"	10.00	0.16
4"	16.70	0.34
6"	33.30	1.00
8"	53.30	2.13
10"	76.70	3.83
12"	143.30	6.19
16"	250.00	13.19

Customer billing and accounting costs are distributed to classes based on number of bills for each customer class. The final column presents direct charges for fire protection and these costs are allocated using equivalent hydrant ratios summarized in the box above.

In accordance with M1 standards and typical engineering design, the provision of the maximum hour component addresses peak system needs, in addition to those posed by fire protection requirements. To the extent possible, actual system and billing data by customer class is used to derive maximum day and maximum hour capacity factors. For the purposes of this analysis, peak factors were obtained from the City's Water Facilities Master Plan, January 2011, and from the City Engineering Department. As noted previously, these data sources yielded a maximum day to average day, or base, demand ratio of 1.50 and a maximum hour ratio of 2.25. These ratios are within the ranges typically experienced by other utilities across the nation.

Cost of Service Allocations

Costs of service are allocated to the customer classes by application of unit costs of service to respective service requirements. Unit costs of service are based upon the total costs previously allocated to functional components and the total number of applicable units of service. Dividing the costs allocated to functional cost components by the respective total units of service requirements develops unit costs of operation and maintenance expense, and net capital costs.

Unit Costs of Service

Table 17 presents total Test Year O&M expense (Table 14) and net capital costs (Table 15) allocated to functional cost components.

Distribution of Costs of Service to Customer Classes

The customer class responsibility for service is obtained by applying the unit costs of service to the number of units for which the customer class is responsible. Table 18 illustrates this process, in which the unit costs of service are applied to the customer class units of service.

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Table 17 Unit Costs of Service for TY 16

Line No.	Description	Total Costs	Common to All Customers					Fire Protection
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	
	Unit Cost of Service							
1	Net Operating Expense	347,311,900	220,675,800	20,659,000	15,897,200	45,086,900	39,623,400	5,369,600
2	Capital Costs	75,820,000	40,468,400	17,638,200	15,837,800	1,746,000	0	129,600
3	Total Cost of Service	\$423,131,900	\$261,144,200	\$38,297,200	\$31,735,000	\$46,832,900	\$39,623,400	\$5,499,200
4	Units of Service (Total)		64,545,546	156,094	252,804	382,878	3,372,444	32,242
5	Cost per Unit		\$4.05	\$245.35	\$125.53	\$122.32	\$11.75	\$170.56
6	per Unit		HCF	HCF/Day	HCF/Day	EM	Bill	EH

Table 18 Allocation of COS to Customer Classes

Line No.	Description	Total Costs	Common to All Customers					Fire Protection
			Base	Extra Capacity		Customer		
			Base	Max. Day	Max. Hour	Meters	Cust/Bill.	
		(\$)	(\$)	(\$)	(\$)	(\$)	(\$)	(\$)
			HCF	HCF/Day	HCF/Day	EM	Bill	EH
1	Cost per Unit		\$4.05	\$245.35	\$125.53	\$122.32	\$11.75	\$170.56
	Single Family							
2	Units		24,100,457	49,521	99,043	237,405	2,679,672	0
3	Allocation of COS	182,613,600	97,507,800	12,149,900	12,433,000	29,039,000	31,483,900	0
	Other Domestic							
4	Units		14,578,835	33,951	59,913	64,210	352,308	0
5	Allocation of COS	86,828,400	58,984,400	8,329,700	7,521,000	7,854,000	4,139,300	0
	Non-Residential [*]							
6	Units		16,554,727	45,355	31,749	50,989	183,840	0
7	Allocation of COS	90,488,700	66,978,600	11,127,800	3,985,500	6,236,800	2,160,000	0
	Temp Construction							
8	Units		221,122	757	1,212	2,117	4,560	0
9	Allocation of COS	1,545,100	894,600	185,800	152,100	259,000	53,600	0
	Irrigation							
10	Units		9,090,405	24,905	54,791	28,157	84,588	0
11	Allocation of COS	54,205,200	36,778,800	6,110,400	6,878,100	3,444,100	993,800	0
	Public Fire							
12	Units		0	1,247	4,738	0	0	25,060
13	Allocation of COS	5,174,900	0	305,900	594,800	0	0	4,274,200
	Private Fire							
14	Units		0	357	1,358	0	67,476	7,182
15	Allocation of COS	2,276,000	0	87,700	170,500	0	792,800	1,225,000
16	TOTAL COS	\$423,131,900	\$261,144,200	\$38,297,200	\$31,735,000	\$46,832,900	\$39,623,400	\$5,499,200

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

Adequacy of Existing Rates to Meet Costs of Service

Presented in Table 19 is a comparison of the allocated costs of service and revenues under existing rates for the system in total. For the Water Enterprise, public fire protection provides a general benefit to all customers, and thus, is allocated to all customers in Column 2. Adjusted allocated costs of service are shown in Column 3. The last column in the table indicates the approximate adjustment to customer class rate levels necessary to recover 100 percent of the allocated costs of service.

Table 19 Comparison of Adjusted COS with Revenues under Existing Rates

Line No.	Description	Allocated COS (\$)	Public Fire Allocation (\$)	Adjusted COS (\$)	Rev Under Existing Rates	Indicated Rev Increase (%)
	Column Reference	(1)	(2)	(3)	(4)	(5)
1	Single Family	182,613,600	2,625,500	185,239,100	171,235,900	8.18%
2	Other Domestic	86,828,400	1,248,400	88,076,800	79,247,500	11.14%
3	Non-Residential [*]	90,488,700	1,301,000	91,789,700	82,134,900	11.75%
4	Construction	1,545,100	0	1,545,100	1,400,900	10.29%
5	Irrigation	54,205,200	0	54,205,200	49,293,000	9.97%
6	Subtotal	415,681,000	5,174,900	420,855,900	383,312,200	9.79%
7	Public Fire	5,174,900	(5,174,900)	0	0	0.00%
8	Private Fire	2,276,000	0	2,276,000	2,088,900	8.96%
9	Subtotal	7,450,900	(5,174,900)	2,276,000	2,088,900	8.96%
10	Total Water System	\$423,131,900	\$0	\$423,131,900	\$385,401,100	9.79%

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

PROPOSED RATE ADJUSTMENTS

The initial consideration in the derivation of water rate schedules for utility service is the establishment of equitable charges to the customers commensurate with the cost of providing that service. While the cost of service allocations to customer classes should not be construed as literal or exact determinations, they offer a guide to the necessity for, and the extent of, rate adjustments. Practical considerations sometimes modify rate adjustments by taking into account additional factors such as the extent of change from previous rate levels, existing contracts, and past local policies and practices.

Existing Rates

A summary of existing water rates was presented earlier in Table 4. The existing rates consist of a service charge, which varies by customer class and meter size, and a separate commodity charge for each customer class applicable to each hundred cubic feet of billed water sales. The commodity charge incorporates a tier structure for single-family residential customers while all other classes are charged a uniform rate regardless of water consumption.

Proposed Rate Options

The cost of service analysis described in the preceding sections of this report provides a basis for the design of rates. It is important to note that the COS analysis represents current conditions and as discussed earlier in this report, current conditions are different from those present during the 2013 Rate Case. The rate schedules (shown in Tables 20, 22, and 23) take into consideration City policies and these different conditions. At the request of the City, Black & Veatch examined several rate options to best meet these policies and conditions, particularly to address the impacts of water conservation and customer demand, and State-mandated water use restrictions.

Design of Base Fee

The meter charge or base fee (as shown in Table 20) and the fire protection charge (Table 23), reflect the estimated cost of service rate. Both tables include the allocated cost of billing, meter service, and some elements of water supply (fixed costs charged by CWA). As described previously, the meter charges also reflect the recommendation of applying hydraulic capacity ratios to the meter sizes noted from the last rate case and per water industry standards. Because the City does not charge fire departments for public fire hydrant service, the industry standard for recovering this cost is via the meters and services component of the water user charge. Black & Veatch has reflected the cost of public fire protection in the proposed meter charges.

Table 20 Proposed Meter Rates

Meter Size	Meter Charge					
	Existing Rates	Proposed Rates				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Effective Date	1/1/2016	7/1/2016	7/1/2017	7/1/2018	7/1/2019	
	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)
5/8", 3/4"	20.31	22.26	24.75	26.05	27.56	29.46
1"	27.51	29.50	32.84	34.61	36.67	39.36
1.5"	43.96	46.04	51.33	54.18	57.49	62.01
2"	64.53	66.72	74.43	78.64	83.52	90.31
3"	112.86	115.32	128.74	136.13	144.70	156.83
4"	181.75	184.59	206.15	218.08	231.90	251.66
6"	352.44	356.23	397.94	421.11	447.97	486.60
8"	558.10	563.03	629.02	665.74	708.28	769.65
10"	798.72	804.98	899.38	951.95	1,012.86	1,100.83
12"	1,483.55	1,493.60	1,668.87	1,766.54	1,879.71	2,043.42
16"	2,580.72	2,596.85	2,901.66	3,071.61	3,268.50	3,553.53

Design of Volumetric Charges

Any proposed rate structure should provide for full cost recovery. However, in addition to this fundamental requirement, the design of water rate structures should also meet the following objectives:

- Mitigate revenue volatility
- Promote water conservation
- Minimize excessive customer bill impacts

Consequently, water rate design must balance financial management, long-range planning, and public policy considerations.

Since the 2007 rate case, Southern California has experienced severe drought conditions. In response, the State has issued statewide mandated water use restrictions. Also, consumer awareness regarding the need to conserve water is very high. Moreover, the increased use of water-efficient devices (toilets, dishwashers, washers, etc.) has helped customers conserve. To provide an incentive for those who conserve, the rate structure designed in 2013 for single-family residential customers includes a fourth tier.

The tier breakpoints reflect general usage patterns of San Diego's single-family residential customers as well as rate setting industry standards and AWWA household usage survey data. AWWA survey data indicate that typical indoor residential water consumption is roughly 50 to 60 gallons per person per day. Depending on typical residential family sizes of 2 to 3 persons per household, approximate monthly residential water use can range from 3,000 gallons per month to over 5,000 gallons per month (or 4 HCF to 7 HCF per month). Because water resource supply in San Diego is limited and expensive, it is reasonable to base the Tier 1 breakpoint at 4 HCF (1 HCF = 748 gallons) per month. This range serves to recognize water efficiency within this customer class.

The Tier 2 breakpoint is set at 12 HCF per month to reflect typical single-family customer water consumption. The bill tabulation analysis performed as part of the COS indicates that approximately

50 percent of billed usage for this class is about 12 HCF of water use. This average amount reasonably serves as the Tier 2 breakpoint. The breakpoint between Tiers 3 and 4, at 18 HCF, represents an outdoor irrigation or landscape allowance for this customer class. Single-family residential use beyond 18 HCF per month would represent high use for this class.

The pricing differentials between tiers are based on factors similar to the maximum day and peak hour peaking factors described earlier in this report as well as City water conservation program costs and local and non-local water supply costs. For the study period, non-local water supply costs, such as imported water and desalinated water supplies, also include expenses related to distribution and administration costs. In addition, changing the mix of water supplies through the tiers also contributes to the differentials. Black & Veatch has utilized a combination of these factors as well as peak demand considerations in setting the proposed tiers.

For the study period, the units of water included in Tier 1 are priced at the lowest rate since it represents the City’s least expensive source of water – local supply. As water consumption increases beyond the base tier, water supplies to meet this demand lead to greater investments by the City in alternate sources of supply, yet at much higher costs per acre foot. The use of peaking factors reasonably represents the relationship between higher water consumption and increasing water supply costs. As a check on the reasonableness of proposed pricing differentials for the tiers, Black & Veatch estimated the cost of local water and the cost of treated Tier I CWA water. These figures only reflect treatment costs and do not include such expenses as distribution and pumping. Roughly speaking, the cost of treated Tier I CWA water, which is the most expensive water that the City purchases is roughly 4 to 5 times the cost of local supply. Thus, Black & Veatch has limited the pricing differential between Tier 1 and Tier 4 to less than these figures.

In addition to the above considerations, mitigating revenue volatility during the summer irrigation season is also a priority. To address this concern, Black & Veatch used the following cost recovery allocation to guide cost recovery by tier. Table 21 is an illustrative example of the allocation used and shows that the first two tiers recover the majority of base demand costs, which represent the majority of costs for the single-family residential class. Tiers 3 and 4 primarily recover maximum hour costs, which reflect peaking (typically irrigation) demands. Table 22 presents the proposed commodity rates.

Table 21 Volumetric Cost Recovery over Tiers

Description	Percentage of Cost Recovery in				Total
	Tier 1	Tier 2	Tier 3	Tier 4	
Base Demand Costs	40%	50%	10%	0%	100%
Maximum Day Costs	15%	45%	30%	10%	100%
Maximum Hour Costs			30%	70%	100%

Table 22 Proposed Commodity Rates

Class	Commodity Rate					
	Existing Rates	Proposed Rates				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Effective Date	1/1/2016	7/1/2016	7/1/2017	7/1/2018	7/1/2019	
	\$/hcf	\$/hcf	\$/hcf	\$/hcf	\$/hcf	\$/hcf
Single Family						
Tier 1 (0-4 HCF)	3.896	4.240	4.443	4.770	5.042	5.385
Tier 2 (5-12 HCF)	4.364	4.754	4.976	5.342	5.647	6.031
Tier 3 (13-18 HCF)	6.234	6.791	7.108	7.632	8.067	8.616
Tier 4 (19+ HCF)	8.766	9.550	9.996	10.732	11.344	12.117
Other Domestic	4.650	5.125	5.365	5.763	6.091	6.515
Non Residential	4.470	5.020	5.243	5.622	5.941	6.333
Construction	4.947	6.023	6.316	6.795	7.183	7.727
Irrigation	4.947	5.666	5.941	6.390	6.755	7.256

In Table 22, the proposed commodity rates are shown with accuracy to 3 decimal places for consistency with the level of accuracy used for rate entry and customer bill calculation in the Public Utilities Customer Care Solutions billing system.

Design of Private Fire Protection

The design of private fire protection connection charges is essentially the same as that for the base fee. The difference is that for private fire connections, the industry standard is to designate the 6" diameter connection as having a flow equivalency of 1.0.

Table 23 Proposed Fire Line Rates

Fire Line Size	Fire Protection					
	Existing Rates	Proposed Rates				
		FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Effective Date	1/1/2016	7/1/2016	7/1/2017	7/1/2018	7/1/2019	
	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)	(\$/monthly)
1"	2.58	2.82	3.23	3.62	3.85	4.43
1.5"	2.58	2.82	3.23	3.62	3.85	4.43
2"	4.00	4.37	5.01	5.61	5.97	6.87
3"	15.50	16.92	19.38	21.72	23.10	26.58
4"	19.82	21.63	24.77	27.77	29.53	33.98
6"	29.27	31.95	36.60	41.01	43.62	50.19
8"	41.34	45.12	51.68	57.92	61.60	70.88
10"	53.41	58.29	66.76	74.83	79.58	91.57
12"	63.74	69.57	79.68	89.31	94.98	109.29
16"	103.35	112.80	129.20	144.80	154.00	177.20

Revenue Sufficiency

Presented in Table 24 is a comparison of Test Year allocated cost of service with revenues for the proposed rate schedule. Test year costs of service are obtained from Table 19 and the proposed rates recover essentially 100 percent of the total cost of service.

Table 24 Revenues under Proposed Rate Schedule for TY 16

Line No	Description	Adjusted Cost of Service	Rev Under Proposed Rates	Percent Recovery
		(\$)	(\$)	(%)
1	Single Family	185,239,100	185,239,100	100%
2	Other domestics	88,076,800	88,076,800	100%
3	Non-Residential [*]	91,789,700	91,789,700	100%
4	Construction	1,545,100	1,545,100	100%
5	Irrigation	54,205,200	54,205,200	100%
6	Subtotal	420,855,900	420,855,900	100%
Fire Service				
7	Private Fire	2,276,000	2,280,000	100%
8	Subtotal	2,276,000	2,280,000	100%
9	Total Water System	\$423,131,900	\$423,135,900	100%

[*] Non-Residential customers include Commercial, Industrial, and Outside City.

Comparison of Typical Bills

While the rate structure proposed above recover essentially 100 percent of the necessary costs of service for each customer class, Black & Veatch believes it is important to review the impact of any revenue adjustment and rate structure change on typical bills. Figures 4 through 7 illustrate a comparison of a typical bi-monthly bill for a single-family residential customer at water consumption levels of 6 HCF, 12 HCF, 30 HCF, and 44 HCF for the proposed rate schedules, which include the impact of drought.

Figure 4. Single-Family Residential Bi-Monthly Typical Bill for 3/4" Meter and Using 6 HCF – Rates Effective 1/1/2016

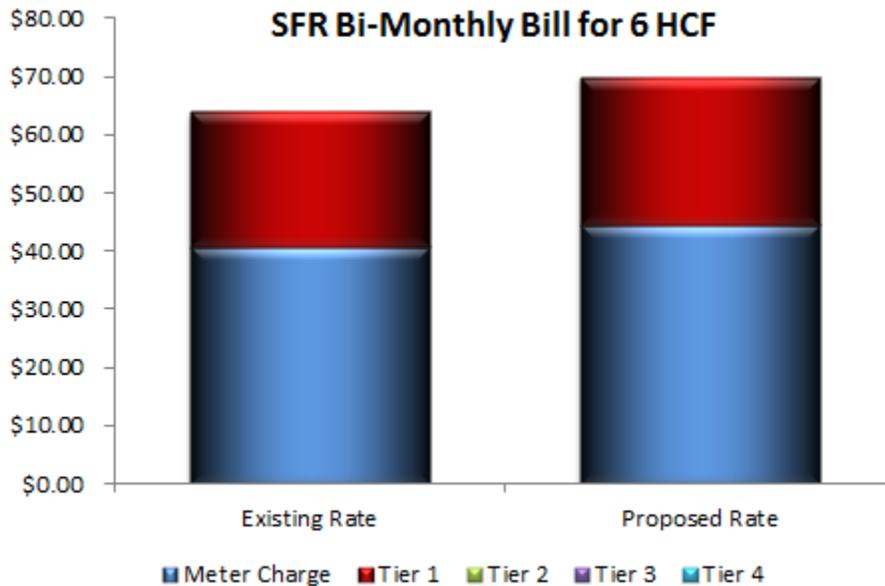


Figure 5. Single-Family Residential Bi-Monthly Typical Bill for 3/4" Meter and Using 12 HCF - Rates Effective 1/1/2016

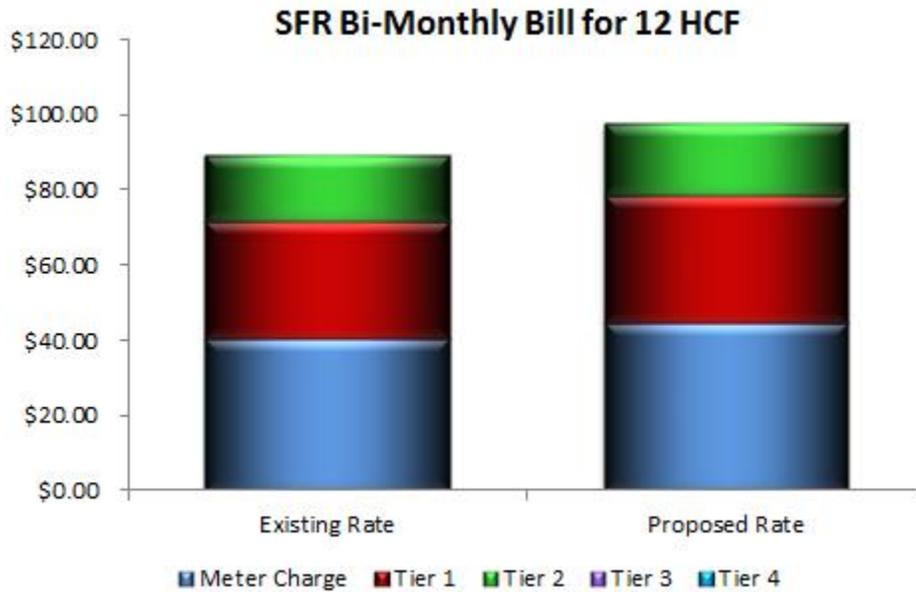


Figure 6. Single-Family Residential Bi-Monthly Typical Bill for 3/4" Meter and Using 30 HCF - Rates Effective 1/1/2016

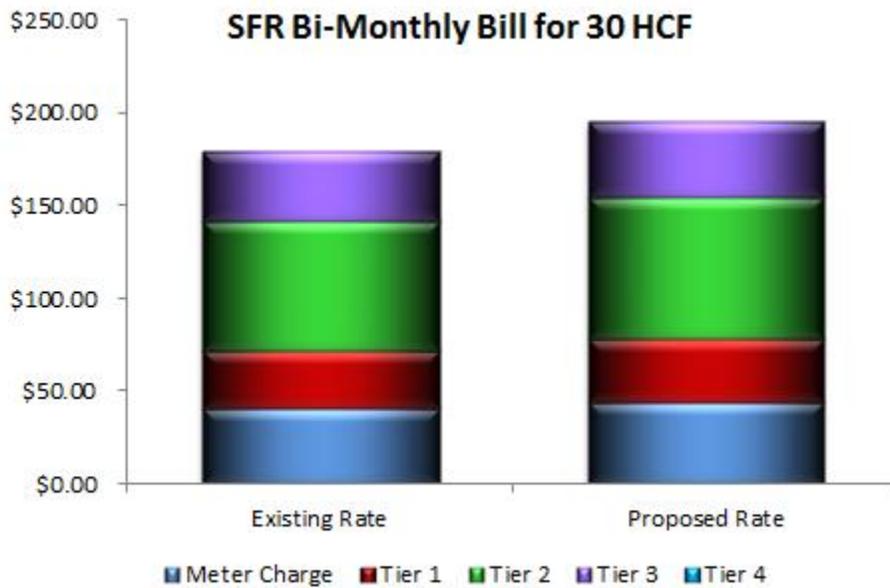
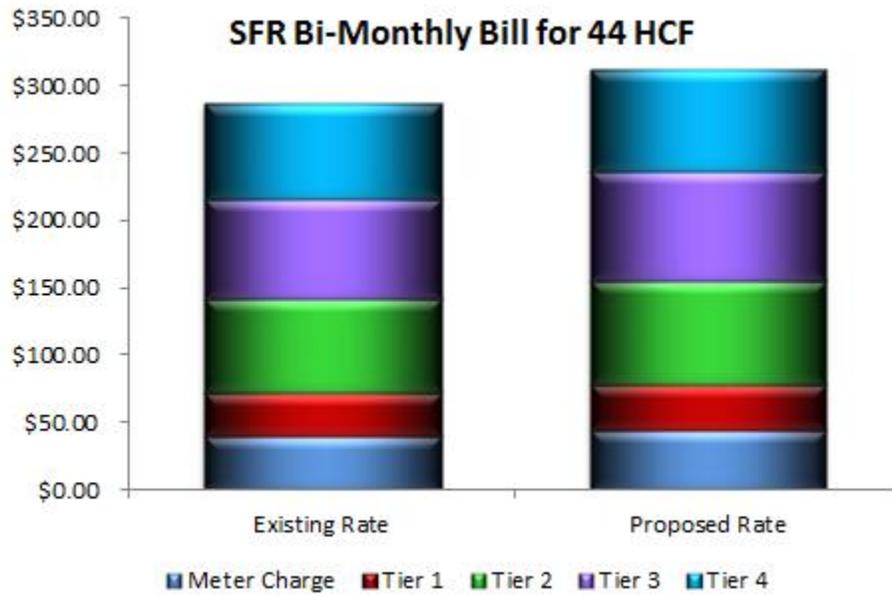


Figure 7. Single-Family Residential Bi-Monthly Typical Bill for ¾" Meter and Using 44 HCF - Rates Effective 1/1/2016





CITY OF SAN DIEGO

Recycled Water Pricing Study Report

June 19, 2013

FINAL REPORT



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1.0 EXECUTIVE SUMMARY

The City of San Diego (City) commissioned Raftelis Financial Consultants (RFC) to conduct the Recycled Water Pricing Study (Pricing Study). The purpose of the study was to review all financial aspects of the recycled water operations and capital program to:

- Calculate the true cost of producing and distributing recycled water
- Recommend a pricing structure that promotes use and recovers costs associated with producing and distributing recycled water
- Review alternative rate structures to encourage recycled water demand
- Determine appropriateness and amount of revenue and expenses that should be allocated among potable water, wastewater and recycled water programs and the resultant impacts on customers
- Develop a user-friendly computer Pricing Model that could be used to model rates in future years and train City staff on its use

The Pricing Study included extensive review of the current and projected recycled water demands, operating and capital expenses, and policy issues related to allocation of costs among recycled water, potable water and wastewater enterprises.

The following sections document the background, cost of service review, analysis, findings, and recommendations that are the product of the study.

1.1. Background

This section describes the regulatory background, the state of the current recycled system and current rates for recycled water.

1.1.1. Regulatory

Since 1963, the City has treated its wastewater at the Point Loma Wastewater Treatment Plant (PLWTP). Wastewater is currently being treated to advanced primary standards. In 1972, the federal Clean Water Act (CWA) was adopted and it required wastewater treatment plants provide a minimum of secondary treatment. However, Section 301(h) of the CWA allowed facilities that discharge to certain marine waters to apply for a waiver from secondary treatment standards by 1982. The City originally applied for the waiver but withdrew it, and in 1987 the US Environmental Protection Agency (EPA) along with other environmental groups sued the City for not meeting the provisions of the CWA. The Ocean Pollution Reduction Act (OPRA) was passed in 1994, which allowed the City to reapply for a Section 301(h) waiver. The City reapplied and received a waiver from treating wastewater to secondary standards as required by the CWA. One of the conditions of the OPRA required a commitment by the City to implement a water reclamation program that would create a system capacity to treat 45 million gallons per day (MGD) by 2010. The City has fulfilled the treatment capacity requirement with the

completion of the 30 MGD North City Water Reclamation Plant (NCWRP) in 1997 and the 15 MGD South Bay Water Reclamation Plant (SBWRP) in 2002.

The City received approximately \$69.5 million in construction grants from the United States Environmental Protection Agency (EPA) for the construction of the NCWRP. Conditions of that grant included the following goals:

- A minimum of 75 percent of the plants design capacity (at least 22.5 MGD) must be treated at NCWRP. Of these flows the City will beneficially reuse 10 percent upon certification
- The City will attempt to reuse 25 percent of the flows (5.6 MGD) into the plant by December 31, 2003
- The City will attempt to reuse 50 percent of the flows (11.25 MGD) into the plant by December 31, 2010

As long as the City is making attempts at maximizing beneficial reuse of recycled water, the EPA does not include penalties for failing to meet the 50 percent reuse goal. Fiscal year (FY) 2010 averaged approximately 6.3 MGD of recycled water use from the NCWRP, including in-plant usage. However, peak month (July 2009) usage during the dry summer weather was 9.3 MGD, with a peak day demand of 13 MG.

A 1995 federal court order further required the City to construct an optimized recycled water distribution system in conjunction with building the NCWRP. The distribution facilities that comprise the Optimized System were installed between 1995 and 1998 with Public Utilities Department Water Branch (Water Branch) funds to enable delivery of recycled water upon completion of the reclamation plant. The Optimized System, also known as the “backbone system”, is composed of recycled water facilities built to store and distribute recycled water produced at the NCWRP to the area north of Highway 52, south of Mira Mesa Boulevard, west of Interstate 15, and an area east of Interstate 15 in the Miramar Ranch North community. The total cost of the Optimized System is approximately \$69.8 million and it consists of the following facilities:

- 66 miles of pipeline ranging from 4” – 18” in diameter
- 9 MG Reservoir
- 2 pump stations

Since 2001, the Water Branch has expanded the Optimized System by connecting additional recycled water customers to the backbone system. Excluding the costs of the treatment plants, the City has invested about \$69.8 million in the optimized system and about \$15.1 million in retrofits so that customers could use recycled water. In addition, the City has invested about \$52.9 million in expanding the entire recycled water system. Out of the total costs of about \$137.8 million, \$25.6 million was grant funded, \$62 million was debt financed and the remaining \$50.2 million was cash financed.

1.1.2. Current Recycled Water System

To increase use of recycled water, the City continues to expand the distribution system to connect other retail customers. Recycled water distribution facilities are currently in place to serve the northern section of the system extending from the coast to the City of Poway (Poway). Additionally, through the Recycled Water Retrofit Program¹, the City has invested approximately \$15.1 million over 10 years to retrofit customers enabling them to use recycled water. The current distribution system in the northern section of the system now consists of 83 miles of pipeline, 9 MG and 3 MG reservoirs, and 3 pump stations. When the program expired in 2001, recycled water commodity rates were reduced from 90 percent of the potable rate, from \$1.34 per hundred cubic feet (HCF) to \$0.80 per HCF to encourage retail customers to convert to recycled water use. The City currently sells recycled water produced at NCWRP to the City of Poway, Olivenhain Municipal Water District and to approximately 560 retail customers. Additionally, the City started recycled water sales from SBWRP to the International Boundary Water Commission (IBWC) in 2006, Otay Water District in 2007, and to Caltrans in 2008.

The Recycled Water “distribution system” and all its related costs have always been the responsibility of the Water Enterprise Fund, while all of the treatment costs through tertiary and treatment plant costs have been funded by the Metro Wastewater Fund.

In addition to the volumetric rate, the City collects monthly base fees based on the size of the meter serving each customer. At the current volumetric rate of \$0.80 per HCF, if considered independent of the potable water fund, the recycled system is operating in significant deficit. In FY 2012, total revenue requirements including operation and maintenance (O&M) expenses, rate funded capital costs and debt service costs were approximately \$63.7 million. Operating and non-operating revenues and credits from the Metropolitan Water District of Southern California (MWD) and the San Diego County Water Authority (SDCWA) were approximately \$7.1 million, resulting in a net deficit of approximately \$56.6 million.

1.2. Projections

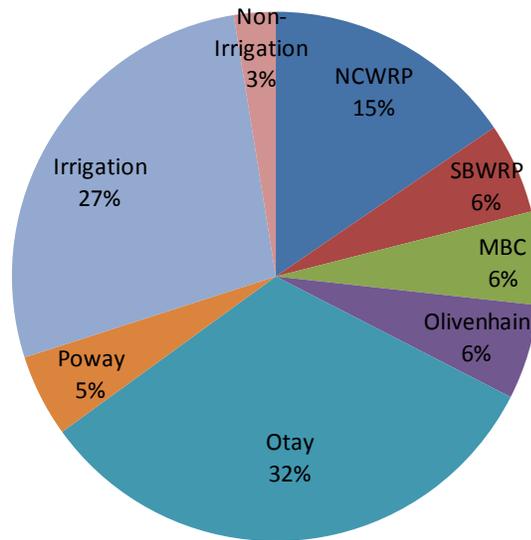
To determine rates, it is necessary to review the user and usage characteristics, revenue requirements, and miscellaneous revenue offsets.

¹ Recycled Water Retrofit Program more fully explained on pages 16 and 29.

1.2.1. Customers

The entire recycled water distribution system comprised of North City and South Bay service areas currently has about 570 customers with meters ranging in size from 1-inch to 10-inch. Most are retail (irrigation and non-irrigation) customers; however, the City sells recycled water to a few agencies including Otay Water District, Olivenhain Municipal Water District, and the City of Poway. A significant quantity of recycled water is used at the NCWRP and SBWRP for internal treatment processes which use the recycled water for filter backwashing and irrigation. Recycled water is used at the Metro Biosolids Center (MBC) for process water for sludge treatment and irrigation purposes.

FY 2012 Actual Recycled Water Usage*

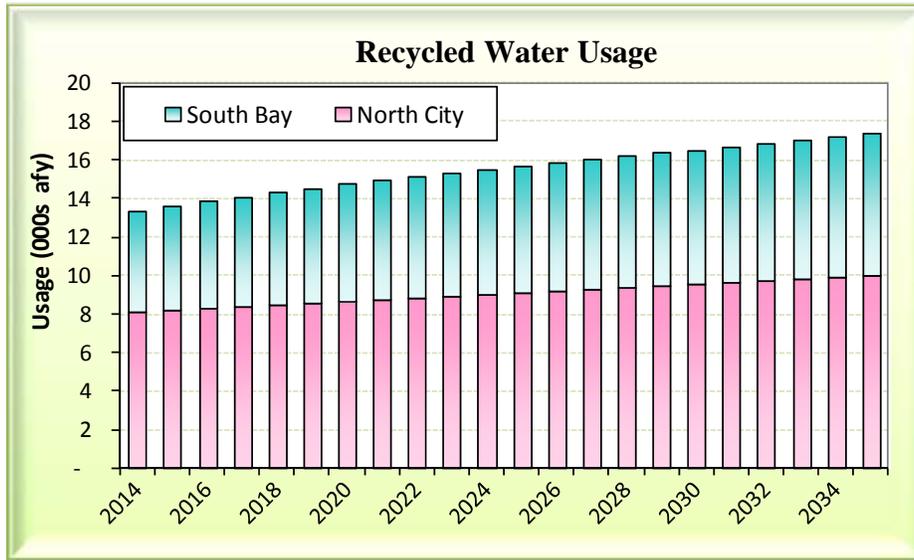


* FY 2012 = July 2011 to June 2012

1.2.2. Usage

Recycled water commodity rates are very sensitive to usage, (i.e. given the low volume levels, a relatively small change in demand has a significant impact on unit costs), and this emphasizes the importance of accurately estimating future sales. For example, in August 2012, the combined output of the reclamation plants exceeded 18 MGD, while during the winter months, production drops to 4 – 5 MGD. Future sales are dependent upon several factors including the expansion of the distribution system, seasons and weather conditions as most of the recycled water is used for landscape irrigation. Based on current planning, recycled water sales are projected to grow at a stable rate as the distribution system is expanded by the City and wholesale agencies. The current projected recycled water usage from NCWRP and SBWRP is shown in Figure ES-1 and includes recycled water usage within the reclamation plants.

Figure ES-1

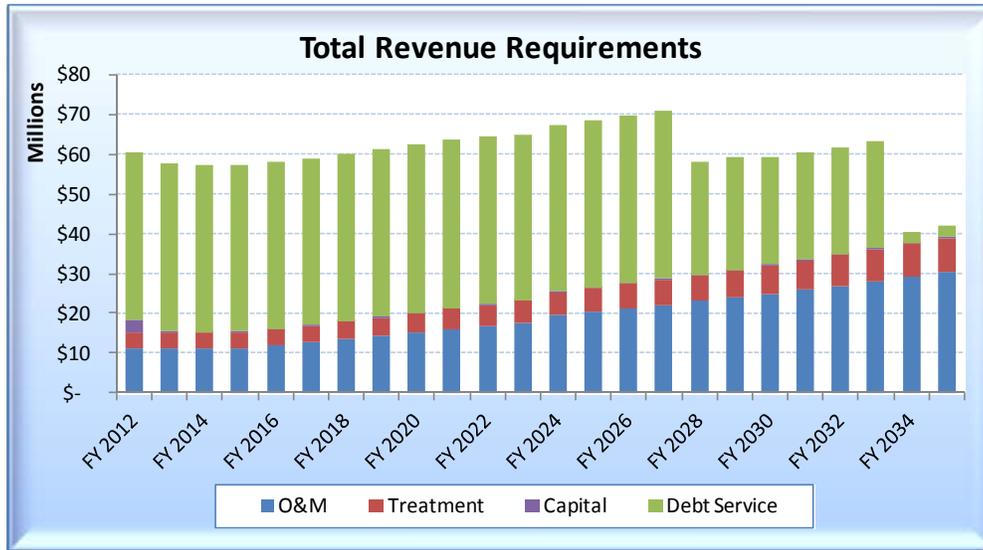


Average increase over the planning horizon is approximately 1.5 percent per year.

1.2.3. Gross Revenue Requirements

Projected revenue requirements include all operating and capital expenses of the recycled water system. Gross revenue requirements include recovery of operating and maintenance (O&M), pay-as-you-go capital (PAYGO), and debt service costs related to the recycled distribution system. The City’s effort to meet the goal of beneficially reusing 50 percent of wastewater flow at NCWRP will require additional capital investment. However, these additional investments have not been determined and thus are not part of this analysis. The budgeted capital expenses will be partially funded by PAYGO funds recovered through rates. The City’s policy is to fund 80 percent of the capital costs through debt funding and the balance through PAYGO and other sources. Figure ES-2 shows the projected gross revenue requirements for the recycled water system.

**Figure ES-2
Total Annual Revenue Requirements**



Note: Decreases in debt service costs in FY 2028 and FY 2034 reflect the time when the treatment plants debt are paid off

Net revenue requirements, which are the gross revenue requirements less offsets, are revenues to be potentially derived from rates for recycled water. The offsets are discussed below.

1.2.4. Revenue Offsets

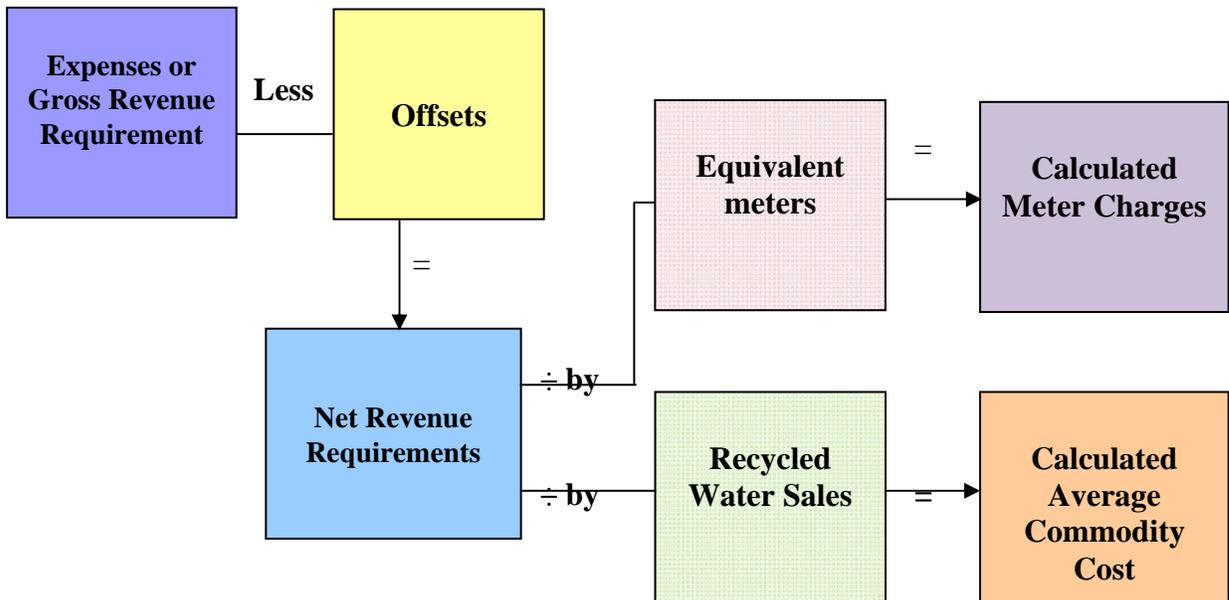
Recycled water rates are determined from net revenue requirements and take into account offsets from several sources including:

- Incentives from MWD and SDCWA in the amount of up to \$250 and \$200 per acre foot (AF) of recycled water sales, respectively, for all sales at NCWRP and only SDCWA incentives for retail sales at SBWRP;
- Fees of \$25 per AF from Olivenhain Municipal Water District (Olivenhain) for sales in its service area because it is not a party to the Metro Agreement. The \$25 per AF fee, per Olivenhain’s contract, only applies to sales to Olivenhain’s initial connection and does not apply to the recycled water it sells to any customers within the city limits of San Diego;
- Revenues collected from recycled water sales to Poway based upon a negotiated contract rate;
- Capacity charges collected from new customers; and
- Meter installation costs from retail customers.

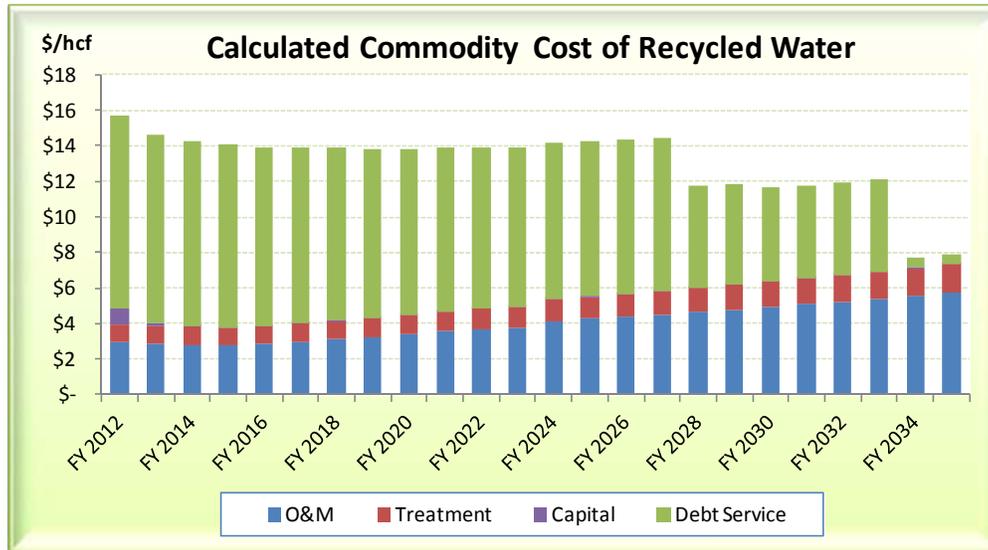
1.2.5. Cost of Service Rates

The net revenue requirement (the difference between the gross revenue requirements and the revenue offsets) for each year is divided by the projected recycled water sales in that year to derive the average commodity cost to all customers of recycled water as shown in Figure ES-3. The calculated average commodity cost projection is shown in Figure ES-4.

Figure ES-3
Calculation of Rates



**Figure ES-4
Calculated Rates**



1.3. Observations

This section of the Executive Summary outlines some findings and observations that will enhance the viability of the recycled water program.

1. The current commodity rate for recycled water is \$0.80 per HCF. The Water Branch began selling recycled water in October 1997 at \$1.34 per HCF and reduced the rate to its current level in July 2001 to encourage recycled water use and thereby reduce the demand on the supply of imported water. Since that time, over 350 customers have been added to the system through FY 2013.
2. Recycled water rates are very sensitive to the quantity of recycled water sold. Most of the costs of the recycled water system are fixed, including debt service and most of the O&M costs; spreading these costs over a larger usage base would result in lower rates.
3. To make recycled water available to more users, the City has planned for moderate capital investments in the distribution system. Capital costs will be funded on a PAYGO basis from rates, new debt, capacity fees, and federal and state grants.
4. By substituting recycled water for potable water, the City’s potable water system has benefited from the expansion of the recycled water system through the creation of additional capacity and the resultant reduction in potable water costs:
 - a. Since the recycled water system is a **sunk cost**—a cost that has been incurred and cannot be reversed—for the most part, using it to its full potential provides the City with an alternate water supply. It frees up

capacity in the potable system that becomes available to new users. This freed up water supply is key part of the City's overall long range water supply planning process. Recycled water customers benefit from rates lower than potable water rates and also from a relatively reliable (more drought proof) supply.

- b. Since the potable water system loses customers, there is a reduction in operating revenue to the potable water system until new users come on line and use up the freed capacity. The loss of revenue is small when compared to the potable water revenues. In the long-term, the recycled water capacity allows the City greater flexibility to add customers.
 - c. Use of recycled water reduces potable water purchase costs, as well as treatment and delivery costs. In addition, use of recycled water has been instrumental in meeting the City's overall demand reduction targets associated with recent water supply allocations from SDCWA.
5. The City receives credit from MWD and SDCWA for recycled water sales at the NCWRP. MWD and SDCWA provide incentives of up to \$250 and \$200 per AF, respectively, to encourage agencies to develop alternate sources of water because it releases demand on the imported water. These incentives will expire in FY 2023 for NCWRP. The City receives the SDCWA incentive for sales to customers other than Otay Water District at SBWRP. The incentive at SBWRP will expire in FY 2032. Otay receives these credits directly for its usage from MWD and SDCWA through its agreements with those agencies. Given the recent substantial increases in MWD water rates, the MWD rebate is projected to reduce with time.
 6. The 1998 Regional Wastewater Disposal Agreement between the City and the Participating Agencies of the Metropolitan Sewerage System (Metro System) stipulated that the revenues from the sale of recycled water from the NCWRP should first be used to pay the cost of the distribution system, then the tertiary treatment costs, and that revenue from sales from the SBWRP will stay with the Metro System. The agreement says revenues from the sales of recycled water would accrue to the Metro System; it is interpreted this to mean net revenues, i.e., revenues net of operating and capital expenses incurred by the Water Branch.
 7. As demand increases, NCWRP will need to expand demineralization capacity to ensure that product water total dissolved solids (TDS) is under 1,000 mg/l. The plant's current Electro Dialysis Reversal demineralization capacity is approximately 12 MGD depending on water and wastewater sources. TDS reduction at the SBWRP has not been necessary thus far. If this situation changes, all options for bringing the TDS levels back in line will be evaluated.

1.4. Assumptions/Recommendations

This section of the Executive Summary outlines the assumptions and the resulting recommendations to enhance the viability of the recycled water program as a system that recovers more of its ongoing costs.

1. The recycled water system should be considered a unitary system such that all the costs, operating and capital, of the system should be proportionately shared by irrigation, non-irrigation, and wholesale customers receiving recycled water from the NCWRP and SBWRP. This means that all users should share in all the costs of the recycled water system, provided that these users are within the Metropolitan Wastewater (Metro) service area. The rationale for the unitary recycled water system are:
 - a. The Metro System is a unitary system, and all wastewater users proportionately share in the costs of this system irrespective of their location, the collection system, or the proximity to the specific treatment plant into which they discharge.
 - b. The NCWRP and SBWRP plants were constructed to meet the Ocean Pollution Reduction Act (OPRA) requirements. The costs related to construction and operation of these plants are part of the unitary Metro System. The City received a federal construction grant for the NCWRP; and grant conditions require the City to meet certain reuse targets. Capital costs incurred for the recycled water distribution system to meet these reuse targets are therefore considered to be part of the integrated system that benefits all recycled water customers. All customers share in the costs and benefits of the system, which means that all users share in the costs of the recycled water system, provided that these users are within the Metro wastewater service area. Rates to customers outside of the wastewater service area, such as Olivenhain Municipal Water District (Olivenhain), could include an incremental fee since these outside users do not share in the costs of the wastewater system.
 - c. The true cost of producing recycled water includes the operating and capital costs of all the facilities – treatment and distribution. Cash expenses already incurred are excluded from the analysis. Ongoing debt service costs for the treatment plants and distribution system are included in the revenue requirements to determine the cost of producing recycled water.
 - d. The City has entered into agreements with the City of Poway, Olivenhain Municipal Water District, and Otay Water District (Otay). Poway has a contractual rate with the City for its recycled water. The agreements with the latter two agencies specify that the same rates charged to City customers will apply to these customers. The language of these agreements implies a unitary system, wherein all the costs of the recycled water system would be shared by all customers. Olivenhain pays a small premium for portions of their recycled water not sold to customers within the city limits of San Diego, because Olivenhain is not a party to the Metro Agreement. It should be noted that Otay receives a similar benefit because it discharges a relatively small quantity (average of less than 1 MGD) of wastewater in the Metro system while drawing on average more than twice that amount of recycled water (2.8 MGD) from the system.

2. The Pricing Model assumes that recycled water used at the treatment plants will not be billed as it is needed to produce the recycled water end product at these facilities.
3. Recycled water used at MBC will not be billed because it is part of the Metro wastewater system. Recycled water is used as process water for sludge treatment and irrigation purposes at MBC. Thus, recycled water usage at MBC, NCWRP and SBWRP is not included as part of the total recycled water sales to determine the unit cost.
4. Bond financing will continue to be made through the Water Branch fund.
5. The costs related to Indirect Potable Reuse (IPR) are not included in the analysis.
6. Additional assumptions of technical nature are listed in Appendix A.
7. To ensure that the recycled water is marketable, we recommend that the commodity rate for recycled water be lower than the potable irrigation rate. Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The City's recycled water commodity rate is currently 20 percent of the June 2013 irrigation rate of \$4.014 per HCF. The true cost of service includes all capital and operational costs of the NCWRP, SBWRP, and the recycled water distribution system costs. The true cost of service rate exceeds the potable water rate and therefore we recommend a modified cost of service which considers only the capital costs of the demineralization facilities at the NCWRP, the tertiary treatment operating costs at NCWRP and SBWRP, and distribution system capital and operating costs. Implicit in this modified cost analysis is the understanding that Metro wastewater customers will bear the capital and operating costs related to the primary and secondary facilities as well as the tertiary capital costs at NCWRP and SBWRP. We recommend a recycled water rate of \$2.241 per HCF for the next four years based on the modified cost of service rate for recycled water. This rate is approximately 56 percent of the June 2013 irrigation rate. It should be noted that the recommended rate is not the true cost of service rate. The recommended rate is designed to provide a good balance between incentives for recycled water use and cost of service. As costs and sales can be projected with reasonable certainty for only a few years, the City should consider reviewing the recycled water rate periodically with available updated information.
8. The recycled water base fees or meter charges have not been revised for several years. Base fees include costs of customer service, billing, meter maintenance and a portion of the costs to provide capacity. The cost allocation process provides a reasonable basis to calculate the base fees and the calculated base fees are reasonably close to those for potable service. The differences in the larger meters result from use of the latest capacities of the larger meters shown in the AWWA M22 Manual Sizing Water Service Lines and Meters. The proposed monthly meter charges and rates are shown in Table ES-1.

**Table ES -1
Recommended Recycled Water Rates**

Monthly Base Fee <u>Meter Size</u>	Existing	Proposed 1/1/2014	Proposed 1/1/2015	Proposed 1/1/2016	Proposed 1/1/2017
5/8"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
3/4"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
1"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
1-1/2"	\$ 43.27	\$ 42.91	\$ 43.55	\$ 44.80	\$ 46.59
2"	\$ 65.96	\$ 65.98	\$ 66.96	\$ 68.89	\$ 71.65
3"	\$ 246.93	\$ 139.03	\$ 141.10	\$ 145.16	\$ 150.97
4"	\$ 411.53	\$ 246.67	\$ 250.34	\$ 257.55	\$ 267.85
6"	\$ 925.93	\$ 542.71	\$ 550.79	\$ 566.64	\$ 589.31
8"	\$ 1,234.59	\$ 927.17	\$ 940.97	\$ 968.05	\$ 1,006.77
10"	\$ 1,646.12	\$ 1,465.41	\$ 1,487.22	\$ 1,530.03	\$ 1,591.23
12"	\$ 2,263.42	\$ 1,926.76	\$ 1,955.43	\$ 2,011.71	\$ 2,092.18
16"	\$ 3,703.75	\$ 3,849.04	\$ 3,906.32	\$ 4,018.76	\$ 4,179.51
Uniform Commodity Rate (\$/hcf)	\$ 0.80	\$ 2.241	\$ 2.241	\$ 2.241	\$ 2.241

9. Consistent with OPRA and NPDES permit requirements, the Wastewater Branch has borne the cost of constructing the capital facilities required to produce recycled water, including the demineralization facilities at NCWRP. We recommend that the Wastewater Branch continue to be responsible for the replacement and refurbishment (R&R) of the NCWRP and SBWRP facilities.
10. Since the recycled water system will experience some growth over the next several years the estimates of O&M and capital costs may need to be revised. We recommend that the City review these figures, as conditions change in the future, to ensure that they are consistent with the actual costs.
11. With the potential of implementing an indirect potable reuse (IPR) water purification project, the City should analyze, when conditions change in the future, the economic effectiveness of investments in the distribution system to increase sales.
12. We recommend that the City set capacity fees for **new** (not existing potable users converted to recycled water) retail recycled water connections (excluding existing potable water customers) equal to the potable rate, currently \$3,047 per equivalent dwelling unit (EDU). This is consistent with the 2007 water rate case recommendations which included the potable and recycled system costs as part of an integrated water system to determine the capacity fees. The revenues will accrue to the recycled water system and will be used to offset capital costs for the recycled system.

2.0 INTRODUCTION

The City of San Diego (City) engaged Raftelis Financial Consultants (RFC) to conduct a recycled water cost of service rate study to identify the cost of providing recycled water service and develop a financial plan considering alternatives for recovering the costs incurred in providing recycled water service.

This study reviews several pricing objectives and policy issues related to the cost of providing recycled water service, cost allocations between the Public Utilities Department's Water and Wastewater Branches (Water Branch and Wastewater Branch), which are both impacted by the production, use and sale of recycled water, and the impacts on customers.

2.1. Background

The City of San Diego (City) is the eighth largest city in the United States and the second largest city in the State of California. The City's population is approximately 1.3 million. The City is located on the southernmost coast of California and covers a geographical area of about 330 square miles.

The Recycled Water Distribution System is currently managed and operated by the Water Branch. However, the production and some of the costs are shared with the Wastewater Branch. It is, therefore, important to gain some background and perspective on both the Water and the Wastewater Systems.

2.2. Water System History

The water system is owned and operated by the City and managed by the Water Branch. The water system consists of three treatment plants, nine surface raw water storage reservoirs, and about 3,300 miles of transmission and distribution lines. The water system services the City and some surrounding areas through over 270,000 retail service connections. Approximately 91 percent of the connections serve residential customers and the balance serve commercial, industrial, and other customers. In addition to retail customers, the City sells potable or raw water on a wholesale basis to the California-American Water Company, and the Santa Fe and San Dieguito Irrigation Districts.

2.2.1. *Water Supply*

The water system currently receives its water supply from two sources: local runoff and water imported by the San Diego County Water Authority (SDCWA). An average of 6 to 10 percent of the water supply comes from local runoff. This source is seasonal and variable in nature. The balance of the water system water supply is purchased from SDCWA. In turn, SDCWA currently imports approximately 90 percent of its water supply from Metropolitan Water District of Southern California (MWD).

The City has conducted several major studies addressing its water supply needs. The City's projected water demands and recommended future supplies are developed through

the Strategic Plan for Water Supply which was adopted by the City Council in August 1997. In 2000, the Strategic Plan estimated water demand through 2015 and identified infrastructure requirements necessary to ensure that facilities were in place to store, treat, and distribute water in an effective and efficient manner. Also, in 2000, the City initiated an update of the Strategic Plan, known as the Long-Range Water Resources Plan (LRWRP) adopted by Council in December 2002. The LRWRP extended water demand projections through 2030 and developed a decision-making framework for evaluating water supply options. The LRWRP identified several options, including water reclamation to meet the mid- to long-term demands.

The City operates the water system as a self supporting enterprise. Revenue and costs are accounted for separately under the water fund. Recycled water distribution and retail costs, as well as recycled revenues, are accounted for as part of the water enterprise fund.

2.3. Wastewater System

The City’s Wastewater Branch operates a regional wastewater system that provides wastewater collection, conveyance and treatment services to the City and a number of Participating Agencies (PAs) outside the City. The PAs are:

1. City of Coronado	5. City of La Mesa	9. City of Poway
2. City of Del Mar	6. Lemon Grove	10. City of Chula Vista
3. City of El Cajon	7. City of National City	11. Otay Water District
4. City of Imperial Beach	8. Padre Dam Municipal Water District	12. County of San Diego (Lakeside/Alpine, Wintergardens, Spring Valley, East Otay)

The regional wastewater system infrastructure currently includes three wastewater treatment plants, Point Loma Wastewater Treatment Plant (PLWTP), North City Water Reclamation Plant (NCWRP) and South Bay Water Reclamation Plant (SBWRP); two ocean outfalls, Point Loma Ocean Outfall and South Bay Ocean Outfall; a biosolids processing center, the Metropolitan Wastewater’s Metro Biosolids Center (MBC); three major pump stations; and several miles of force mains and gravity flow interceptors. The City operates the regional wastewater system under two National Pollutant Discharge Elimination System (NPDES) permits that stipulate standards of discharge for the PLWTP and the SBWRP. To comply with the discharge standards and to meet other requirements of the federal Clean Water Act, the City had to undertake various capital project initiatives including the enhancement of existing wastewater treatment facilities and the construction of North City and South Bay water reclamation plants. The City operates the wastewater system as a self-supporting enterprise and costs are accounted for separately under the wastewater enterprise fund.

Some elements of the recycled water program are required elements in the wastewater program (see section 2.4.2). It is important to understand these elements that are required

for the wastewater system so that the cost sharing between the recycled and wastewater system is clearly defined.

2.3.1. Legal and Regulatory Background

Since 1963, the City has treated its wastewater at the PLWTP, which provides advanced primary treatment before disposal in an ocean outfall. In 1972, the federal Clean Water Act (CWA) was adopted which requires that wastewater plants provide a minimum of secondary treatment. Section 301(h) of the CWA allowed facilities that discharge to certain marine waters to apply for a waiver from secondary treatment standards by 1982. The City originally applied for the waiver, but then withdrew it. In 1987, the U.S. Environmental Protection Agency (EPA) and environmental groups sued the City for not meeting the provisions of the CWA. The Ocean Pollution Reduction Act (OPRA) was passed by the U.S. Congress in 1994 to allow San Diego to reapply for the Section 301(h) waiver.

As part of the requirement of OPRA, the City committed to implementing a water reclamation program that would create a system capacity to treat 45 million gallons per day (MGD) by 2010. The City has fulfilled the treatment capacity requirement with the completion of the 30 MGD NCWRP in 1997 and the 15 MGD SBWRP in 2002. A 1995 federal court order further required the City to construct an optimized recycled water distribution system in conjunction with building the NCWRP. The majority of the distribution facilities that comprise the optimized system were installed between 1995 and 1998 to enable delivery of recycled water upon completion of the NCWRP.

The EPA provided a grant that helped fund the construction of the NCWRP. Conditions of the grant award are quoted as follows:

“Upon certification of the NCWRP, flows into the plant will constitute a minimum of 75 percent of the plant’s design capacity (i.e. at least 22.5 MGD). Of these flows the City will beneficially reuse at least 10 percent upon certification and shall attempt to meet the following goals:

a. Beneficial reuse of 25 percent of the flows treated at the NCWRP by December 31, 2003.

b. Beneficial reuse of 50 percent of the flows treated at the NCWRP by December 31, 2010. “

In FY 2012, NCWRP treated 22.9 MGD (76 percent of capacity) of wastewater to secondary standards. The requirement to reuse 10 percent of the treated flows was achieved in 1998, when about 2.4 MGD of recycled water was distributed. In FY 2013, through February, about 7.4 MGD of recycled water was beneficially reused at the NCWRP, or about 32 percent of treated flows. There is no penalty for failing to meet the EPA goals as long as the City is making efforts to maximize recycled water reuse.

It is important to understand the implications of this section. Because of the requirement to construct 45 MGD of water reclamation capacity, the conditions of the NCWRP grants, and the unitary nature of the Metropolitan Wastewater (Metro) System, it is necessary to treat the recycled water system as a unitary system as well. This allows the

costs and benefits of the whole system to be shared by all the users of recycled water. The City has been bearing the costs of system improvements for several years. One of the objectives of the study is to make the recycled water system more self sufficient and this can be achieved through a pricing study that appropriately allocates the costs of the recycled water system to all users fairly under a unitary approach.

2.4. Recycled Water Program History

The City first produced recycled water in 1981. The 25,000-gallon per day (GPD) Aqua I pilot aquaculture plant began operation in Mission Valley. The plant's production water was used to irrigate a sod farm adjacent to Jack Murphy Stadium (now Qualcomm Stadium). In 1984, the Aqua II Water Reclamation Facility, a second, larger pilot research installation, began treating 180,000 GPD of wastewater. This water was sold to Caltrans for use in irrigating freeway landscaping beginning in 1987. In 1991, the Aqua III Water Reclamation Facility and Aqua 2000 Research Center were relocated in the San Pasqual Valley, north of Rancho Bernardo, where the City continued to use aquaculture treatment to reclaim wastewater. This facility had the capacity to treat 1 MGD for agricultural use and irrigation until 2001 when the facility was decommissioned due to high operational costs.

2.4.1. Current Recycled Water System

The current recycled water system consists of two plants, NCWRP and SBWRP, both owned and operated by the Wastewater Branch. However, the distribution system that distributes recycled water to customers is owned and operated by the Water Branch. Due to this separation of ownership, there exist several issues related to the cost sharing between the Wastewater Branch and the Water Branch, which are further explained in section 2.4.2.

The City has been delivering recycled water since the NCWRP was completed in September 1997. In FY 2013, through February, an average of 7.4 MGD of recycled water was beneficially reused at NCWRP, including in-plant usage. The NCWRP provides recycled water to retail customers in the northern area of the City, to MBC, and wholesale service to the City of Poway and Olivenhain Municipal Water District (Olivenhain) for irrigation, industrial, and other non-potable uses. The total capacity at the NCWRP is 30 MGD and the existing capacity of the demineralization process, called Electro Dialysis Reversal, is 12 MGD for a sustained time period. The demineralization process is used to reduce the total dissolved solids (TDS) in the recycled water when it exceeds 1,000 milligrams per liter (mg/l). The City has committed to recycled water customers that the TDS of recycled water will not exceed 1,000 mg/l.

To encourage use of recycled water so that EPA goals could be reasonably achieved, the Water Branch funded approximately \$15.1 million in irrigation system retrofits for existing potable customers to convert to recycled water use. Retrofits are required to modify plumbing systems that are set up to use potable water so that there is no intertie between potable and recycled water. The funding of private property retrofits was discontinued in 2001. The Water Branch also invested approximately \$69.8 million in the optimized recycled water distribution system, of which about \$14.3 million was grant

funded. An additional \$52.9 million (of which \$11.3 million was grant funded) has been invested to expand the recycled water system to its current status.

In addition to the 30 MGD of recycled water design capacity provided at the NCWRP, the City has completed the SBWRP with a treatment capacity of 15 MGD. Sales of recycled water from SBWRP started in FY 2007. In FY 2013, through February recycled water usage from the SBWRP averaged approximately 4 MGD. The plant provides wholesale service to Otay, the International Boundary Water Commission (IBWC) and CalTrans in the South Bay area. Because TDS levels have not exceeded 1,000 mg/l at the SBWRP, there is no demineralization process on location at this time.

In FY 2013, the City has approximately 570 recycled water meters, including three wholesale recycled water meters in operation. Excluding use of the recycled water at the NCWRP and SBWRP, recycled water sales for FY 2012 were about 5,730 AF from NCWRP and 3,750 AF from SBWRP. Recycled water distribution system extensions are projected to modestly increase sales in the coming years. Projections of sales and a more detailed discussion of recycled system growth assumptions are provided in Section 6.2 – System Growth Projections.

On July 1, 2001, coinciding with the conclusion of the retrofit program, the City Council reduced the commodity rate for recycled water from \$1.34 to \$0.80 per hundred cubic feet (HCF) to encourage more customer connections to the recycled water system. The rate has remained at that level except for a couple of months starting January 2002 when it was set at \$0.812 per HCF. The rate for recycled water is currently 20 percent of the City's June 2013 potable irrigation rate of \$4.014 per HCF. The monthly base charges for recycled water service have not changed since January 2002 when they were reduced slightly. The recycled water rate history is presented in Table 2-1 along with the June 2013 potable irrigation water rate for comparison purposes.

**Table 2-1
Recycled Water Rate History**

Meter Size	Recycled Water Rate History				Potable Water	
	Monthly Rate				Monthly Rate	
	Effective				Effective	
	1-Mar-00	1-Jul-01	20-Jan-02	28-Mar-02	1-Sep-10	1-Jun-13
5/8"	\$ 9.63	\$ 9.63	\$ 8.63	\$ 8.63	\$ 18.86	\$ 19.33
3/4"	\$ 9.63	\$ 9.63	\$ 8.63	\$ 8.63	\$ 18.86	\$ 19.33
1"	\$ 10.23	\$ 10.23	\$ 8.63	\$ 8.63	\$ 27.66	\$ 28.46
1-1/2"	\$ 46.27	\$ 46.27	\$ 43.27	\$ 43.27	\$ 47.79	\$ 49.34
2"	\$ 71.16	\$ 71.16	\$ 65.96	\$ 65.96	\$ 72.95	\$ 75.44
3"	\$ 256.53	\$ 256.53	\$ 246.93	\$ 246.93	\$ 132.04	\$ 136.74
4"	\$ 427.93	\$ 427.93	\$ 411.53	\$ 411.53	\$ 216.30	\$ 224.15
6"	\$ 655.93	\$ 655.93	\$ 925.93	\$ 925.93	\$ 425.08	\$ 440.73
8"	\$ 1,286.59	\$ 1,286.59	\$ 1,234.59	\$ 1,234.59	\$ 676.59	\$ 701.64
10"	\$ 1,724.12	\$ 1,724.12	\$ 1,646.12	\$ 1,646.12	\$ 970.89	\$ 1,006.94
12"	\$ 2,395.42	\$ 2,395.42	\$ 2,263.42	\$ 2,263.42	\$ 1,808.47	\$ 1,875.82
16"	\$ 3,989.75	\$ 3,989.75	\$ 3,703.75	\$ 3,703.75	\$ 3,150.36	\$ 3,267.86
Commodity Rate (per HCF)						
Non-Irrigation	\$ 1.34	\$ 0.80	\$ 0.81	\$ 0.80	\$ 3.547	\$ 3.757
Multi-Family	\$ 1.34	\$ 0.80	\$ 0.81	\$ 0.80	\$ 3.698	\$ 3.917
Cal-Trans	\$ 1.19	\$ 0.80	\$ 0.81	\$ 0.80		
Potable Water Irrigation Rate					\$ 3.790	\$ 4.014

2.4.2. Institutional

Recycled water spans both water and wastewater systems because it is produced by the Metro System and sold by the Water Branch for non-potable applications, e.g. irrigation, which offsets potable water demand. As a result, there are institutional issues related to cost sharing by the Water Branch and Metro System.

The Regional Wastewater Disposal Agreement (Agreement) date May 18, 1998, between the City and the Participating Agencies stipulated how the revenues from the sales of recycled water should be distributed. To quote Section V.B.2.a of the Agreement:

“(2) All compensation or receipts from the sale or other conveyance or transfer of any Metro System by-products, including, but not limited to gas, electrical energy, sludge products, and **Reclaimed Water** excepting any receipts allocated pursuant to subsection 2.a.(3) below.

(3) The distribution of revenue from the sale of recycled water from the North City Water Reclamation Plant including incentives for the sale of Recycled Water, shall be first used to pay for the cost of the Recycled Water Distribution System, the cost of the Operation and Maintenance of the Tertiary Component of

the North City Water Reclamation plant that can be allocation to the production of Recycled Water, and then to the Metro System.”

This agreement was drafted when only the “optimized system” was in place and this Distribution system was defined to include a list of eight projects identified in the Agreement. Subsequently the City’s Water Branch expanded the recycled water distribution network in the NCWRP area and constructed some distribution facilities in the SBWRP area as well. Since the recycled water system has grown to more than the “optimized system”, the Agreement is assumed to apply to the entire recycled water system.

Implicit in Distribution System costs is reimbursement of any operating costs related to the recycled water system incurred by the Water Branch as well as any outstanding capital costs, both ongoing and debt service costs, before Metro receives any revenues. In other words, Metro will receive net revenues from the sale of recycled water. The City has assumed this interpretation to determine the costs of providing recycled water service.

The Metro System benefits from recycled water use at the MBC, NCWRP and the SBWRP. Since this use at the plants is required to produce recycled water, this use is excluded from the sales of recycled water used to calculate rates.

Since the reclamation plants were built as a condition of the NPDES permit for the PLWTP (which helped to mitigate the estimated upgrade costs in the range of \$1.5 to \$3 billion at the time), the Metro System has borne all the capital costs associated with producing recycled water, including the operating costs of tertiary treatment at both the NCWRP and SBWRP. The capital and operating costs of demineralization at NCWRP are also borne by the Metro System because grant conditions required sale of recycled water and the City has committed to the recycled water customers that the TDS content will not exceed 1000 mg/l. Since all of these costs are required to produce recycled water, both the operating and capital costs would be considered the total cost of providing recycled water service. When all these costs are considered, the true cost of providing recycled water would exceed the cost of potable water. However, it is imperative to understand this true cost of producing and serving recycled water.

3.0 PRICING OBJECTIVES AND POLICY CONSIDERATIONS

In any pricing study, several factors have to be considered before the final implementation of rates. In this section, the pricing objectives that are important are reviewed along with policy considerations. Some pricing objectives will conflict with others and a good rate structure will provide a balance among these objectives so that the Utility's goals are met. In balancing the objectives, we seek to ensure a rational and reasonable basis for deciding amongst these objectives.

In some instances, it is necessary to make policy decisions based on the City's goals and objectives. Policy consideration plays an important part in revenue requirements and rate design. This section addresses both pricing objectives and policy considerations.

3.1.Pricing Objectives

The first step in developing a recycled water pricing structure is to identify and prioritize pricing objectives. The Pricing Study has six major pricing objectives. These pricing objectives may conflict with each other; for example, marketability requires a lower rate to sell as much recycled water as possible. However, that would conflict with financial sufficiency, which aims to set rates at a level which recovers the costs of service. As a result, the pricing objectives have to be balanced to meet the City's requirements.

3.1.1. *Financial Sufficiency*

A major objective of the Pricing Study is to put the recycled water program on a more self-sufficient financial footing. The Study must demonstrate that recycled water will be able to supply its own cash needs through revenue collected from its own fees and charges. The City's Water Branch has been making investments in the recycled water distribution system and covering ongoing operating deficits. The City seeks to recover ongoing future costs through the recycled water rates. Moreover, in FY 2023, the MWD and SDCWA credits for NCWRP usage will expire. These additional costs will cause a significant increase in the costs of providing recycled water service. Thus, the City will need to decide how to handle these step changes in revenue requirements in the future. This study only focuses on the recycled water rates in the next four years, starting in FY 2014.

3.1.2. *Fairness and Equitability*

This pricing objective dictates that users should pay in proportion to the cost of providing service. All users share in those costs in proportion to the demands they place on the system. There are two important issues that need to be addressed here – unitary system and peaking demands.

Unitary System: As discussed in Section 1.4, for a variety of reasons, including the following, the recycled water system is considered to be a unitary system:

- the unitary nature of the Metro wastewater system

- the OPRA requirements, and
- the conditions of the grants used to fund the tertiary treatment facilities

In a unitary system, all costs are shared by all customers irrespective of their location, or which specific tertiary treatment or recycled water system facility is used. The agreements with the wholesalers also reinforce the unitary nature of the recycled water system wherein the wholesalers agreed that “the commodity rate for recycled water will escalate at the same rate adopted by the San Diego City Council for all recycled water customers”².

Peaking Demands: It is a well established practice in the water industry that a fair and equitable method of allocating costs to customer is based on their peaking demands. The M1 Manual – Principles of Water Rates and Charges published by the American Water Works Association (AWWA) states that “cost allocation procedures should recognize the particular service requirements of the customers for total volume of water, peak rates of use, and other factors.”³

Peaking demands have been determined and considered in an effort to differentiate the costs to irrigation, non-irrigation, and wholesale customers. However, in this study, the same rate for all customer classes is recommended due to several factors, which are explained in details in Section 3.2.5, including the relatively small customer base and the difficulty in separating recycled water usage into distinct categories as some customers who use recycled water for industrial purposes, i.e. cooling towers, also irrigate their landscapes from the same connection.

3.1.3. *Simplicity*

Since most customers of the recycled water system are irrigation customers with similar characteristics, the rate structure can be simplified by calculating a uniform rate for all customers. A simple rate structure can be readily communicated to users and implemented easily.

The design of the rate structure requires a balancing act amongst different and sometimes contradictory pricing objectives. Although fairness and equity require differentiation of rates to different customer classes based on their peaking demands, but because of the unique characteristics of the recycled water system, we recommend that the City implements the same rate structure for all its customers.

3.1.4. *Legality and Adherence to Interagency Agreements*

The production, distribution, and sale of recycled water were, in part, dictated by several inter-governmental agreements. Production and sales goals were established in grant

² Section 2.1 from both of the separate agreements between the City and Otay Water District and the Olivenhain Municipal Water District for the purchase of recycled water from the South Bay and North City Water Reclamation Plants respectively

³ AWWA M-1 Manual, p. 49

agreements with the EPA. The City has negotiated wholesale agreements that cover rates and capacity for recycled water services. Agreements are in place with MWD and SDCWA for incentive credits for recycled water usage to expand local supplies and relieve demand from the strained potable water supply. All of these agreements have been incorporated into the development of the recycled water pricing structure.

Proposition 218 passed in 1996, and clarified by the California Supreme Court in 2006 as applicable to consumption-based fees for water and wastewater service, requires the following:

- Revenues derived from fees may not exceed the funds required to provide the service;
- The amount of the fee may not exceed the proportional cost of the service attributable to the parcel upon which the fee is imposed; and
- The fee may not be imposed unless the service is actually used by, or immediately available to, the owner of the property.

Article X, Section 2 of the State Constitution requires water resources to be put to the maximum beneficial use. This article states the following:

“It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare. ...”

Water Code Sections 370 – 374 (AB 2882) provides that the cost of production and distribution of recycled water is an “incremental cost” of water service that can be passed on to potable water customers. This is a legal justification for charging potable water users a portion of the cost of producing and distributing recycled water.

Water Code Section 13550(a)(2) provides that the State may approve the mandatory use of recycled water (after notice and a public hearing) if the cost of the recycled water “is comparable to, or less than, the cost of supplying potable domestic water,” among other requirements. It is also the City’s policy (SDMC 64.0802) that reclaimed water be used within the City “wherever feasible.” These are two legal justifications for not charging reclaimed water customers the full actual cost of producing and distributing reclaimed water, and instead establishing a marketable rate.

Considering these statutes together allows some flexibility in designing a system of rates that encourages the use of recycled water so that it is beneficially used especially in view of the current water supply situation in the State as long as the rates are reasonable. The market based approach is widely practiced in California and across the US. The City implemented the market based approach to incentivize the voluntary use of recycled water so that it could meet the grant conditions. It is not unreasonable to implement such an approach in the City so that potable water rates support the recycled water system in

the short run and recover costs in the long run. However, this study examines the applicability of the cost of service approach as well.

The City has signed agreements with three wholesale agencies: Otay Water District, Olivenhain Municipal Water District, and the City of Poway. Otay is under an annual take-or-pay contract with the City and agreed to pay the City Council adopted recycled water rate for the length of the agreement, which lasts until 2026. Additionally, Otay, because of its successful application process, receives both MWD credits (up to \$250/AF) and SDCWA credits (up to \$200/AF) directly for its recycled water purchases, effectively and significantly reducing its net recycled water costs.

The 2004 agreement with Olivenhain on its first connection stipulated that it will pay the City Council adopted recycled water rate plus an additional \$25 per AF, except for recycled water sales to customers within the city limits of San Diego, because it is not a party to the Metro Agreement. Olivenhain is also under an annual take-or-pay contract with the City. In December 2009, Olivenhain added a second connection to the system, but opted to have that connection be considered a retail connection and paid full capacity fees, so it does not pay the \$25 per AF premium on this connection.

In a 1998 agreement, Poway opted not to pay a capacity fee, but agreed to pay a rate starting at \$450 per AF for its recycled water. The rate is inflated annually based on the San Diego Region Consumer Price Index for the previous 12 month period. Poway's FY 2013 recycled water rate is \$695.84 per AF or \$1.597 per HCF. Since Poway is under a contractual rate, the revenue received from the sale of recycled water to Poway is considered a revenue offset in the calculation of the cost of service rate for all other customers.

3.1.5. Marketability

The goal of a financially sufficient enterprise fund is to recover annual cash needs through revenue generated by rates and charges. Current sales are relatively small and keeping rates relatively low compared to potable water would incentivize more customers to switch to recycled water. Recycled water has to compete with raw and potable water and its use is currently limited to irrigation and commercial uses. Recycled water cannot command premium pricing and expect to grow or even maintain its customer base even though recycled water has a nutrient value for irrigation and offers advantages of greater reliability than potable water during times of drought when non-essential usage such as irrigation is subject to mandatory conservation. Instead, recycled water needs to be at a lower price. In addition, customers typically have to bear costs related to retrofitting their plumbing for recycled water. Recycled water rates have to be lower than potable water rates for end users to recover these costs. Many agencies set recycled water rates between 75 and 100 percent of the potable water rate. The City's current recycled water rate is approximately 20 percent of the June 2013 potable irrigation rate. Since the City's recycled water rate is significantly lower than the potable rate, there is potential to raise it to recoup more of the costs of service and still maintain an incentive to recycled water users.

3.1.6. Customer Impact

Finally, recycled water pricing must be cognizant of the impacts higher rates would have on customer bills. The City is aware that recycled water rates would have to increase to meet the objective of financial sufficiency; however, the rates must be carefully structured to continue to incentivize new customers.

3.2. Policy Considerations

The recycled water system is a unique system with many parameters that affect the financial picture and rates. As such, it is necessary to obtain guidance on many of these parameters so that the number of alternatives to be evaluated is manageable and decision makers can choose from a finite number of alternatives.

There are several policy considerations that were reviewed to arrive at the final alternatives presented. These are discussed below.

3.2.1. Past City Capital Investment in the Recycled Water Distribution System

The City’s Water Branch has made major investments in the recycled water distribution system; some of these expenses were grant funded and a portion was debt funded. The details of these expenditures are shown in the following table. The Water Branch has invested approximately \$50.2 million in the recycled water system to incentivize users to join the system so that it could meet the grant conditions. The City’s potable water customers have borne these costs to the benefit of all users in the recycled water system. However, for this study only costs going forward are used to calculate the costs of providing service.

EXPENDITURES	TOTALS
Optimized System	\$69.8 million
Retrofits	\$15.1 million
All other reclaimed	\$52.9 million
TOTAL EXPENDITURES	\$137.8 million

LESS GRANTS	
Optimized System	\$14.3 million
Non Optimized System	\$11.3 million
TOTAL GRANTS	\$25.6 million
TOTAL EXPENDITURES NET OF GRANTS	\$112.2 million

Optimized System Amount Financed via debt	\$37.0 million
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Additional Debt Financing (Expansion)	\$25.0 million
NET CITY INVESTMENT	\$50.2 million

3.2.2. Past Operating Deficits of the Recycled Water System

In an effort to meet the grant conditions requiring the City to sell 25 percent of the water produced at the NCWRP by 2003 and 50 percent by 2010, the City decreased its recycled water rates in FY 2002 and has not adjusted these rates since then. As a result, if considered as a standalone enterprise, the City has operated the recycled water system at a loss since inception. However, since the recycled water distribution system is part and parcel of the overall potable water system, these costs have been included with the financial accounting of the water enterprise fund and the Water Branch has borne those costs. There were no net revenues for Metro since the recycled water rates were not recovering costs. Past deficits are not considered or recovered in the proposed rates.

3.2.3. Capacity Fees from New City Customers

Most of the users joining the recycled water system are existing potable water customers that are being retrofitted to use recycled water. These customers have already paid capacity fees to the potable water system. As a matter of policy, capacity fees from future new customers (as opposed to retrofits) that connect to the recycled water system are credited to the recycled water system under the pricing structures proposed. This follows from the calculation of capacity fees which were based on the costs of both the potable and recycled water systems as part of an integrated system to determine the capacity fees. In our analysis, we have assumed that 15 percent of projected future recycled water connections will be new and 85 percent will be retrofits.

3.2.4. Cost Sharing with Wastewater Branch/Metro System

As discussed earlier in Section 2.4.2, the wastewater agreement with the PAs states that revenues from the sale of recycled water accrue to the Metro System. As discussed in the Section 2.4.2, the net revenues would accrue to Metro; that being the case, the costs of tertiary treatment are included in the rate calculations. The Metro System will recover revenues after the Water Branch recovers its ongoing operating and capital costs at SBWRP and operating, capital, and debt service expenses at NCWRP.

3.2.5. Rates by Customer Class

The primary differentiator of rates amongst different customer classes is based on the demand that they put on the system. This demand is expressed in terms of the maximum day and maximum hour factors⁴. These are the maximum demands expressed as a multiple of the average demands of the customer class. Larger customers generally have

⁴ Maximum day represents the maximum water demand in any given day. Maximum hour represents the maximum water demand in any given hour during the maximum day. Maximum day and maximum hour factors are expressed as multiples of average day demand.

lower peaking factors than smaller customers. In our case, we would expect to have peaking factors that are fairly close for the two customer classes in this study – retail and wholesale. Because we did not have the maximum day or maximum hour factors we used the maximum month as a proxy for the maximum day factor. The peaking factors, shown in the following table, were determined from the average monthly usage in FY 2013 for the two customer classes. Generally, larger customers tend to have lower peaking factors; however, surprisingly, wholesale customers (Otay and Olivenhain) have the higher peaking factors according to water usage records. Since Poway is billed quarterly, its monthly usage data was not available. Moreover, its rates are set by agreement; thus, Poway’s demand is not included in the analysis.

Customer Class	Peaking Factor
Retail	1.49
Wholesale	1.91

The distribution system including pumping stations, reservoirs, pipelines are designed to handle peak usage. Therefore, costs related to the distribution system, both capital and operating are allocated on the basis of peaking. In the wholesale class, Poway and to some extent Olivenhain, use the City’s distribution system. Otay, on the other hand, uses little of the distribution system. To develop rates by customer class based on peaking factors that may or may not apply to a specific class seems to be problematic. Also, some retail accounts have mixed usage that includes irrigation and cooling towers, which tend to have different usage patterns. Because the customer base is small, especially in the wholesale class, and the accuracy and reliability of the peaking factors is uncertain, we recommend that the peaking factors not be considered at this time, and the City use the same rates for all customer classes. More information on peaking factors is included in Appendix C.

3.2.6. Rates Tied to City’s Potable Irrigation Rate

Generally, when the full costs of service are considered, recycled water rates are higher than potable water rates. In that case, to promote use of recycled water, most agencies set their recycled water rates as a percentage of potable water rates, typically in the range of 75 to 100 percent of the potable rates. As stated previously, the current recycled water rate is only 20 percent of the potable irrigation rates. In order for recycled water to be marketable, we recognize that the recycled water rate has to be lower than the potable water rate. Our calculated modified cost of service rate for recycled water is \$2.241 per hcf which is about 56 percent of the June 2013 potable irrigation rate. This rate will allow the Metro System and its customers who are currently paying the treatment costs to recover the tertiary capital and treatment costs and the Water Branch to recover the operation costs of the distribution system while still encouraging recycled water use. For a variety of reasons, potable water rates have been increasing significantly over the last few years. Tying recycled water rates to potable water would cause recycled water rates to increase rapidly as well. The modified cost of service approach provides a reasonable method to calculate recycled water rates. Thus, we are not recommending that the recycled water rate be tied to the City’s potable irrigation rate.

4.0 DEVELOPMENT OF REVENUE REQUIREMENTS

Every water utility must receive sufficient total revenue to ensure proper operation and maintenance (O&M), development and perpetuation of the system, and preservation of the utility's financial integrity⁵ to provide adequate water service to its customers.

Revenue requirements may be established either by the utility approach or the cash-needs approach. The utility approach to determine revenue requirements is followed by most investor owned utilities and government utilities that are regulated by a state public utilities commission. The utility approach allows the utility to recover operating requirements, depreciation, and a return on capital as determined by generally accepted accounting principles. In the cash-needs approach, followed by most unregulated governmental utilities, user charges are structured to recover specific operations and capital cash requirements. The Pricing Study utilizes the cash-needs approach for development of revenue requirements. Therefore, revenue requirements for the recycled water program may be defined as the gross cash needs of the recycled water system for operations and capital expenditures. It should be noted that while the Pricing Study follows a more formal cost of service approach, the recycled water system will continue to be part of the water utility in order to save on financing costs as the recycled water program currently has insufficient revenue to bond finance on its own.

4.1. Operating Costs

The O&M expense component is usually developed based on actual expenditures and adjusted to reflect anticipated changes in expenditures during the projection period. Adjustments to historical O&M expenses are determined by incorporating known and measurable changes to recorded expenses, and by using well-considered estimates of future expenses.

O&M expenses include salaries and wages, fringe benefits, energy, rent, chemicals, materials, small equipment, other supplies and services, and general overhead. For a government-owned utility, other elements of O&M expenses might also include the costs of support services rendered by the municipality, such as the use of computer facilities, assistance in billing and customer service, or office rental. The Study has grouped operating expenses into five major categories:

- Treatment costs
- Demineralization costs
- Recycled water program costs
- Recycled water meter services costs
- Recycled water customer service and billing costs

⁵ AWWA M-1 Manual, p.3

Operating costs are itemized in the Pricing Model in Appendix B, Table 2.

4.1.1. Treatment Costs

In order to produce recycled water, wastewater entering the treatment plant has to go through primary, secondary and tertiary treatment processes. Primary treatment removes most large particles and solids from the wastewater using a bar screen and a sedimentation tank to remove the oils and grease that would float to the top and the sludge that would settle on the bottom. Secondary treatment removes dissolved and suspended biological matter that remained in the water after primary treatment. Tertiary treatment, the final step in Title 22 recycled water treatment, removes very small particles including bacteria and viruses, and certain toxins that are not affected by conventional treatment. All costs of treatment are included in the cost of service analysis to determine the true cost of providing recycled water.

In the modified cost of service approach, only the costs of tertiary treatment (including demineralization) are included in the cost of providing recycled water.

4.1.2. Demineralization Costs

Electro Dialysis Reversal is included as part of the treatment at NCWRP to ensure that TDS does not exceed 1,000 mg/l. Lowering TDS is considered an additional treatment step beyond Title 22 requirements for tertiary treatment. However, this demineralization step does not meet potable water standards. There has not been a problem with TDS at the SBWRP and therefore it does not have demineralization facilities. In the future, the City may seek a capital solution, employ a demineralization process, or some other process solution for TDS control at the SBWRP.

4.1.3. Recycled Water Program Costs

The Recycled Water Program is charged with managing and expanding the use of recycled water in order to maximize local water resources while reducing the City's dependence on imported water. This also benefits the Metro System, because of the reduction of wastewater flows to the ocean outfall. The Program serves four major functions: customer development, plan and engineering review of proposed on-site recycled water systems, regulatory inspections and testing at customer sites to ensure public health is maintained, and recycled water pipeline project development. Also included in the program costs are the marketing endeavors undertaken to reach prospective clients.

4.1.4. Recycled Water Meter Services Costs

These costs include operation and maintenance of the recycled water system. The meter services group is also responsible for removing meters, responding to emergency main break or leaks for the entire recycled water system, assisting in shutting down and re-energizing the recycled water system, assisting in operational acceptance of all recycled water work done by contractors, and providing recommendations and assistance for any special connections to any customer sites as may be required. Additionally, staff handles

installation of recycled water services and recycled water meters ranging from 1-inch to 12-inch, testing of backflow devices, and periodic maintenance of associated appurtenances, pump stations, pressure reducing stations and tanks or reservoirs.

4.1.5. Recycled Water Customer Service and Billing Costs

The costs related to customer support and billing services are shown separately. All customers share in these costs equally as they benefit from these services equally.

4.2. Capital Costs

Under the cash-needs approach, it is important to identify the cash that is needed from user charges to support the Capital Improvement Program (CIP) and related capital expenditures. Capital expenses are different from O&M expenses in that they relate to tangible assets that will be utilized over an extended useful life. For the purposes of this Study, cash financed capital costs related to prior capital investments in the recycled water system are considered sunk costs. However, ongoing debt service costs for treatment and distribution facilities are included along with other CIP costs.

Capital expenditures include design, and construction of pumps, pipelines, and storage. Expenditures for engineering and financing the capital program may also be included.

Capital expenditures and capital funding sources are itemized in the Pricing Model found in Appendix B, Tables 3 and 4.

4.2.1. Treatment Plant Costs

The advanced primary, secondary, and tertiary treatment processes are all required to produce recycled water. Therefore, the capital costs of the NCWRP and SBWRP are considered in determining the cost of recycled water under the cost of service approach. The Wastewater Branch documentation shows that capital spending on NCWRP and SBWRP treatment facilities, net of grant funding, was approximately \$207 million and \$342 million, respectively. The debt service costs associated with these plants are included in the cost of service analysis, as shown in the next section.

The NCWRP and SBWRP were constructed to avoid secondary treatment at Point Loma, which saved wastewater customers the estimated upgrade costs in the range of \$1.5 to \$3 billion. Therefore it is reasonable to expect wastewater customers to bear the capital costs associated with the treatment plants. The demineralization facilities at NCWRP were not needed for wastewater treatment but rather to meet recycled water quality standards. Therefore under the modified cost of service approach, demineralization capital costs are included in the cost of producing recycled water.

4.2.2. Debt Service

Starting in FY 2014, the recycled water distribution system capital costs captured in the Pricing Model include debt service costs for assets already placed in service as well as prospective projects for service extensions in the CIP. Existing debt service payments for the recycled water system includes the ongoing payments on the original \$37 million debt

issue for the optimized system and the additional \$25 million for the expansion of the recycled water system. Debt service also includes ongoing payments on debt incurred to fund past capital costs, a total of \$549 million excluding grants, of both the NCWRP and SBWRP that the City had invested.

4.2.3. Capital Funding Sources

Funding for the capital plan may come from many sources. Funding may come directly from rates in the form of pay-as-you-go capital, some from development or capacity fees, some from fund balance contributions, and some from financing costs over time as debt service. A balanced capital portfolio usually contains funding from many sources. Water Branch guidelines suggest that 20 percent of the CIP be funded through rates as pay-as-you-go capital. The Pricing Model considers capacity fees as accruing to recycled water for new retail recycled water customers and this revenue is used as a capital funding source. Capacity charges from all new (excluding retrofitted) customers are computed at the rate of \$3,047 per EDU (0.56 AF per year) based on the 2007 water rate case. As mentioned earlier, the Water Branch and Metro funds were utilized for initial capitalization of the distribution and tertiary treatment, respectively. Finally, the pricing model assumes the remaining distribution system capital costs will be financed through new debt issues by the Water Fund at a rate of 5.5 percent over 30 years. Metro would be responsible for capital costs and funding of improvements to the treatment plants.

4.2.4. Retrofitting Existing Customers

Many potential customers of recycled water are existing potable water customers. Such customers already have the plumbing facilities, including irrigation systems, for potable water use on their properties. To convert these customers to recycled water use requires them to segregate current plumbing into potable water and recycled water systems. The primary reason for this is that there cannot be direct contact between recycled and potable water systems. As a result, existing potable water customers wanting to use recycled water are required to install backflow prevention devices so that there is no accidental mixing of potable and recycled water. In addition, all above ground irrigation heads, valve boxes and other appurtenances must be changed to reflect the use of recycled water. Depending on the configuration, more extensive modifications may be required to their plumbing systems to separate the potable and the recycled water pipelines. A change required to an existing customer's plumbing system is referred to as retrofitting.

When NCWRP came on line in 1998, the City initiated a Retrofit Program that provided approximately \$15.1 million to fund the costs of retrofitting existing customers so that they could be converted to recycled water. To meet the conditions of its EPA grant, the City needed to encourage and promote use of recycled water for the overall public good. The City discontinued executing new retrofit program agreements in 2001 and does not anticipate renewing this program.

4.3. Extraordinary Item

One item of interest that is not incorporated in the rate analysis is the nutrient value resulting from nitrates in recycled water used for irrigation purposes. In the eighties, the

California State Water Resources Control Board (SWRCB) determined that recycled water provides nutrient value that reduced the need for fertilizers. This value was determined to be \$40 per AF of recycled water. The SWRCB continued to use this value in determining the economics of recycled water projects. This benefit is not factored into the calculation of recycled water rates which are focused on the cost of providing recycled water and not benefits derived from its use.

5.0 DEVELOPMENT OF REVENUE OFFSETS

Revenue offsets refer to cash the utility derives from sources other than commodity rate revenue. This additional cash offsets revenue requirements and thus reduces the amount of revenue that must be recovered through rates. This study has categorized revenue offsets into:

- Credits
- Installation revenues

5.1.Credits

Generally speaking, credits are revenues collected outside the standard rate structure that are used to offset costs. Credits against capital costs are structured payments from new customers to buy into the capacity of the recycled water system. These are known as capacity fees. Credits against general costs are ongoing revenues that may be used to offset either capital or operating costs. These include MWD and SDCWA incentives.

5.1.1. Credits against Capital Costs

In the past wholesale customers paid capacity reservation fees to receive recycled water service. These fees compensate the Water Branch for capital investments made in constructing distribution system. By contract, the Water Branch has received a capacity fee from the IBWC, capacity reservation fees from Olivenhain, and Otay, and is expecting to receive capacity fees from new users connecting to the system. Existing potable water retail customers who connect to the recycled water system will not pay capacity fees if they are acquiring the same or lower capacity in the recycled water system than they had in the potable system. However, capacity fees from new customers are credited to the recycled water system within the pricing model. Since these fees are collected to compensate for investment in capital infrastructure, they are used as offsets to capital costs.

5.1.2. Credits against General Costs

Olivenhain and Poway are contract wholesale customers of the recycled water system. Since Poway pays a contractual rate for its recycled water usage, revenue collected from the sale of recycled water to Poway is not included in the calculation of recycled water rates. Since Olivenhain is not a member of the regional wastewater system, their wholesale price, by agreement, includes a premium of \$25 per AF on its first connection, except for recycled water sales to customers within the city of San Diego limits. The revenues from Poway and premium payment from Olivenhain are used in the Pricing Model as an offset to revenue requirements.

As mentioned earlier, the City has signed agreements with SDCWA and MWD that provide credits for recycled water sales because these sales relieve pressure on the potable water supply. As such, these agencies are willing to pay incentives for the

development of recycled water use by providing credits to the Water Branch. The maximum MWD and SDCWA credits are \$250 per AF and \$200 per AF, respectively. The agreements with SDCWA and MWD for credits on recycled water sales will expire either in 25 years after the starting date of operations, which is in 2023 for the NCWRP and in 2032 for the SBWRP, or until the cost of producing recycled water is lower than the cost of purchasing water from MWD. Since potable water rates are projected to increase significantly in the near term, the City should monitor the continued receipt of these credits. Given the potable water rates projections, the Pricing Model assumes that the City will receive the \$250 per AF MWD credits for the NCWRP through FY 2015. In subsequent years, the credit is estimated to reduce by approximately \$40 per AF per year. The City receives only SDCWA credits for SBWRP water to retail customers. Otay receives MWD and SDCWA credits directly for its recycled water usage. Thus, there are no credits for recycled water used at the NCWRP, SBWRP, and sales to Otay. The credits are used in the Pricing Model as an offset to revenue requirements.

5.1.3. Installation Revenues

The City charges nominal fees for meter installation and shut-off services whenever a new customer connects into the recycled water system. This revenue is used as a credit or offset against the meter services costs.

Table 5-1 shows the revenue requirements, less all applicable offsets, of the recycled water system.

**Table 5-1
Revenue Requirements**

Line No.		Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018
<u>Revenue Requirements</u>						
1	O&M Costs	\$ 2,966,987	\$ 3,010,580	\$ 3,106,970	\$ 3,231,248	\$ 3,360,498
2	Treatment Costs	\$ 15,679,533	\$ 15,836,328	\$ 15,994,691	\$ 16,634,479	\$ 17,299,858
3	Capital Costs					
4	Existing Debt Service	\$ 41,841,032	\$ 41,841,057	\$ 41,878,671	\$ 41,820,392	\$ 41,820,177
5	Proposed Debt Service	\$ 47,873	\$ 95,745	\$ 95,745	\$ 149,089	\$ 202,433
6	Pay-as-you-go Capital	\$ 36,145	\$ 39,423	\$ 91,551	\$ 96,189	\$ 101,011
7	Total Revenue Requirements	\$ 60,571,569	\$ 60,823,133	\$ 61,167,629	\$ 61,931,397	\$ 62,783,978
<u>Less: Revenue Offsets</u>						
8	Credits from MWD and CWA	\$ 2,758,715	\$ 2,786,300	\$ 2,564,380	\$ 2,337,740	\$ 2,106,313
9	Poway Contract Revenue	\$ 462,046	\$ 471,332	\$ 480,806	\$ 505,038	\$ 530,491
10	Fees from Olivenhain (1)	\$ 15,941	\$ 15,941	\$ 15,941	\$ 15,941	\$ 15,941
11	Interest Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
12	Meter Installation Revenue	\$ 100,000	\$ 105,000	\$ 25,000	\$ 25,000	\$ 25,000
13	Capacity Fee Revenue	\$ 73,128	\$ 73,128	\$ 24,376	\$ 24,376	\$ 24,376
14	Subtotal Revenue Offsets	\$ 3,409,829	\$ 3,451,702	\$ 3,110,503	\$ 2,908,095	\$ 2,702,121
15	Net Revenue Requirements	\$ 57,161,740	\$ 57,371,432	\$ 58,057,126	\$ 59,023,302	\$ 60,081,857

(1) Fees from Olivenhain are a premium of \$25/ac-ft for not being a member agency of Metropolitan Wastewater.

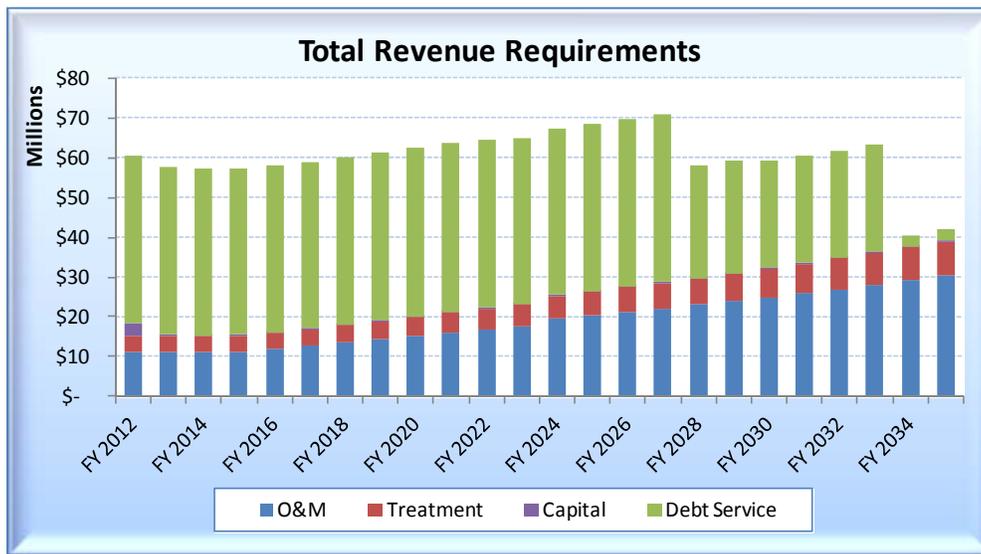
6.0 FINANCIAL PLAN

The financial plan presents projected cash flow of the recycled water program and the economic impact on customers as a result of achieving the goals and objectives identified in the planning process. The intent of the financial plan is to demonstrate how changes in demand, costs, and pricing structure impact the financial position of the utility over a specific time horizon.⁶ Taking a long-term approach to financial planning allows utilities to address problems before they become critical and smooth short-term fluctuations in rates. The keys to developing a solid financial plan are reliable projections of future costs and system growth.

6.1. Cost Projections

Figure 6-1 shows a projection of the total net cost or revenue requirements of producing recycled water from FY 2014 through 2035. Projections of operating and capital costs, the major components of the gross revenue requirements, are described below.

Figure 6-1



Note: Decreases in debt service costs in FY 2028 and FY 2034 reflect the time when the treatment plants debt are paid off

6.1.1. Operating Costs

As discussed in Section 4.1, operating costs for the recycled water system were categorized by function into several different components. Cost escalation factors were estimated for these components to project future costs.

⁶ Raftelis, G. *Water and Wastewater Finance and Pricing – A Comprehensive Guide*, Third Edition.

- Personnel costs for salaries are projected to remain constant until FY 2015, and will increase at four percent per year thereafter. Personnel costs for fringe benefits are projected to increase at four percent per year.
- Energy costs are projected to increase at five percent per year until FY 2017 and four percent per year thereafter for inflation. Additionally, energy costs are projected to change proportionally to the sales of water.
- Treatment operating costs are projected to increase at one percent per year until FY 2016 and four percent annually thereafter.
- All other operating costs are projected to increase at one percent per year until FY 2016 and four percent per year thereafter.

Figure 6-2 shows operating cost projections for the recycled water program through FY 2035. Operating costs include recycled water program costs, meter services costs, customer service and billing costs, and total treatment costs from primary treatment through tertiary treatment.

Figure 6-2



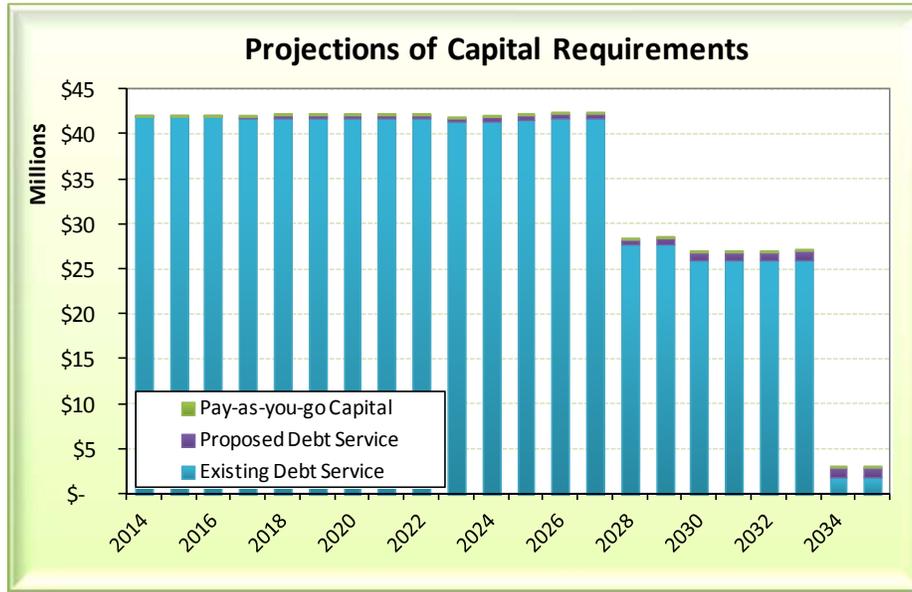
6.1.2. Capital Costs

The CIP for the recycled water system includes a forecast of capital projects and their associated cost outlays in current year dollars. The actual requirements, therefore, must be escalated for price inflation. These escalated projections from the CIP represent the capital component of future revenue requirements.

Figure 6-3 shows capital cost projections for the recycled water program through FY 2035. Capital costs are broken down into repayment for debt funded historical

investment (existing debt service) in the system and prospective investment (proposed debt service) in system growth identified in the CIP.

Figure 6-3



6.2. System Growth Projections

System growth projections are another key element in the financial planning process. System growth, measured increases in usage of recycled water, drives many of the cost increases discussed above. The expectation is that increases in usage outpace costs and yields a lower unit rate over time.

Usage projections are dependent on many variables. Distribution line extensions must be completed to allow customers to utilize recycled water service. Marketing and public information efforts must be in place to introduce prospective customers to recycled water benefits. Finally, the recycled water rate must be cost-effective as compared to available alternatives.

The Pricing Model projects an annual growth rate of one percent in recycled water usage, starting in FY 2014, to account for the estimated 20 additional new customers per year. For customers who are under a take-or-pay contract with the City, the Model assumes the greater of their current recycled water usage or the contracted amount. The total usage shows increases from approximately 13,389 AF per year in FY 2014 to about 14,976 AF per year in FY 2020 and 17,583 AF in FY 2035. This growth is characterized by an increase in retail sales coupled with bulk contracts with regional wholesale customers.

Figure 6-4 and Table 6-1 show recycled water usage projections from the NCWRP and SBWRP plants, including in-plant usage. Over the study period, recycled water usage is projected to grow on average approximately 1.5 percent per year.

Figure 6-4

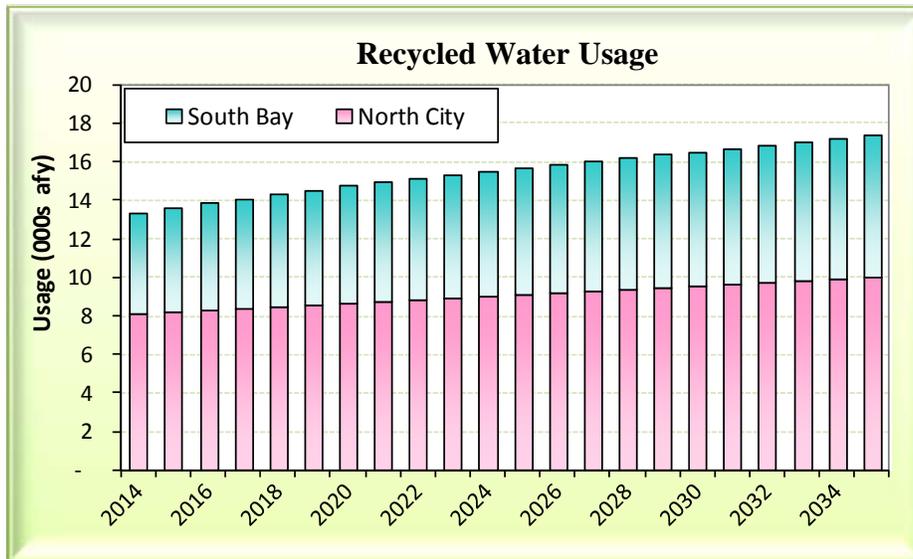


Table 6-1
Recycled Water Usage (HCF)

Line No.	Budgeted	Projected	Projected	Projected	Projected	
	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	
North City WRP						
1	Optimized System					
2						
	Irrigation	1,104,833	1,115,881	1,127,040	1,138,310	1,149,693
3	Non-Irrigation	142,947	144,376	145,820	147,278	148,751
4	Metrobiosolids (MBC)	327,648	330,924	334,233	337,575	340,951
5	Wholesale	-	-	-	-	-
6	Contract (Poway)	290,019	292,919	295,848	298,806	301,794
7	NCWRP Use (1)	889,999	898,899	907,888	916,967	926,137
8	Subtotal Optimized System	2,755,446	2,782,999	2,810,829	2,838,936	2,867,326
Non-Optimized System						
9	Irrigation	463,860	468,499	473,184	477,916	482,695
10	Non-Irrigation	3,333	3,366	3,400	3,434	3,468
11	Wholesale (OMWD)	333,912	337,251	340,624	344,030	347,470
12	Sorrento Mesa (Commercial)	-	-	-	-	-
13	Subtotal Non-Optimized System	801,105	809,116	817,208	825,380	833,633
14	Total North City WRP	3,556,551	3,592,115	3,628,037	3,664,316	3,700,959
South Bay WRP						
15	Irrigation	8,739	8,826	8,914	9,003	9,093
16	Non-Irrigation	-	-	-	-	-
17	Wholesale (Otay)	1,946,696	2,005,502	2,074,327	2,132,262	2,190,632
18	SBWRP Use (1)	320,353	323,557	326,793	330,061	333,362
19	Total South Bay WRP	2,275,788	2,337,885	2,410,034	2,471,326	2,533,087
20	TOTAL USAGE	5,832,339	5,930,000	6,038,071	6,135,642	6,234,046

(1) Usage at North City and South Bay WRP is not billed.

7.0 RATE DEVELOPMENT

Rate development for the Pricing Study considered three major objectives:

- Pricing should be set to ensure greater financial sufficiency more in-line with the cost of providing service
- The rates should be relatively easy to implement and simple to explain to customers
- The rates should be based upon a fair and equitable approach so that users pay in proportion to the cost of providing service

The first objective recognizes the City's desire to make recycled water a more financially self-sufficient operation. If all the past investments made by the City are included in the analysis, generally accepted cost-of-service (COS) based rates may result in rates that are too high for a new service like the City's recycled water program. COS based rates are developed by dividing net allocated revenue requirements in a given year by the projected user and usage units over that same year, thus ensuring financial sufficiency on an annual basis. This approach generally works well in a mature system that experiences incremental growth in costs and usage on an annual basis. Start-up utilities, such as the recycled water system, typically experience high start-up costs and low sales. Initial capital investments are required for production and distribution. Initial operating costs are required for administration and customer service. High costs spread over low initial consumption yields a high unit cost-of-service. As the fixed costs are spread over more and more consumption, the unit cost eventually decreases and stabilizes.

The second objective recognizes the advantages of developing a simple, equitable rate that applies to all customer classes. A simple rate structure that reasonably recovers the cost of providing service is a uniform rate structure wherein all users pay the same variable rate based on consumption.

The third objective recognizes that different customer classes have different demands that they place on the system. Since the costs of constructing and maintaining a system depend on the demands, allocations based on these demands provide a rationale for differentiating among customer classes. City staff was able to gather usage data in an effort to distinguish different customer classes in the recycled water system. Analysis shows that the demands of irrigation, non-irrigation, and wholesale customers are sufficiently different to calculate separate rates for the three classes of customers. However, due to the relatively small size of the customer base and the instance of mixed use amongst different customers, the equitability of the calculated rates for each customer class is uncertain. Thus, we recommend that the City implements the same rate for all recycled water customers.

7.1. Cost of Service Rate Development

Recycled water customers have enjoyed significantly lower rates for the last several years as the City decreased the rates to encourage more users to convert to recycled water. As potable water supplies have become scarcer and long term drought predictions become more real, the real value of the recycled water needs to be communicated to the end users. Setting rates more consistent with a traditional COS would be ideal if the rates compare favorably with potable water rates.

The financial plan integrates the operating and capital costs along with non operating revenues and expenses to provide the total revenue requirements. These revenue requirements are then used as the basis to develop unit rates.

7.1.1. Cost of Service to be Allocated

The annual revenue requirements or costs of service to be recovered from commodity charges include operation and maintenance (O&M) expenses, costs associated with annual renewal and replacements, and other capital related costs. O&M expenses include costs directly related to the operations and maintenance as well as routine maintenance of system facilities.

The COS analysis is based upon the premise of generating adequate annual revenues to meet the estimated annual revenue requirements. As part of the COS analysis, revenues from customers with contractually based rates such as the City of Poway are deducted from the appropriate cost elements.

The following section describes the allocation of the operating and capital costs of service to the selected parameters of the recycled water system.

7.1.2. Functional Cost Components

The total cost of recycled water service is analyzed by system function in order to equitably distribute costs of service to customers. COS analysis requires costs to be assigned to basic functional cost components including base commodity⁷ costs, extra capacity costs, and customer service related costs. This methodology is consistent with industry practices and is described in the M1 Manual – *Principles of Water Rates and Charges*, published by the AWWA.

Base commodity costs are those operating and capital costs of the recycled water system associated with serving customers to the extent required for a constant average rate of use. Extra capacity costs represent those operating costs incurred to meet customer peak demands for recycled water in excess of average day usage, plus those capital costs for extra plant and system capacity beyond that required to supply recycled water at the average rate of use. Total extra capacity costs are typically represented by maximum day and maximum hour demands. Since we are calculating uniform rates for all customer classes, extra capacity costs are included in the base commodity costs to develop a

⁷ The standard industry terminology is base costs, however, we are calling the base costs “base commodity costs” to distinguish from the monthly base fees the City charges per meter size.

uniform variable commodity rate. For this study, allocation to extra capacity is included in the analysis to show the standard cost allocation process.

Customer service costs include customer and meter related costs. Customer costs are uniform for all customers and include such costs as meter reading, billing, collecting, and accounting. Meter service costs include maintenance and capital costs associated with meters and services costs. These costs are assigned based on meter size or meter capacity.

7.1.3. Determination of Allocation Percentages

Allocation percentages are usually derived from actual historical production as is the case in this Study. RFC performed the following steps to derive the allocation percentages for apportioning the City's O&M and capital costs. Customer service related costs are allocated directly to their cost component so no allocation percentages are necessary. Volume related costs are allocated based on the demands placed on the system.

The first step is to assign system peaking factors. Base commodity is equal to average daily demand (ADD) and assigned a value of 1.0. Typically, maximum day and maximum hour demands are used for cost allocation purposes. However, in the recycled water system, maximum month usage is readily available and is used as the basis for cost allocation. The recycled water system's maximum month demand is 1.57 times the ADD based on usage records for FY 2013. Maximum month is therefore assigned a value of 1.57. Capacity allocations are calculated based on these factors. Allocation percentages are calculated by dividing the number of units by the peaking factor for the design basis. Cost categories that are solely Base related, such as source of supply, are allocated 100 percent to Base. Cost categories that are designed to meet maximum month peaks, such as the distribution system, are allocated to base commodity and max month factors. Therefore the allocations are as follows:

$$\text{Base Commodity:} \quad 63.7\% = (1.0/1.57) \times 100$$

$$\text{Maximum Month:} \quad 36.3\% = (0.57/1.57) \times 100$$

These percentages are used to spread the operating and capital improvement costs amongst base commodity and maximum month parameters for COS calculations.

7.1.4. Allocation of Revenue Requirements and Revenue Offsets

O&M expenses, which include the recycled water program costs and treatment costs for the test year, are allocated to base commodity since these costs are incurred to provide for the average usage in the system.

Capital costs, including capital improvements financed from annual revenues, debt service and other sources, net of capacity fees revenue, are allocated to base commodity and max month since these costs are used to provide capacity in the system.

Recycled Water Meter Services costs, net of any meter installation revenue collected from customers, are allocated equally between commodity costs (base commodity and max month) and meter related costs. These costs include costs to serve meters and maintain the distribution system. Customer service and billing costs are allocated to customers.

Revenue offsets including Poway contract revenue, fees from Olivenhain, and credits from MWD and SDCWA are allocated on the same basis as the total of the other costs are allocated to base commodity and max month.

Table 7-1 shows the allocation of O&M and capital costs to various cost components.

**Table 7-1
Allocation of Revenue Requirements**

Allocation of Peaking Costs	Commodity Rates		Monthly Base Fees		2014 Total
	Base	Max Month	Meters	Customer	
O&M and Treatment Costs	\$ 17,371,896				\$ 17,371,896
RW Meter Services Costs	\$ 364,202	\$ 207,595	\$ 571,797		\$ 1,143,593
Billing Costs				\$ 31,031	\$ 31,031
Capital Costs	\$ 26,657,275	\$ 15,194,647			\$ 41,851,922
TOTAL COST OF SERVICE	\$ 44,393,372	\$ 15,402,242	\$ 571,797	\$ 31,031	\$ 60,398,441
Poway & Olivenhain Revenue	\$ (354,866)	\$ (123,120)			\$ (477,986)
Credits from MWD and CWA	\$ (2,048,121)	\$ (710,594)			\$ (2,758,715)
TOTAL COST OF SERVICE	\$ 41,990,385	\$ 14,568,527	\$ 571,797	\$ 31,031	\$ 57,161,740

7.1.5. Unit Costs of Service

In order to determine rates, unit costs of service need to be developed for each cost category. The unit costs of service are developed by dividing the total annual costs allocated to each parameter by the total annual units of the respective category. Table 7-2 shows the units of service and the development of the FY 2014 unit costs for each of the cost categories.

Different units are used for the different cost categories. The volume related costs categories are based on volumetric units of one hundred cubic feet or HCF (about 748 gallons). The extra capacity categories of maximum month are based on a rate of usage so they are calculated in HCF per day. Meter related costs are based on equivalent meters which are based on the hydraulic capacity of the different meters. Customer related cost categories are based on the number of accounts.

Once the total number of units is known they can be used to calculate unit costs. The allocated costs are simply divided by the total number of units for each category to determine the unit costs of each category as shown in Table 7-2. Since we are calculating the same rates for all customer classes, the extra capacity or maximum month costs are included with the base commodity costs to develop the uniform rate. The calculated unit rate is over \$14 per hcf and represents the true cost of producing and distributing recycled water and assumes that all the costs are borne by recycled water. This COS rate is impractical to implement and therefore the market based approach is reasonable.

**Table 7-2
Unit Cost Calculation FY 2014**

Unit Costs	Base Commodity	Meters	Customer	2014 Total
Total Cost of Service	\$ 56,558,912	\$ 571,797	\$ 31,031	\$ 57,161,740
Units of Service	4,004,320	29,746	6,948	
Units of Measure	hcf	equiv meters/yr	bills/yr	
Unit Costs	\$ 14.12	\$ 19.22	\$ 4.47	

7.2. Market Driven Alternative Rate Development

Marketability and customer impacts were among the pricing objectives cited at the onset of our study. The City has a valuable resource in recycled water. Encouraging more users to switch to recycled water by providing a competitive pricing plan is in the interests of the City and the users, and helps meet regional goals. Recognizing that recycled water users incur costs in retrofitting and therefore need incentives to convert to recycled water, it is only reasonable to provide them a lower rate than potable water. If rates are based on cost of service, there would be little incentive for existing customers to use recycled water or new customers to convert to recycled water use since the recycled water rate would be significantly higher than potable water rates. Market-driven rate alternatives may be designed to address the problems of a cost-of-service rate. Since such alternative rates are not constrained by the requirement to meet cash needs every year, they can be more competitive with potable irrigation water pricing. Since recycled water is used mainly for irrigation purposes, it is more appropriate to target the recycled water rate to a specific percentage of the irrigation rate rather than the commercial potable water rate.

The drawback of alternative rates is their ability to meet the objective of financial sufficiency in the short term. If revenues from the sale of recycled water do not recover costs of producing and distributing recycled water, potable water and/or wastewater users will have to make up the difference.

Most agencies in California charge a recycled water rate between 75 to 90 percent of the potable water rate. The recycled water commodity rate is currently 20 percent of the June 2013 irrigation rate of \$4.014 per HCF. We recommend the recycled water rate be set at \$2.241 per hcf for the next four years based on the modified cost of service taking into consideration only demineralization capital, tertiary treatment and capital and operating costs of the distribution system. This rate equals 56 percent of the June 2013 potable irrigation water rate. It should be noted that the recommended rate is not the true cost of service rate. The true cost of service rate is much higher than the recommended rate. The recommended rate will continue to provide an incentive to new users and allow the Water Branch and Metro Wastewater to partially recover their costs. Water and wastewater users will bear the remaining costs of the system not recovered from recycled water users based on the terms set in the Metro Agreement. Table 7-3 shows the

calculation of the recommended recycled water rate of \$2.241 per hcf for the next four years.

The recommended rate is designed to provide a good balance between incentives for recycled water use and cost of service. As costs and sales can be projected with reasonable certainty for only a few years, the City should consider reviewing the recycled water rate periodically with available updated information.

**Table 7-3
Modified Cost of Service Recycled Water Rate Calculation**

	Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017
Revenue Requirements				
O&M Costs	\$ 2,966,987	\$ 3,010,580	\$ 3,106,970	\$ 3,231,248
Treatment Costs	\$ 4,032,913	\$ 4,073,242	\$ 4,113,975	\$ 4,278,534
Capital Costs				
Existing Debt Service	\$ 5,104,219	\$ 5,104,243	\$ 5,141,858	\$ 5,083,578
Proposed Debt Service	\$ 47,873	\$ 95,745	\$ 95,745	\$ 149,089
Pay-as-you-go Capital	\$ 36,145	\$ 39,423	\$ 91,551	\$ 96,189
Subtotal: Capital Costs	\$ 5,188,236	\$ 5,239,411	\$ 5,329,154	\$ 5,328,856
Total Revenue Requirements	\$ 12,188,136	\$ 12,323,234	\$ 12,550,099	\$ 12,838,638
Less: Revenue Offsets				
Credits from MWD and CWA	\$ 2,758,715	\$ 2,786,300	\$ 2,564,380	\$ 2,337,740
Poway Contract Revenue	\$ 462,046	\$ 471,332	\$ 480,806	\$ 505,038
Fees from Olivenhain	\$ 15,941	\$ 15,941	\$ 15,941	\$ 15,941
Interest Revenue	\$ -	\$ -	\$ -	\$ -
Meter Installation Revenue	\$ 100,000	\$ 105,000	\$ 25,000	\$ 25,000
Capacity Fee Revenue	\$ 73,128	\$ 73,128	\$ 24,376	\$ 24,376
Subtotal Revenue Offsets	\$ 3,409,829	\$ 3,451,702	\$ 3,110,503	\$ 2,908,095
TOTAL NET REVENUE REQUIREMENTS	\$ 8,778,307	\$ 8,871,532	\$ 9,439,596	\$ 9,930,543
Total Sales (HCF)	4,004,320	4,083,701	4,173,309	4,252,233
Calculated Recycled Water Rate, \$/HCF	\$ 2.19	\$ 2.17	\$ 2.26	\$ 2.34
Average 4 year rate	\$ 2.241	\$ 2.241	\$ 2.241	\$ 2.241

7.3.Recommended Rates

Table 7-4 shows the recommended recycled water rates. The monthly base fees are calculated based on the meter capacity ratio derived from the AWWA M22 Manual – Sizing Water Service Lines and Meters.

**Table 7-4
Recommended Recycled Water Rates**

	Existing	Proposed 1/1/2014	Proposed 1/1/2015	Proposed 1/1/2016	Proposed 1/1/2017
Monthly Base Fee					
<u>Meter Size</u>					
5/8"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
3/4"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
1"	\$ 8.63	\$ 23.69	\$ 24.04	\$ 24.73	\$ 25.72
1-1/2"	\$ 43.27	\$ 42.91	\$ 43.55	\$ 44.80	\$ 46.59
2"	\$ 65.96	\$ 65.98	\$ 66.96	\$ 68.89	\$ 71.65
3"	\$ 246.93	\$ 139.03	\$ 141.10	\$ 145.16	\$ 150.97
4"	\$ 411.53	\$ 246.67	\$ 250.34	\$ 257.55	\$ 267.85
6"	\$ 925.93	\$ 542.71	\$ 550.79	\$ 566.64	\$ 589.31
8"	\$ 1,234.59	\$ 927.17	\$ 940.97	\$ 968.05	\$ 1,006.77
10"	\$ 1,646.12	\$ 1,465.41	\$ 1,487.22	\$ 1,530.03	\$ 1,591.23
12"	\$ 2,263.42	\$ 1,926.76	\$ 1,955.43	\$ 2,011.71	\$ 2,092.18
16"	\$ 3,703.75	\$ 3,849.04	\$ 3,906.32	\$ 4,018.76	\$ 4,179.51
Uniform Commodity Rate (\$/hcf)	\$ 0.80	\$ 2.241	\$ 2.241	\$ 2.241	\$ 2.241

8.0 RATE IMPACTS

Depending on the rates implemented there are impacts on the water and wastewater enterprises and on recycled water customers. This section briefly discusses these impacts.

8.1.Impacts on Water and Metro System

The potable water (Water Branch) and Metro System systems have been supporting the recycled water system for several years because the recycled water rates have not been increased or set at a point that is based upon the goal of recovering the costs of service. Given the City's interpretation of the Metro Agreement, the Water Branch will be reimbursed going forward, for the O&M costs of distributing recycled water to customers and the debt service costs of the distribution lines and infrastructure at the NCWRP, from the sale of recycled water from the NCWRP, and the O&M costs of distributing recycled water to customers at the SBWRP from the sale of recycled water from the SBWRP. Past debt service payments for investments made to the recycled water system by the Water Branch will not be reimbursed. In the past, the Water Branch has been absorbing the loss since recycled water revenue is not sufficient to cover the operating costs of the distribution system, including debt service costs. Under the recommended rates, the Water Branch will not fully recover its costs from FY 2014 through 2017 (since rates for subsequent years are not set now, the impacts are only provided for the four years) because revenues from the sale of recycled water at NCWRP are not sufficient to cover all expenses. However, potable water customers would still realize some benefits under the recommended rates since the revenue loss would be significantly lower.

All South Bay revenues, net of the reimbursements to the Water Branch, will accrue to the Metro System, pursuant to the Agreement.

Table 8-1 shows the projected recycled water revenue and the distribution of that revenue to the Water and Metro System on lines 16 and 17, respectively.

Table 8-1
Recycled Water Revenue Projections

Line No.	Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017
Recycled Water Revenue				
North City				
1	\$ 3,115,330	\$ 4,637,465	\$ 4,683,842	\$ 4,730,679
2	\$ 619,565	\$ 602,890	\$ 619,874	\$ 645,178
3	\$ 3,405,817	\$ 3,447,649	\$ 3,106,410	\$ 2,903,961
4	South Bay			
5	\$ 2,973,240	\$ 4,514,110	\$ 4,668,544	\$ 4,798,575
6	\$ 20,252	\$ 19,311	\$ 19,734	\$ 20,414
7	\$ 4,012	\$ 4,052	\$ 4,093	\$ 4,134
8	\$ 10,138,216	\$ 13,225,477	\$ 13,102,496	\$ 13,102,941
Water Branch Expenses				
9	North City			
10	\$ 2,791,146	\$ 2,832,414	\$ 2,922,756	\$ 3,039,723
11	\$ 5,188,236	\$ 5,239,411	\$ 5,329,154	\$ 5,328,856
12	South Bay			
13	\$ 175,841	\$ 178,167	\$ 184,214	\$ 191,526
14	\$ -	\$ -	\$ -	\$ -
15	\$ 8,155,223	\$ 8,249,992	\$ 8,436,124	\$ 8,560,104
16	\$ (838,671)	\$ -	\$ -	\$ (88,760)
17	\$ 2,821,664	\$ 4,975,486	\$ 4,666,372	\$ 4,631,597

8.2. Impacts on Recycled Water Customers

Recycled water customers have enjoyed low rates for a number of years as potable customers have supported the costs of the recycled water system as a part of the strategic water supply planning efforts of the water enterprise fund. The recycled water rates have not been revised since July 2001. During that time potable water rates have increased from \$1.493 per HCF to \$4.014 (June 2013) for irrigation water, an increase of 169 percent. The January 1, 2014 recycled water rate of \$2.241 per HCF represents an increase of 180 percent from the current rate of \$0.80 per HCF, but only a 67 percent increase from its original rate of \$1.34/HCF prior to July 2001, and is about 56 percent of the June 2013 potable irrigation rate.

APPENDICES

APPENDIX A – RATE MODEL ASSUMPTIONS

Inflation and Costs Assumptions

1. O&M (includes non-personnel and tertiary O&M) Inflation: 1% per year until FY 2016, 4% per year thereafter. Personnel: salary inflation is 4% per year from FY 2016, fringe benefits inflation is 4% per year.
2. Energy Inflation: 5% per year until FY 2017, 4% per year thereafter
3. Capital Inflation: 3% per year until FY 2014, 4% per year thereafter
4. Debt Issue Interest Rate: 5.5% per year
5. New Debt Term: 30 years
6. Debt Issuance Cost: 3%
7. Potable Rate Escalation: 4% per year starting FY 2014 – this is used in the revenue projections for recycled water when recycled rates are a percentage of potable rates.
8. Capacity Fees Escalation: 0% per year, capacity fees are equal to the potable water capacity fees.
9. SDCWA reimbursements are assumed to be available each year through the term of the agreements with SDCWA. MWD reimbursements are assumed to decrease by \$40/AF per year starting in FY 2016. No MWD/SDCWA reimbursement at South Bay for Otay's recycled water use.

Model Settings/Scenarios

1. Capital projects funding, based on City policy, is assumed to be 80% debt and 20% cash.

APPENDIX B – RECYCLED WATER PRICING MODEL

Model Tables

Table 1	Recycled Water Rates History
Table 2	O&M Expenses
Table 3	Inflated Capital Improvement Program
Table 4	Capital Financing Plan
Table 5	MWD & CWA Credits
Table 6	Revenue Requirements

**Table 1
Recycled Water Rate History**

Meter Size	Recycled Water Rate History				Potable Water	
	Monthly Rate				Monthly Rate	
	Effective				Effective	
	1-Mar-00	1-Jul-01	20-Jan-02	28-Mar-02	1-Sep-10	1-Jun-13
5/8"	\$ 9.63	\$ 9.63	\$ 8.63	\$ 8.63	\$ 18.86	\$ 19.33
3/4"	\$ 9.63	\$ 9.63	\$ 8.63	\$ 8.63	\$ 18.86	\$ 19.33
1"	\$ 10.23	\$ 10.23	\$ 8.63	\$ 8.63	\$ 27.66	\$ 28.46
1-1/2"	\$ 46.27	\$ 46.27	\$ 43.27	\$ 43.27	\$ 47.79	\$ 49.34
2"	\$ 71.16	\$ 71.16	\$ 65.96	\$ 65.96	\$ 72.95	\$ 75.44
3"	\$ 256.53	\$ 256.53	\$ 246.93	\$ 246.93	\$ 132.04	\$ 136.74
4"	\$ 427.93	\$ 427.93	\$ 411.53	\$ 411.53	\$ 216.30	\$ 224.15
6"	\$ 655.93	\$ 655.93	\$ 925.93	\$ 925.93	\$ 425.08	\$ 440.73
8"	\$ 1,286.59	\$ 1,286.59	\$ 1,234.59	\$ 1,234.59	\$ 676.59	\$ 701.64
10"	\$ 1,724.12	\$ 1,724.12	\$ 1,646.12	\$ 1,646.12	\$ 970.89	\$ 1,006.94
12"	\$ 2,395.42	\$ 2,395.42	\$ 2,263.42	\$ 2,263.42	\$ 1,808.47	\$ 1,875.82
16"	\$ 3,989.75	\$ 3,989.75	\$ 3,703.75	\$ 3,703.75	\$ 3,150.36	\$ 3,267.86
Commodity Rate (per HCF)						
Non-Irrigation	\$ 1.34	\$ 0.80	\$ 0.81	\$ 0.80	\$ 3.547	\$ 3.757
Multi-Family	\$ 1.34	\$ 0.80	\$ 0.81	\$ 0.80	\$ 3.698	\$ 3.917
Cal-Trans	\$ 1.19	\$ 0.80	\$ 0.81	\$ 0.80		
Potable Water Irrigation Rate					\$ 3.790	\$ 4.014

Note: The recycled water rates have not changed since March 2002.

Table 2
O&M Expenses

Line No.		Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018
Recycled Water Program Costs						
1	Personnel Costs					
2	Salaries	\$ 840,981	\$ 840,981	\$ 874,620	\$ 909,605	\$ 945,989
3	Fringe Benefits	\$ 537,053	\$ 558,535	\$ 580,877	\$ 604,112	\$ 628,276
4	Subtotal Personnel Costs	\$ 1,378,034	\$ 1,399,516	\$ 1,455,497	\$ 1,513,717	\$ 1,574,265
5	Non-Personnel Costs					
6	Supplies	\$ 25,897	\$ 26,156	\$ 26,418	\$ 27,474	\$ 28,573
7	Contracts	\$ 288,432	\$ 291,316	\$ 294,229	\$ 305,999	\$ 318,239
8	Other	\$ -	\$ -	\$ -	\$ -	\$ -
9	Subtotal Non-Personnel Costs	\$ 314,329	\$ 317,472	\$ 320,647	\$ 333,473	\$ 346,812
10	Total Recycled Water Program Costs	\$ 1,692,363	\$ 1,716,988	\$ 1,776,144	\$ 1,847,190	\$ 1,921,077
Recycled Water Meter Services						
11	Personnel Costs					
12	Salaries	\$ 441,261	\$ 441,261	\$ 458,911	\$ 477,268	\$ 496,359
13	Fringe Benefits	\$ 354,488	\$ 368,668	\$ 383,414	\$ 398,751	\$ 414,701
14	Subtotal Personnel Costs	\$ 795,749	\$ 809,929	\$ 842,326	\$ 876,019	\$ 911,059
15	Non-Personnel Costs					
16	Supplies	\$ 146,354	\$ 147,818	\$ 149,296	\$ 155,268	\$ 161,478
17	Contracts	\$ 145,217	\$ 146,669	\$ 148,136	\$ 154,061	\$ 160,224
18	Other	\$ 156,273	\$ 157,836	\$ 159,414	\$ 165,791	\$ 172,422
19	Subtotal Non-Personnel Costs	\$ 447,844	\$ 452,322	\$ 456,846	\$ 475,119	\$ 494,124
20	Total Recycled Water Meter Services	\$ 1,243,593	\$ 1,262,251	\$ 1,299,171	\$ 1,351,138	\$ 1,405,184
21	Customer Service & Billing Costs	\$ 31,031	\$ 31,341	\$ 31,655	\$ 32,921	\$ 34,238
22	TOTAL O&M COSTS	\$ 2,966,987	\$ 3,010,580	\$ 3,106,970	\$ 3,231,248	\$ 3,360,498
23	TREATMENT COSTS	\$ 15,679,533	\$ 15,836,328	\$ 15,994,691	\$ 16,634,479	\$ 17,299,858

Table 3
CIP - inflated

Line No.		Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018
1	AA - Reclaimed Water Extension	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935
2	Camino del Sur RW Pipelines - Part Agmt	\$ -	\$ -	\$ -	\$ -	\$ -
3	Carmel Valley Recycled Waterline	\$ -	\$ -	\$ -	\$ -	\$ -
4	Pacific Highlands RWP - Part Agmt	\$ -	\$ -	\$ -	\$ -	\$ -
5	Recycled Water System Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -
6	Camino del Sur RW Project - E&CP Rd. Improv	\$ -	\$ -	\$ -	\$ -	\$ -
7	Los Penasquitos Recycled Waterline	\$ -	\$ -	\$ -	\$ -	\$ -
8	RW PS Drain Line Relocation	\$ -	\$ -	\$ -	\$ -	\$ -
9	3 MG Black Mountain Ranch RW Steel Tank	\$ -	\$ -	\$ -	\$ -	\$ -
10	9 MG Miramar Recycled Water Tank	\$ -	\$ -	\$ -	\$ -	\$ -
11	Camino del Sur Pipeline - North of SR56	\$ -	\$ -	\$ -	\$ -	\$ -
12	Sorrento Mesa/Qualcomm Pipelines	\$ -	\$ -	\$ -	\$ -	\$ -
13	750,000 gal Southbay IBWC Steel Tank	\$ -	\$ -	\$ -	\$ -	\$ -
14	Total CIP - inflated	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935

Table 4
Capital Financing Plan

Line No.		Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018
Sources of Funds						
1	Transfers from Capital Reserve Fund	\$ -	\$ -	\$ -	\$ -	\$ -
2	Capacity Charges	\$ 73,128	\$ 73,128	\$ 24,376	\$ 24,376	\$ 24,376
3	Pay-as-you-go Capital	\$ 36,145	\$ 39,423	\$ 91,551	\$ 96,189	\$ 101,011
4	Debt Funding	\$ 437,091	\$ 450,204	\$ 463,710	\$ 482,258	\$ 501,548
5	Total Sources of Funds	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935
Uses of Funds						
6	Capital Improvement Projects	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935
7	Transfers to Capital Reserve Fund	\$ -	\$ -	\$ -	\$ -	\$ -
8	Total Uses of Funds	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935

Table 5
MWD and CWA Credits

Line No.		Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018
Credits for North City WRP (1)						
1	Credits from MWD (\$/ac-ft)	\$ 250	\$ 250	\$ 210	\$ 170	\$ 130
2	Credits from CWA (\$/ac-ft)	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200
3	Total Credits from CWA and MWD (\$/ac-ft)	\$ 450	\$ 450	\$ 410	\$ 370	\$ 330
4	Total Credits for North City WRP	\$ 2,754,702	\$ 2,782,248	\$ 2,560,287	\$ 2,333,607	\$ 2,102,138
Credits for South Bay WRP						
5	Credits from MWD (\$/ac-ft)					
6	Credits from CWA (\$/ac-ft) (2)	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200
7	Total Credits from CWA and MWD (\$/ac-ft)	\$ 200	\$ 200	\$ 200	\$ 200	\$ 200
8	Total Credits for South Bay WRP	\$ 4,012	\$ 4,052	\$ 4,093	\$ 4,134	\$ 4,175
9	TOTAL CREDITS FROM MWD AND CWA	\$ 2,758,715	\$ 2,786,300	\$ 2,564,380	\$ 2,337,740	\$ 2,106,313

(1) Credits for North City WRP expire in FY 2023. Includes Poway and MBC.

(2) Credits for South Bay WRP expire in FY 2032, applicable to Users other than Otay WD.

Table 6
Revenue Requirements

Line No.	Budgeted FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017	Projected FY 2018	
<u>Revenue Requirements</u>						
1	O&M Costs	\$ 2,966,987	\$ 3,010,580	\$ 3,106,970	\$ 3,231,248	\$ 3,360,498
2	Treatment Costs	\$ 15,679,533	\$ 15,836,328	\$ 15,994,691	\$ 16,634,479	\$ 17,299,858
3	Capital Costs					
4	Existing Debt Service	\$ 41,841,032	\$ 41,841,057	\$ 41,878,671	\$ 41,820,392	\$ 41,820,177
5	Proposed Debt Service	\$ 47,873	\$ 95,745	\$ 95,745	\$ 149,089	\$ 202,433
6	Pay-as-you-go Capital	\$ 36,145	\$ 39,423	\$ 91,551	\$ 96,189	\$ 101,011
7	Total Revenue Requirements	\$ 60,571,569	\$ 60,823,133	\$ 61,167,629	\$ 61,931,397	\$ 62,783,978
<u>Less: Revenue Offsets</u>						
8	Credits from MWD and CWA	\$ 2,758,715	\$ 2,786,300	\$ 2,564,380	\$ 2,337,740	\$ 2,106,313
9	Poway Contract Revenue	\$ 462,046	\$ 471,332	\$ 480,806	\$ 505,038	\$ 530,491
10	Fees from Olivenhain (1)	\$ 15,941	\$ 15,941	\$ 15,941	\$ 15,941	\$ 15,941
11	Interest Revenue	\$ -	\$ -	\$ -	\$ -	\$ -
12	Meter Installation Revenue	\$ 100,000	\$ 105,000	\$ 25,000	\$ 25,000	\$ 25,000
13	Capacity Fee Revenue	\$ 73,128	\$ 73,128	\$ 24,376	\$ 24,376	\$ 24,376
14	Subtotal Revenue Offsets	\$ 3,409,829	\$ 3,451,702	\$ 3,110,503	\$ 2,908,095	\$ 2,702,121
15	Net Revenue Requirements	\$ 57,161,740	\$ 57,371,432	\$ 58,057,126	\$ 59,023,302	\$ 60,081,857

(1) Fees from Olivenhain are a premium of \$25/ac-ft for not being a member agency of Metropolitan Wastewater.

APPENDIX C – ALTERNATIVE RATE SCENARIO

As discussed throughout the report, the Pricing Model provides for alternative rate scenario in order to explore different options available to the City and the resulting recycled water rates and customer impacts. This Appendix discusses the rates by customer class alternative.

Alternative Rates by Customer Class

The primary differentiator of rates amongst different customer classes is based on the demand that they put on the system. This demand is expressed in terms of the maximum day and maximum hour factors. These are the maximum demands expressed as a multiple of the average demands of the customer class. Larger customers generally have lower peaking factors than smaller customers. In our case, most we would expect to have peaking factors that are fairly close for the two customer classes in this study – retail and wholesale. Because we did not have the maximum day or maximum hour factors we used the maximum month as a proxy for the maximum day factor. The peaking factors, shown in the following table, were determined from the average monthly usage in FY 13 for two customer classes. Generally, larger customers tend to have lower peaking factors; however, surprisingly, wholesale customers (Otay and Olivenhain) have the highest peaking factors according to water usage records. Since Poway is billed quarterly, its monthly usage data was not available. Moreover, its rates are set by agreement; thus, Poway’s demand is not included in the analysis.

Customer Class	Peaking Factor
Retail	1.49
Wholesale	1.91

It is important to note that since recycled water is mainly used for irrigation purposes, which is heavily dependent on weather, it is difficult to definitively determine the accurate peaking factor for different customer classes. Moreover, many retail customers have mixed use, such as irrigation and cooling towers, which tend to have different peaking patterns. Additionally, given the relatively small customer base, especially for wholesale customers, the accuracy and reliability of these peaking factors is uncertain. Thus, while we do calculate the recycled water rates based on these peaking factors for these two customer classes, we recommend that the City implements the same commodity rate for all customer classes until the customer base is expanded or more data can be collected to verify the validity and accuracy of the calculated peaking factors.

APPENDIX D – LIST OF ABBREVIATIONS

AF	acre-feet
AWWA	American Water Works Association
CIP	Capital Improvement Program
CWA	Clean Water Act
EDU	Equivalent Dwelling Unit
EPA	United States Environmental Protection Agency
GPD	Gallons per day
HCF	Hundred Cubic Feet
IBWC	International Boundary Water Commission
IPR	Indirect Potable Reuse
LRWRP	Long Range Water Resources Plan
MBC	Metro Biosolids Center
Mg/l	milligrams per liter
MGD	million gallons per day
MJPA	Metropolitan Joint Powers Authority
MWD	Metropolitan Water District of Southern California
NCWRP	North City Water Reclamation Plant
NPDES	National Pollutant Discharge Elimination System
O&M	Operations & Maintenance
OPRA	Ocean Pollution Reduction Act
PLWTP	Point Loma Wastewater Treatment Plant
PA	Participating Agency
PAYGO	Pay-as-you-go
SBWRP	South Bay Water Reclamation Plant
SDCWA	San Diego County Water Authority
SWRCB	State Water Resources Control Board
TDS	Total Dissolved Solids
WRP	Water Resources Plan

CITY OF SAN DIEGO
PUBLIC UTILITIES DEPARTMENT
Recycled Water Pricing Study Report Addendum
July 2, 2013

ADDENDUM TO THE REPORT

Recycled water rates were presented in the June 19, 2013 Recycled Water Pricing Study Report. Since the report was finalized and presented, the Department prepared this addendum and had the consultant review and confirm the calculations in the tables attached. The Department is recommending several changes and an additional rate alternative.

The Recycled Water Pricing Study report was presented to the Independent Rates Oversight Committee (IROC) on June 24, 2013. IROC received public comment on the proposed rate increase based on the modified cost of service. Concerns were raised about using a Unitary rate for the recycled water system since the northern and southern distribution areas are not physically connected to each other, and users in the southern area do not benefit from the NCWRP and its distribution system. Based on this feedback, the Department agreed to look at a “Zone rate” structure as an alternative, whereby the costs associated with the North City system would be borne by customers who benefit from that system and costs associated with the South Bay system would be borne by customers who benefit from that system. The Zone rate analysis would result in a rate of \$3.208 per hundred cubic feet (HCF) for the North City area and a rate of \$1.30/HCF for the South Bay area.

The revenue requirements for operation of the recycled water system are met by the modified cost of service Unitary rate or the Zone rate. The benefits of the unitary system are that all retail customers pay the same rate and are treated equally. This is consistent with the unitary rate model used for water and wastewater ratepayers; all customers pay the same rate whether located near a treatment plant or farther away. The benefit of the Zone rate structure is that it more closely aligns the rate charged to the cost of operating each individual facility and respective distribution system.

During the development of the Zone rate, it was discovered that the Revenue Offsets (Table 7-3) used in the calculation of the Revenue Requirements excluded the base charges. The rate model has been updated to include this revenue offset of approximately \$640,000 per year and the rate has been adjusted accordingly.

The Department has added a capital improvement project for the demineralization of reclaimed water using the Electrodialysis Reversal (EDR) process. The project will relocate two trailer-mounted EDR units from the North City Water Reclamation Plant (NCWRP) to the South Bay Water Reclamation Plant to reduce the Total Dissolved Solids (TDS) in the reclaimed water produced at the South Bay Water Reclamation Plant (SBWRP). Demineralization will reduce the level of TDS in the reclaimed water. The cost for adding two EDR units with capacity of 6 million gallons per day is approximately \$2.9 million, and will be cash funded in FY 2014 and 2015. This cost has been included in the development of the 4-year recycled water rate.

The following Tables have been updated or added since the release of the final report:

Table 1 (Addendum to Table 7-3 in the Report) below shows the rate calculation with these two adjustments. The proposed commodity recycled water rate is \$2.261 per hundred cubic feet HCF, compared to the previous proposed rate of \$2.241 per HCF, and shows how the revenue is split between the Water and Metro Wastewater System Funds.

Table 1
Modified Cost of Service
(Addendum to Table 7-3)

	Projected 2014	Projected 2015	Projected 2016	Projected 2017
<u>Revenue Requirements</u>				
O&M Costs	\$2,966,987	\$3,010,580	\$3,106,970	\$3,231,248
Treatment Costs	\$4,032,913	\$4,073,242	\$4,113,975	\$4,278,534
Capital Costs				
Existing Debt Service	\$5,104,219	\$5,104,243	\$5,141,858	\$5,083,578
Proposed Debt Service	\$47,873	\$95,745	\$95,745	\$149,089
Pay-as-you-go Capital	\$755,828	\$759,106	\$811,235	\$815,872
Subtotal: Capital Costs	\$5,907,920	\$5,959,095	\$6,048,838	\$6,048,539
Total Revenue Requirements	\$12,907,820	\$13,042,917	\$13,269,782	\$13,558,322
<u>Less: Revenue Offsets</u>				
Credits from MWD and CWA	\$2,758,715	\$2,786,300	\$2,564,380	\$2,337,740
Base Charge Revenue (Projected)	\$639,818	\$622,201	\$639,607	\$665,592
Poway Contract Revenue	\$462,046	\$471,332	\$480,806	\$505,038
Fees from Olivenhain	\$15,941	\$15,941	\$15,941	\$15,941
Interest Revenue	\$0	\$0	\$0	\$0
Meter Installation Revenue	\$100,000	\$105,000	\$25,000	\$25,000
Capacity Fee Revenue	\$73,128	\$73,128	\$24,376	\$24,376
Subtotal Revenue Offsets	\$4,049,647	\$4,073,902	\$3,750,110	\$3,573,687
TOTAL NET REVENUE REQUIREMENTS	\$8,858,173	\$8,969,015	\$9,519,672	\$9,984,635
Total Sales (HCF)	4,004,320	4,083,701	4,173,309	4,252,233
Calculated Recycled Water Rate, \$/HCF	\$2.213	\$2.197	\$2.282	\$2.349
Average 4 year rate	\$2.261	\$2.261	\$2.261	\$2.261
Revenue to Water Fund	\$8,638,156	\$8,643,324	\$8,719,961	\$8,883,900
Revenue to Metro Fund	\$4,269,664	\$4,399,593	\$4,549,821	\$4,674,422

Table 2 (Addendum to Table 3 in the Report Appendix) shows projected CIP expenditures for Fiscal Years 2014 through 2017.

Table 2
Recycled Water CIP
(Addendum to Table 3 in Report Appendix)

Line No.		Budgeted	Projected	Projected	Projected	Projected
		FY 2014	FY 2015	FY 2016	FY 2017	FY 2018
1	AA - Reclaimed Water Extension	\$ 546,364	\$ 562,754	\$ 579,637	\$ 602,823	\$ 626,935
2	Camino del Sur RW Pipelines - Part Agmt	\$ -	\$ -	\$ -	\$ -	\$ -
3	Carmel Valley Recycled Waterline	\$ -	\$ -	\$ -	\$ -	\$ -
4	Pacific Highlands RWP - Part Agmt	\$ -	\$ -	\$ -	\$ -	\$ -
5	Recycled Water System Upgrades	\$ -	\$ -	\$ -	\$ -	\$ -
6	Camino del Sur RW Project - E&CP Rd. Improv	\$ -	\$ -	\$ -	\$ -	\$ -
7	Los Penasquitos Recycled Waterline	\$ -	\$ -	\$ -	\$ -	\$ -
8	RW PS Drain Line Relocation	\$ -	\$ -	\$ -	\$ -	\$ -
9	3 MG Black Mountain Ranch RW Steel Tank	\$ -	\$ -	\$ -	\$ -	\$ -
10	9 MG Miramar Recycled Water Tank	\$ -	\$ -	\$ -	\$ -	\$ -
11	Camino del Sur Pipeline - North of SR56	\$ -	\$ -	\$ -	\$ -	\$ -
12	Sorrento Mesa/Qualcomm Pipelines	\$ -	\$ -	\$ -	\$ -	\$ -
13	EDR Costs	\$ 719,684	\$ 719,684	\$ 719,684	\$ 719,684	\$ -
14	Total CIP - inflated	\$ 1,266,047	\$ 1,282,438	\$ 1,299,321	\$ 1,322,506	\$ 626,935

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Tables 3a and 3b were added to illustrate the proposed Zone Rates for North City and South Bay.

Table 3a
Recycled Water Revenue Projections
Zone Rate - North City

	Projected FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017
Revenue Requirements				
O&M Costs	\$2,791,146	\$2,832,414	\$2,922,756	\$3,039,723
Treatment Costs	\$2,426,782	\$2,451,050	\$2,475,560	\$2,574,583
Existing Debt Service	\$4,965,919	\$4,965,943	\$5,003,558	\$4,945,278
Proposed Debt Service	\$47,873	\$95,745	\$95,745	\$149,089
Pay-as-you-go Capital	\$36,145	\$39,423	\$91,551	\$96,189
Subtotal: Capital Costs	\$5,049,936	\$5,101,111	\$5,190,854	\$5,190,556
Total Revenue Requirements	<u>\$10,267,864</u>	<u>\$10,384,575</u>	<u>\$10,589,170</u>	<u>\$10,804,861</u>
Less: Revenue Offsets				
Credits from MWD and CWA	\$2,754,702	\$2,782,248	\$2,560,287	\$2,333,607
Base Fees	\$619,565	\$602,890	\$619,874	\$645,178
Poway Contract Revenue	\$462,046	\$471,332	\$480,806	\$505,038
Fees from Olivenhain	\$15,941	\$15,941	\$15,941	\$15,941
Interest Revenue				
Meter Installation Revenue	\$100,000	\$105,000	\$25,000	\$25,000
Capacity Fee Revenue	\$73,128	\$73,128	\$24,376	\$24,376
Subtotal Revenue Offsets	<u>\$4,025,382</u>	<u>\$4,050,539</u>	<u>\$3,726,284</u>	<u>\$3,549,139</u>
TOTAL NET REVENUE REQUIREMENTS	\$6,242,482	\$6,334,036	\$6,862,887	\$7,255,722
Total Sales (HCF)	2,048,885	2,069,373	2,090,068	2,110,968
Calculated Recycled Water Rate, \$/HCF	\$3.047	\$3.061	\$3.284	\$3.438
Average 4 year rate	\$3.208	\$3.208	\$3.208	\$3.208

Table 3b
Recycled Water Revenue Projections
Zone Rate - South Bay

	Projected FY 2014	Projected FY 2015	Projected FY 2016	Projected FY 2017
Revenue Requirements				
O&M Costs	\$175,841	\$178,167	\$184,214	\$191,526
Tertiary Treatment Costs	\$1,606,131	\$1,622,193	\$1,638,415	\$1,703,951
Existing Tertiary Debt Service	\$138,300	\$138,300	\$138,300	\$138,300
Proposed Debt Service	\$0	\$0	\$0	\$0
Pay-as-you-go Capital*	\$719,684	\$719,683	\$719,684	\$719,683
Subtotal: Capital Costs	\$857,984	\$857,983	\$857,984	\$857,983
Total Revenue Requirements	\$2,639,956	\$2,658,343	\$2,680,612	\$2,753,460
Less: Revenue Offsets				
Credits from MWD and CWA	\$4,012	\$4,052	\$4,093	\$4,134
Base Fees	\$20,252	\$19,311	\$19,734	\$20,414
Subtotal Revenue Offsets	\$24,265	\$23,363	\$23,826	\$24,548
TOTAL NET REVENUE REQUIREMENTS	\$2,615,691	\$2,634,979	\$2,656,786	\$2,728,912
Total Sales (HCF)	1,955,435	2,014,328	2,083,241	2,141,265
Calculated Recycled Water Rate, \$/HCF	\$1.338	\$1.309	\$1.276	\$1.275
Average 4 year rate	\$1.300	\$1.300	\$1.300	\$1.300

*City is installing demineralization capacity at SBWRP at a cost of \$2,878,734 cash funded

MEMORANDUM

City of San Diego
Public Utilities Department
Recycled Water Peer Review Analysis

July 23, 2015

To: Lee Ann Jones-Santos, City of San Diego

From: Ann Bui, Brian Jewett, Alberto Morales, Black & Veatch



Recycled Water Pricing Study

Analysis

Black & Veatch was hired by the City of San Diego, Public Utilities to conduct a review of the recycled water rate model. The rate model was developed in 2012/2013 by Raftelis Financial Consultants (RFC) in order to update the recycled water rate charged to all City customers. The City provides recycled water to internal City customers and wholesale service to the City of Poway, Olivenhain Municipal Water District, and Otay Water District. Through the recycled water rate model, RFC developed two alternatives for a commodity rate. The alternatives consisted of a unitary rate where all customers are charged a uniform rate regardless of location and a two zone rate where customers are charged separately based on location. The locations within the City are North City and South Bay.

In conducting our review of the recycled water rate model, Black & Veatch reviewed the customer data, agreements, operation and maintenance expenses, capital improvement expenditures, and customer sales and financial projections of the recycled water operations as we deemed necessary to express our opinion of the operating results and projections. Black & Veatch reviewed the calculations in the RFC model and can verify that they are arithmetically correct. Black & Veatch did not validate the accuracy of the data provided but based on industry experience the figures are reasonable. In our opinion, the methodology used in the model is sound and incorporates the existing contractual requirements between the City and its wholesale customers. The model does not provide alternative analyses for the situation whereby no wholesale contracts exist and the system is evaluated under a full cost of service approach.

Black & Veatch also understands that the projections set forth in the recycled water rate model are "forward-looking statements". These statements make certain assumptions with respect to conditions, events, and circumstances that may occur in the future. The methodology utilized by RFC in performing the analyses follows generally accepted practices for such projections. Such assumptions and methodologies are reasonable and appropriate for the purpose for which they are used. While we believe the assumptions are reasonable and the projection methodology valid, actual results may differ materially from those projected, as influenced by the conditions, events, and circumstances that actually occur. In conducting the peer review of the recycled water rate model, circumstances changed as the time frame for the development of the commodity rate changes. Data was updated which resulted in different unitary rate and zonal rates with which Black & Veatch can support.

You Can Protest the Proposed Rate Adjustment

You can use the form in this notice to register your protest against the proposed water rate adjustment. You can also choose to write a letter to the City, following the requirements below, or appear at the public hearing listed on the front cover of this notice to submit your written protest.

How Can I Participate?

Interested parties can comment on the proposed rates. California Constitution Article XIII D section 6 (Proposition 218) prohibits the City from implementing the new rates if a majority of the affected property owners or tenants file written protests opposing the rates before the end of the public hearing. Only one written protest per affected property will be counted towards the majority protest. Written protests must be received by the City Clerk, City of San Diego, Mail Station No. 2P, City Administration Building, 202 C Street, San Diego, CA 92101, before the end of the public hearing which is scheduled for 10:00 a.m., November 21, 2013. Each protest must identify the affected property (by street address or Assessor's Parcel Number) and include the signature of the property owner or utility customer of record. In compliance with Proposition 218, e-mail protests will not be accepted. Fax protests will also not be accepted. Although oral comments at the public hearing will not qualify as formal protests unless accompanied by a written protest, the City Council welcomes input from the community during the public hearing.

Some customers will receive multiple notices

In order to ensure that all San Diegans are informed about possible water rate increases, these Notices are being sent to all City of San Diego water customers. If you are responsible for more than one bill, you will receive more than one Notice.

USE THIS FORM TO PROTEST THE PROPOSED WATER RATE INCREASE

I _____ protest this proposed increase to water rates.
(Print first and last name)

Property Address or Assessor's Parcel Number: _____

Signature: _____

If you wish to use this form as your protest, please fill out and mail in a stamped envelope to:
 City Clerk, City of San Diego, City Administration Building, 202 C Street, MS 2P, San Diego, CA 92101
 or deliver it to the City Clerk before the end of the Public Hearing on November 21, 2013.

This material is available in alternative formats upon request to accommodate persons with disabilities or non-English speakers. To order information in an alternative format, or to arrange for a sign language or oral interpreter at the November 21, 2013 hearing, please call the Clerk's office on or before November 8, 2013 at (619) 533-4000 (voice) or (619) 236-7012 (TTY).



THE CITY OF SAN DIEGO

Notice of Public Hearing

The San Diego City Council will hold a public hearing to consider a proposed water rate increase primarily as a result of an increase by the San Diego County Water Authority for the wholesale cost of water.

Interested parties are invited to attend. Read inside to learn more.

November 21, 2013
10:00 a.m.
 City Administration Building
 202 "C" Street, 12th Floor
 Council Chambers

Information Inside
 Notice of Public Hearing

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 San Diego, California 92101
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PROPOSED WATER SERVICE RATES AND CHARGES

The San Diego City Council will be holding a public hearing to consider proposed adjustments in water rates. The meeting will be held November 21, 2013. At this hearing the City Council will consider the recommendation to increase water rates on January 1, 2014 and January 1, 2015, primarily to recover the increased cost charged by the San Diego County Water Authority for wholesale water.

Proposed New Water Rates Based on County Water Authority Action

During each of the past two years the San Diego County Water Authority (CWA) has increased several of the rates it charges for imported water. These rate increases apply to all water agencies in the county, including the City. The City's Public Utilities Department (Department), through efficiencies and cost-saving efforts was able to temporarily offset these CWA rate increases and not raise water rates for City customers in 2012 and 2013. By not passing on those increases to our customers, the Public Utilities Department has absorbed approximately \$35 million in increased water costs since January, 2012. However, with the CWA once again raising wholesale water costs for 2014, the Department is proposing a rate increase for the Water Utility sufficient for the utility to pay for the increased cost of water and continue to maintain appropriate debt coverage levels necessary for its outstanding bonds and credit standing.

The overall increase in revenue due to the rate increase in 2014 would be 7.25%. All of the 7.25% will be used to offset the increased cost of water. In 2015, the overall increase in revenue will be at least 5.25% and no more than 7.5%. (The tables in this Notice assume a 7.5% increase.) The final amount of the 2015 increase will depend on the amount CWA raises its rates for 2015. All but 0.5% of the 2015 increase will be used to offset the increased cost of water. The 0.5% will be for the operations and maintenance of the City's Water Utility system.

Because local water supplies are very limited, the City must buy approximately 85-90% of the water it supplies to its customers from the CWA. The CWA bases its increases on the costs for its own infrastructure, operations and maintenance. The CWA increases also reflect the cost it pays to purchase water from the region's largest water wholesaler, the Metropolitan Water District of Southern California. The CWA has approved increases, beginning on January 1, 2014, to its fixed charges – independent of the amount of water purchased, and to its commodity charges which are based upon the amount of water purchased.

Proposed Fee Changes

City of San Diego water rates consist of two parts: the Base Fee and the Commodity Fee. The Base Fee charge is an amount based on meter size designed to recover fixed costs, which do not vary with the volume of water used by a customer such as meter reading, customer billing, and debt service. The Commodity Fee is levied to recover the variable costs based on the amount of water used by water system customers. The proposed rate changes will affect both the Base Fee and the Commodity Fee. Under this proposed rate increase, the Base Fee will be decreasing for all customers, while the Commodity Fee will be increasing.

Proposed Water Base Fee Adjustments

The following table illustrates how the proposed water rate recommendations affect the Base Fee for water customers. In this rate adjustment, the Base Fee would be decreasing. More than 90% of Single Family Residential customers have meters less than 1-inch in size. So, the vast majority of Single Family Residential customers will see their Base Fee decrease by 44 cents per month. This is due to the evaluation of projected costs and how these costs should be allocated. The allocation is applied to the base and commodity charges and also by customer class. The City should conduct this review routinely.

AN IMPORTANT NOTE: The figures included in the following table are based on charges per month. Single Family Residential customers receive a bill every two months.

Meter Size	Base Fee		
	Existing Rates (\$/monthly)	1/1/2014 (\$/monthly)	1/1/2015 (\$/monthly)
5/8 & 3/4 Inch	19.33	18.89	20.31
1 Inch	28.46	25.59	27.51
1 1/2 Inch	49.34	40.89	43.96
2 Inch	75.44	60.03	64.53
3 Inch	136.74	104.98	112.86
4 Inch	224.15	169.07	181.75
6 Inch	440.73	327.86	352.44
8 Inch	701.64	519.16	558.10
10 Inch	1,006.94	742.99	798.72
12 Inch	1,875.82	1,380.05	1,483.55
16 Inch	3,267.86	2,400.67	2,580.72

Proposed Water Commodity Fee Adjustments

The City is attempting to attain the following goals with its proposed commodity fee restructure: 1) to derive enough revenue to cover all costs of providing service, while maintaining adequate financial strength for the Water Utility and; 2) to send a pricing signal that rewards low volume users, while imposing higher rates on high volume users to encourage conservation.

The Water Utility's revenue requirement dictates an overall rate increase of 7.25% in 2014 and a 7.5% increase in 2015. Individual customer's bills will vary from very low volume users seeing a slight overall decrease in their total bill to average and high volume users seeing an increase in their total bill.

The City is proposing a four-tier billing structure for Single Family Residential customers to replace the existing three-tier structure. Each tier is measured in hundred cubic feet (HCF). One HCF of

water is approximately 748 gallons. As the table below illustrates, the first tier rate applies to water usage up to 4 HCF per month; the second tier rate applies to all water used from 5 HCF to 12 HCF per month; the third, tier rate applies to all water used from 13 HCF to 18 HCF; and the fourth tier rate applies to all water used in excess of 18 HCF per month.

Since the Water Utility's last rate case in 2007, Southern California has experienced severe drought conditions. As a result, consumer awareness regarding the need to conserve water is very high. Moreover, the increased use of water-efficient devices (toilets,

dishwashers, washers, etc.) has helped customers conserve. To provide an incentive for those who conserve, the proposed rate structure for Single Family Residential customers now includes a fourth tier. This new tier replaces the existing Tier 1 and is much smaller. The four units of water included in Tier 1 are priced at the lowest rate since it represents the City's least expensive source of water – local supply. In addition to expanding the number of tiers, the proposed structure also adjusts the pricing differential between the tiers to reflect more accurately the costs for each tier.

Class	Existing Monthly Tiers [*]		Commodity Existing Rates	Proposed Monthly Tiers [*]		Commodity Proposed	
	From	To		From	To	1/1/2014	1/1/2015
Single Family	0	7	3.61	0	4	3.64	3.91
	8	14	3.92	5	12	4.08	4.38
	15+		4.40	13	18	5.82	6.26
Multi-Family				19+		8.19	8.80
			3.92			4.34	4.67
Non Residential			3.76			4.17	4.49
Temporary Construction			4.01			4.62	4.97
Irrigation			4.01			4.62	4.97

[*] Bi-monthly tiers are twice monthly allowances

Example: When combined with new Base Fees, the new Commodity Fee will effectively raise total water rates for a typical Single Family Residential customer using 12 HCF/month by approximately 2.9% (\$1.89 per month). The exact amount of increase will vary among customers because of varying levels of water consumption.

Typical Bill Calculation for 12 HCF/month			
	Existing Bill	Proposed 1/1/2014	Proposed 1/1/2015
Single Family 3/4" meter	\$64.20	\$66.09	\$70.99
Change		2.89%	7.50%

NOTE: Please note that the City bills its Single Family Residential customers bi-monthly. This means each bill these customers receive includes charges for two months of service.

Proposed Rate Adjustments to Fire Service

Private fire protection services are allocated in a similar manner as other services. For example, a portion of water supply is allocated to fire protection for actual fire fighting and fire fighting training exercises. Fire protection requires that the Water system have the capability to provide large quantities of water for short durations of time at sufficient pressure. The proposed rate structure for fire protection is similar to that used in the development of the base fee, but a connection size and cost ratio is used in place of hydraulic capacities and the 1.5" connection serves as the standard. The table at the right illustrates the proposed adjustments.

The most common Fire Service customer has a 6" connection, which would result in their monthly bill going from \$25.05 to \$27.23, or an increase of \$2.18 or 8.7% starting January 1, 2014.

NOTE: Only a small percentage of customers have a fire service fee charge on their bill.

Fire Line Size	Fire Protection		
	Existing Rates (\$/monthly)	Proposed 1/1/2014 (\$/monthly)	Proposed 1/1/2015 (\$/monthly)
5/8 & 3/4 Inch			
1 Inch	6.26	2.40	2.58
1 1/2 Inch	6.26	2.40	2.58
2 Inch	8.35	3.73	4.00
3 Inch	12.53	14.42	15.50
4 Inch	16.70	18.44	19.82
6 Inch	25.05	27.23	29.27
8 Inch	33.40	38.46	41.34
10 Inch	41.75	49.68	53.41
12 Inch	50.10	59.29	63.74
16 Inch	66.80	96.14	103.35

Usted puede reclamar por los ajustes de tarifas propuestos

Usted puede utilizar el formulario que se encuentra en esta notificación para registrar su reclamo contra el ajuste de la tarifa del agua propuesto. Usted también puede optar por escribir una carta a la ciudad, cumplimentando los requisitos a continuación, o bien asistir a la audiencia pública que se indica en la portada de esta notificación para presentar su reclamo por escrito.

¿Cómo puedo participar?

Las partes interesadas pueden efectuar comentarios sobre las tarifas propuestas. El Artículo XIII D Sección 6 (Proposición 218) de la Constitución de California prohíbe a la ciudad implementar las nuevas tarifas si la mayoría de los propietarios o inquilinos afectados presenta reclamos por escrito que se oponen a las tarifas antes de que termine la audiencia pública. Solamente se contará un reclamo por escrito por propiedad afectada para el reclamo de la mayoría. Los reclamos por escrito se deben presentar a City Clerk, City of San Diego, Mail Station No. 2P, City Administration Building, 202 C Street, San Diego, CA 92101, antes de que termine la audiencia pública que está programada para las 10:00 a.m. el día 21 de noviembre de 2013.

Cada reclamo debe identificar la propiedad afectada (mediante la dirección postal o el número de parcela del tasador) e incluir la firma del dueño de la propiedad o del cliente de los servicios públicos de registro. En cumplimiento de la Proposición 218, no se aceptarán reclamos por correo electrónico. Tampoco se aceptarán reclamos por fax. Aunque los comentarios orales en la audiencia pública no calificarán como reclamos formales a menos que estén acompañados por un reclamo por escrito, el Ayuntamiento de la ciudad agradece los comentarios de la comunidad durante la audiencia pública.

Algunos clientes recibirán varias notificaciones

Para garantizar que todos los ciudadanos de San Diego estén informados acerca de los posibles aumentos de las tarifas del agua, estas notificaciones se envían a todos los clientes de agua de la ciudad de San Diego. Si usted es responsable de más de una factura, recibirá más de una notificación.

UTILICE ESTE FORMULARIO PARA RECLAMAR POR EL AUMENTO DE LAS TARIFAS DEL AGUA PROPUESTO

Yo, _____ (Escriba el nombre y el apellido) efectúo un reclamo respecto del aumento de las tarifas del agua propuesto.

Dirección de la propiedad o número de parcela del tasador: _____

Firma: _____

Si desea utilizar este formulario como reclamo, por favor complételo y envíelo por correo en un sobre estampillado a: City Clerk, City of San Diego, City Administration Building, 202 C Street, MS 2P, San Diego, CA 92101 o bien entréguelo al Secretario antes del final de la Audiencia Pública el 21 de noviembre de 2013.

Este material está disponible en formatos alternativos bajo solicitud para adaptarse a personas con incapacidades o personas que no hablan inglés. Para pedir la información en un formato alternativo, o para solicitar un intérprete oral o de lenguaje de señas en la audiencia del 21 de noviembre de 2013, por favor llame a la oficina del Secretario como máximo el 8 de noviembre de 2013, al número (619) 533-4000 (voz) o (619) 236-7012 (TTY).



CIUDAD DE SAN DIEGO

Notificación de Audiencia Pública

El Ayuntamiento de la ciudad de San Diego llevará a cabo una audiencia pública para considerar un aumento propuesto de la tarifa del agua principalmente como resultado de un aumento del costo del agua al por mayor por parte de la Autoridad del Agua del Condado de San Diego.

Se invita a las partes interesadas a asistir. Lea adentro para obtener más información.

21 de noviembre de 2013
10:00 a.m.

City Administration Building
202 "C" Street, 12th Floor
Council Chambers

Notificación de Audiencia Pública en el interior

CIUDAD DE SAN DIEGO
202 C Street, MS 2P
San Diego, California 92101
Ang kasulatan na ito ay matatagpuan din sa www.sandiego.gov, sa wikang Tagalog.
Este Material esta disponible en Espanol en la pagina electronica: www.sandiego.gov



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TARIFAS Y CARGOS PROPUESTOS DEL SERVICIO DE AGUA

El Ayuntamiento de la ciudad de San Diego llevará a cabo una audiencia pública para considerar los ajustes de las tarifas del agua propuestos. La reunión se celebrará el 21 de noviembre de 2013. En esta audiencia, el Ayuntamiento considerará la recomendación de aumentar las tarifas del agua el 1 de enero de 2014 y el 1 de enero de 2015, principalmente para recuperar los mayores costos cobrados por la Autoridad del Agua del Condado de San Diego por el agua al por mayor.

Nuevas Tarifas del Agua Propuestas en Base a La Acción de la Autoridad del Agua del Condado

Durante los dos años anteriores, la Autoridad del Agua del Condado de San Diego (CWA, por sus siglas en inglés) ha incrementado muchas de las tarifas que cobra por el agua importada. Estos aumentos en las tarifas se aplican respecto de todas las agencias del agua del condado, incluida la ciudad. El Departamento de Servicios Públicos de la ciudad (el Departamento), por medio de eficiencias y esfuerzos en pos del ahorro de costos, pudo compensar temporalmente estos aumentos en las tarifas de la CWA y no aumentar las tarifas del agua para los clientes durante 2012 y 2013. Al no trasladar estos aumentos a nuestros clientes, el Departamento de Servicios Públicos ha absorbido aproximadamente \$35 millones en mayores costos del agua desde el mes de enero de 2012. Sin embargo, dado que la CWA incrementará nuevamente los costos del agua al por mayor para el año 2014, el Departamento propone un aumento de la tarifa del servicio público del agua suficiente como para que el servicio público pague el mayor costo del agua y continúe manteniendo niveles apropiados de cobertura de deuda necesarios para sus obligaciones en circulación y su condición crediticia.

El incremento general en los ingresos debido al aumento de la tarifa en el año 2014 sería del 7.25%. La totalidad de ese 7.25% se utilizará para compensar el mayor costo del agua. En el año 2015, el incremento general en los ingresos será de por lo menos el 5.25% y no más del 7.5%. (Las tablas en esta notificación suponen un aumento del 7.5%). La cantidad final del aumento de 2015 dependerá de la cantidad en que la CWA incremente sus tarifas para 2015. La totalidad del aumento de 2015, menos el 0.5%, se utilizará para compensar el mayor costo del agua. El 0.5% será para las operaciones y para mantenimiento del sistema de servicios públicos del agua de la ciudad.

Debido a que los suministros de agua locales son muy limitados, la ciudad debe adquirir aproximadamente el 85-90% del agua que proporciona a sus clientes de la Autoridad del Agua del Condado de San Diego. La CWA basa sus aumentos en los costos correspondientes a su propia infraestructura, sus operaciones y el mantenimiento. Los aumentos de la CWA también reflejan el costo que ésta paga para adquirir agua al vendedor mayorista de agua más grande de la región, el Distrito Metropolitano del Agua del sur de California. La CWA ha aprobado aumentos, a partir del 1 de enero de 2014, en sus cargos fijos (que son independientes de la cantidad de agua que se compra), y en sus cargos variables, que se basan en la cantidad de agua que se compra.

Cambios propuestos en las tarifas

Las tarifas del agua de la ciudad de San Diego constan de dos partes: la tarifa base y la tarifa variable. La tarifa base es una cantidad que se basa en el tamaño del medidor y está diseñada para recuperar los costos fijos, y no varía con el volumen de agua que utiliza el cliente, como por ejemplo la lectura del medidor, la facturación del cliente y el pago de deudas. La tarifa variable se cobra para recuperar los costos variables basados en la cantidad de agua que los clientes del sistema del agua utilizan. Los cambios propuestos en las tarifas afectarán tanto la tarifa base como la tarifa variable. En virtud de este aumento de la tarifa propuesto, la tarifa base disminuirá para todos los clientes, mientras que la tarifa variable aumentará.

Ajustes de la tarifa base del agua propuestos

La tabla a continuación muestra de qué manera las recomendaciones propuestas respecto de la tarifa del agua afectarán la tarifa base para los clientes del sistema de agua. En este ajuste de la tarifa, la tarifa base disminuirá. Más del 90% de los clientes residenciales unifamiliares tienen medidores de menos de 1 pulgada de tamaño. Por ello, la gran mayoría de los clientes residenciales unifamiliares verá que su tarifa base disminuirá 44 centavos por mes. Esto se debe a la evaluación de costos proyectados y a cómo se deberían asignar tales costos. La asignación se aplica respecto de los cargos de la tarifa base y la tarifa variable, y también según la clase de cliente. La ciudad debería llevar a cabo esta revisión regularmente.

AVISO IMPORTANTE: las cifras que se incluyen en la siguiente tabla se basan en los cargos por mes. Los clientes residenciales unifamiliares recibirán una factura cada dos meses.

Tamaño del medidor	Tarifa base		
	Tarifas existentes (\$ por mes)	1/1/2014 (\$ por mes)	1/1/2015 (\$ por mes)
5/8 y 3/4 pulgadas	19.33	18.89	20.31
1 pulgada	28.46	25.59	27.51
1 1/2 pulgada	49.34	40.89	43.96
2 pulgadas	75.44	60.03	64.53
3 pulgadas	136.74	104.98	112.86
4 pulgadas	224.15	169.07	181.75
6 pulgadas	440.73	327.86	352.44
8 pulgadas	701.64	519.16	558.10
10 pulgadas	1,006.94	742.99	798.72
12 pulgadas	1,875.82	1,380.05	1,483.55
16 pulgadas	3,267.86	2,400.67	2,580.72

Ajustes de la tarifa variable del agua propuestos

La ciudad está intentando alcanzar las siguientes metas gracias a la reestructuración propuesta de la tarifa variable: 1) generar ingresos suficientes para cubrir todos los costos de la prestación del servicio, a la vez que se mantiene una solidez financiera adecuada para el servicio público del agua; y 2) enviar una señal de precio que recompense a los usuarios de poco volumen, a la vez que se aplican tarifas más altas a los usuarios de grandes volúmenes, a fin de promover la conservación.

El requisito respecto de los ingresos del servicio público del agua prevé un aumento general de la tarifa del 7.25% en 2014 y del 7.5% en 2015. Las facturas individuales de los clientes variarán, ya que los usuarios de muy poco volumen verán una leve disminución en general en el total de su factura, mientras que los clientes de volumen promedio y aquellos usuarios de grandes volúmenes verán un incremento en su factura total.

La ciudad propone una estructura de facturación de cuatro niveles para los clientes residenciales unifamiliares, para reemplazar la estructura de tres niveles existente.

Cada nivel se mide en cien pies cúbicos (HCF, por sus siglas en inglés). Un HCF de agua es aproximadamente 748 galones. Como indica la siguiente tabla, la tarifa del primer nivel se aplica al uso de agua de hasta 4 HCF por mes; la tarifa del segundo nivel se aplica a todo el uso de agua entre 5 HCF y 12 HCF por mes; la tarifa del tercer nivel se aplica al uso de agua entre 13 HCF y 18 HCF; y la tarifa del cuarto nivel se aplica a todo el uso de agua que supere los 18 HCF por mes.

Desde el último caso de las tarifas del servicio público de agua de 2007, el sur de California ha experimentado graves condiciones de sequía. Debido a esto, la concientización de los usuarios respecto de la necesidad de conservar el agua es muy alta. Asimismo, el mayor uso de dispositivos

eficientes en términos de uso del agua (inodoros, lavavajillas, lavadoras, etc.) ha ayudado a los clientes en lo que respecta a la conservación.

A fin de brindar un incentivo a quienes conservan el agua, la estructura de tarifas propuesta para los clientes residenciales unifamiliares ahora incluye un cuarto nivel. Este nuevo nivel reemplaza el Nivel 1 actual y es mucho más bajo. Las cuatro unidades de agua que se incluyen en el Nivel 1 se cobran a la tarifa más baja dado que representan la fuente de agua menos costosa de la ciudad: el suministro local. Además de incrementar la cantidad de niveles, la estructura propuesta también ajusta el diferencial de precios entre los niveles para reflejar los costos de cada nivel de manera más precisa.

Clase	Niveles mensuales existentes (*)		Tarifa variable	Niveles mensuales propuestos (*)		Tarifa variable propuesta	
	Desde	Hasta		Desde	Hasta	1/1/2014	1/1/2015
	hcf	hcf	Tarifas existentes \$/hcf	hcf	hcf	\$/hcf	\$/hcf
Unifamiliar	0	7	3.61	0	4	3.64	3.91
	8	14	3.92	5	12	4.08	4.38
	15+		4.40	13	18	5.82	6.26
				19+		8.19	8.80
Multi-familiar			3.92			4.34	4.67
No residencial			3.76			4.17	4.49
Construcción temporal			4.01			4.62	4.97
Riego			4.01			4.62	4.97

(*) Los niveles bimensuales son dos veces las asignaciones mensuales.

Ejemplo: Cuando se combinan con las nuevas tarifas base, las nuevas tarifas variables incrementarán las tarifas del agua totales en aproximadamente un 2.9% (\$1.89 por mes) para un cliente residencial unifamiliar típico que use 12 HCF por mes. La cantidad exacta del aumento variará para cada cliente según los niveles variables de consumo de agua de cada cliente.

Cálculo para una factura típica para 12 HCF por mes			
	Factura existente	Propuesta 1/1/2014	Propuesta 1/1/2015
Medidor 3/4" unifamiliar	\$64.20	\$66.09	\$70.99
Cambio		2.89%	7.50%

NOTA: Por favor, tenga en cuenta que la ciudad factura a sus clientes residenciales unifamiliares bimensualmente. Esto significa que cada factura que estos clientes reciben incluye los cargos por dos meses de servicio.

Ajustes propuestos de las tarifas para los servicios de protección contra incendios

Los servicios privados de protección contra incendios se asignan de la misma manera que otros servicios. Por ejemplo, una parte del suministro de agua se asigna a la protección contra incendios para la lucha contra incendios real y los ejercicios de capacitación respecto de la lucha contra incendios. Los servicios de protección contra incendios requieren que el sistema de agua tenga la posibilidad de proporcionar grandes cantidades de agua durante breves períodos de tiempo a una presión suficiente. La estructura de tarifas propuesta para los servicios de protección contra incendios es similar a la que se utiliza en el desarrollo de la tarifa base, pero se utiliza un tamaño de conexión y una relación de costo en lugar de las capacidades hidráulicas, y la conexión de 1.5" sirve a modo de estándar. La tabla que se encuentra a la derecha muestra los ajustes propuestos.

El cliente de servicios de protección contra incendios más común tiene una conexión de 6", lo que podría tener como resultado que su factura mensual aumentara de \$25.05 a \$27.23, o bien un aumento de \$2.18 o del 8.7% a partir del 1 de enero de 2014.

NOTA: Solamente un pequeño porcentaje de clientes tiene un cargo de tarifa de servicio de extinción de incendios en su factura.

Tamaño de la línea de fuego	Protección contra incendios		
	Tarifas existentes (\$ por mes)	Propuesta 1/1/2014 (\$ por mes)	Propuesta 1/1/2015 (\$ por mes)
5/8 at 3/4 pulgadas			
1 pulgada	6.26	2.40	2.58
1 1/2 pulgada	6.26	2.40	2.58
2 pulgadas	8.35	3.73	4.00
3 pulgadas	12.53	14.42	15.50
4 pulgadas	16.70	18.44	19.82
6 pulgadas	25.05	27.23	29.27
8 pulgadas	33.40	38.46	41.34
10 pulgadas	41.75	49.68	53.41
12 pulgadas	50.10	59.29	63.74
16 pulgadas	66.80	96.14	103.35

Maaari Ninyong Iprotesta ang Iminumungkahing Pag-aakma ng Presyo

Magagamit ninyo ang porma sa paunawang ito upang iparehistro ang inyong protesta laban sa iminumungkahing pag-aakma ng presyo ng tubig. Makakapili rin kayo na sumulat ng liham sa Lunsod, kasunod ng mga iniaatas sa ibaba, o humarap sa pampublikong pagdinig na nakalista sa pangharap na pabalat ng paunawang ito upang isumite ang iyong nakasulat na protesta.

Paano Ako Makakalahok?

Ang mga interesadong partido ay maaaring magkomento sa iminumungkahing mga presyo. Ang Saligang-batas ng California Artikulo XIII seksyon 6 (Proposisyon 218) ay nagbabawal sa Lunsod na ipatupad ang mga bagong presyo kung ang isang mayoriya ng apektadong mga may-ari o umuupa ay nagharap ng nakasulat ng mga protesta na sumasalungat sa mga presyo bago matapos ang pampublikong pagdinig. Isang nakasulat na protesta lamang kada apektadong ari-arian ang ibibilang patungo sa protesta ng mayoriya. Ang mga nakasulat ng protesta ay dapat matanggap ng City Clerk, City of San Diego, Mail Station No. 2P, City Administration Building, 202 C Street, San Diego, CA 92101, bago matapos ang pampublikong pagdinig na nakatakda para sa 10:00 a.m., Nobyembre 21, 2013. Ang bawat protesta ay dapat tumukoy sa ari-arian (ang kalyeng direksiyon o Numero ng Parsela ng Tagatasa) at kabilang ang pirma ng may-ari ng ari-arian o nakarekord na parokyano ng utilidad. Bilang pagsunod sa Proposisyon 218, ang mga protesta sa e-mail ay hindi tatanggapin. Ang protesta sa fax ay hindi rin tatanggapin. Bagaman ang mga pasalitang komento sa pampublikong pagdinig ay hindi magiging kuwalipikado bilang mga pormal na protesta maliban kung may kasamang nakasulat na protesta, ang Konseho ng Lunsod ay malugod na tumatanggap sa mga inihahatid ng komunidad sa panahon ng pampublikong pagdinig.

Ang ilang parokyano ay tatanggap ng maraming paunawa

Upang matiyak na ang lahat ng mga Taga-San Diego ay nabibigyan ng kaalaman tungkol sa posibleng mga pagtaas ng presyo ng tubig, ang mga Paunawang ito ay ipinadadala sa lahat ng mga parokyano ng tubig ng Lunsod ng San Diego. Kung ikaw ay responsable para sa higit sa isang bill, ikaw ay tatanggap ng higit sa isang Paunawa.

GAMITIN ANG PORMANG ITO UPANG IPROTESTA ANG IMINUMUNGKAHING PAGTAAS NG PRESYO NG TUBIG

Ako, si _____ ay nagpoprotesta sa iminumungkahing

(limbag ang unang pangalan at apelyido)

pagtaas na ito sa mga presyo ng tubig.

Direksiyon ng Ari-arian o

Numero ng Parsela ng Tagatasa: _____

Pirma: _____

Kung nais mong gamitin ang pormang ito bilang iyong protesta, mangyaring kumpletuhin at ipadala sa isang may-selyong sobre sa:

City Clerk, City of San Diego, City Administration Building, 202 C Street, MS 2P, San Diego, CA 92101
o ihatid ito sa Klerk ng Lunsod bago matapos ang Pampublikong Pagdinig sa Nobyembre 21, 2013.

Ang materyal na ito ay makukuha sa isang alternatibong mga anyo kapag hiniling upang pagbigyan ang mga taong may kapansanan o hindi nagsasalita ng Ingles. Upang umorder ng impormasyon sa isang alternatibong anyo, o upang makipag-ayos para sa senyas na wika o interpreter sa salita sa pagdinig sa Nobyembre 21, 2013, mangyaring tawagan ang opisina ng Klerk sa o bago ang Nobyembre 8, 2013 sa (619) 533-4000 (boses) o (619) 236-7012 (TTY).



ANG LUNSOD NG SAN DIEGO

Paunawa ng Pampublikong Pagdinig

Ang Konseho ng Lunsod ng San Diego ay magsasagawa ng isang pampublikong pagdinig upang isaalang-alang ang iminumungkahing pagtaas ng presyo ng tubig pangunahin bilang resulta ng pagtaas ng Awtoridad ng Tubig ng County ng San Diego para sa pakyawang halaga ng tubig.

Ang mga interesadong partido ay iniimbitahang dumalo. Basahin ang nasa loob upang makakuha ng karagdagang kaalaman.

**Nobyembre 21, 2013
10:00 a.m.**

City Administration Building
202 "C" Street, 12th Floor
Council Chambers

Paunawa ng Pampublikong Pagdinig
Impormasyon sa Loob

THE CITY OF SAN DIEGO
202 C Street, MS 2P
San Diego, California 92101
Ang kasulatan na ito ay matatagpuan din sa www.sandiego.gov, sa wikang Tagalog.
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IMINUMUNGKAHING MGA PRESYO AT MGA SINGIL NG SERBISYO NG TUBIG

Ang *Konseho ng Lunsod* ay magsasagawa ng isang pampublikong pagdinig upang isaalang-alang ang iminumungkahing mga pag-aakma sa mga presyo ng tubig. Ang pulong ay gaganapin sa Nobyembre 21, 2013. Sa pagdinig na ito isasaalang-alang ng *Konseho ng Lunsod* ang rekomendasyon na taasan ang mga presyo sa Enero 1, 2013 at Enero 1, 2015, pangunahin upang mabawi ang tumaas na halagang sinisingil ng Awtoridad ng Tubig ng County ng San Diego para sa pakyawang tubig.

Iminumungkahing Bagong mga Presyo ng Tubig Batay sa Aksyon ng Awtoridad ng Tubig ng County

Sa bawat isa ng nakaraang dalawang taon ang Awtoridad ng Tubig ng County ng San Diego (San Diego County Water Authority, CWA) ay nagtaas sa marami ng presyong sinisingil nito para sa inangkat na tubig. Ang mga pagtaas na ito ng presyo ay pinaairal sa lahat ng ahensiya ng tubig sa county, kabilang ang Lunsod. Ang Kagawaran ng Pampublikong Utilidad ng Lunsod (Kagawaran), sa pamamagitan ng pagiging episyente at mga pagsisikap na makatipid ng gastos ay pansamantalang merchantable ng mga pagtaas na ito ng presyo ng CWA at hindi nagtaas ng mga presyo ng tubig para sa mga parokyano ng Lunsod sa taong 2012 at 2013. Sa hindi pagpasa sa mga pagtaas na ito sa ating mga parokyano, ang Kagawaran ng mga Pampublikong Utilidad ay sumalo sa humigit-kumulang na \$35 milyon sa tumaas na mga halaga ng tubig mula noong Enero, 2012. Gayunman, ngayon ang CWA ay muling nagtataas ng mga halaga ng pakyawang tubig para sa 2014, ang Kagawaran ay nagmumungkahi ng isang pagtaas ng presyo para sa Utilidad ng Tubig na sapat para mabayaran ng utilidad ang tumaas na gastos sa tubig at patuloy na panatilihin ang angkop na mga antas ng pagsakop sa utang na kailangan para sa hindi pa nababayaranang mga bono at katayuan ng kredito.

Ang kabuuang pagtaas sa kita dahil sa pagtaas ng presyo sa 2014 ay magiging 7.25%. Ang buong 7.25% ay gagamitin upang pagaanin ang tumaas na gastos ng tubig. Noong 2015, ang kabuuang pagtaas sa kita ay hindi kukulangin sa 5.25% at hindi hihigit sa 7.5%. (Ang mga talahanayan sa Paunawang ito ay nagpapalagay ng 7.5% na pagtaas.) Ang panghuling halaga ng pagtaas sa 2015 ay dedepende sa halagang itataas ng CWA ang mga presyo nito para sa 2015. Lahat maliban sa 0.5 ng pagtaas ay gagamitin upang pagaanin ang gastos sa tubig. Ang 0.5% ay para sa lahat ng pagpapatakbo at pagpapanatili ng sistema ng Utilidad ng Tubig ng Lunsod.

Dahil ang mga lokal na panustos na tubig ay napakalimitado, ang Lunsod ay dapat bumili ng humigit-kumulang na 85-90% ng tubig na itinutustos nito sa mga parokyano mula sa CWA. Ibinabatay ng CWA ang mga pagtaas nito sa mga gastos para sa sarili nitong impra-istruktura, mga pagpapatakbo at pagpapanatili. Ang mga pagtaas ng CWA ay sumasalamin sa halagang binabayaran nito upang bumili ng tubig mula pinakamalaking pakyawang tagabenta ng tubig, ang Metropolitan Water District of Southern California. Ang CWA ay nag-approba ng mga pagtaas, simula sa Enero 1, 2014, sa mga pirmihang singil nito – independiyente sa halaga ng tubig na binili, at sa mga singil sa paninda na batay sa halaga ng biniling tubig.

Iminumungkahing mga Pag-aakma sa Base Fee ng Tubig

Ang mga presyo ng tubig ng Lunsod ng San Diego ay binubuo ng dalawang bahagi: ang Base Fee at Commodity Fee. Ang singil sa Base Fee ay ang halagang batay sa sukat ng metrong idinisenyo upang mabawi ang mga pirmihang gastos, na hindi nagbabago sa dami ng nagamit na tubig ng isang parokyano tulad ng nababasa sa metro, singil sa parokyano, at serbisyo sa utang. Ang Commodity Fee ay ipinapataw upang mabawi ang paiba-ibang gastos batay sa dami ng tubig na ginamit ng mga parokyano ng sistema ng tubig. Ang iminumungkahing mga pagbabago sa presyo ay makakaapekto sa pareho ng Base Fee at Commodity Fee. Sa ilalim nitong iminumungkahing pagtaas ng presyo, ang Base Fee ay bababa para sa lahat parokyano, habang ang Commodity Fee ay tataas.

Iminumungkahing mga Pag-aakma sa Base Fee ng Tubig

Ang sumusunod na talahanayan ay naglalarawan kung paano ang iminumungkahing mga rekomendasyong presyo ng tubig ay nakakaapekto sa Base Fee para sa mga parokyano ng tubig. Sa pag-aakmang ito sa presyo, ang Base Fee ay tataas. Higit sa 90% ng mga parokyanong nasa Pang-isang Pamilyang Tirahan ay may mga metrong mas mababa kaysa 1-pulgada sa sukat. Kaya, ang malawak na mayoriya ng mga parokyanong nasa Pang-isang Pamilyang Tirahan ay makakakita ng pagbaba ng Base Fee ng 44 sentimos kada buwan. Ito ay dahil sa pagtaya ng mga inaasahang gastos at kung paano ang mga gastos na ito ay dapat ilaan. Ang paglalaan ay inilalapat sa base charge at commodity charge at ayon sa klase ng parokyano. Dapat isagawa ng Lunsod ang pagrebasong ito nang palagian.

ISANG MAHALAGANG TALA: Ang mga pigurang kasama sa mga sumusunod na talahanayan ay batay sa mga singil kada buwan. Ang mga parokyano na nasa Pang-isang Pamilyang Tirahan ay tumatanggap ng bill bawat dalawang buwan.

Sukat ng Metro	Base Fee		
	Mga Kasalukuyang Presyo (\$/buwanan)	1/1/2014 (\$/buwanan)	1/1/2015 (\$/buwanan)
5/8 at 3/4 na pulgada	19.33	18.89	20.31
1 pulgada	28.46	25.59	27.51
1 1/2 pulgada	49.34	40.89	43.96
2 pulgada	75.44	60.03	64.53
3 pulgada	136.74	104.98	112.86
4 na pulgada	224.15	169.07	181.75
6 na pulgada	440.73	327.86	352.44
8 pulgada	701.64	519.16	558.10
10 pulgada	1,006.94	742.99	798.72
12 pulgada	1,875.82	1,380.05	1,483.55
16 na pulgada	3,267.86	2,400.67	2,580.72

Iminumungkahing mga Pag-aakma ng Commodity Fee ng Tubig

Ang Lunsod ay nagtatangkang matupad ang mga sumusunod na hangarin sa iminumungkahi nitong pagbabago ng commodity fee: 1) upang kumuha ng sapat na kita upang masakop ang lahat ng gastos ng pagkaloob ng serbisyo, habang nagpapanatili ng sapat na pinansiyal na lakas para sa Utilidad ng Tubig at; 2) upang magpadala ng senyas ng presyo na ginagantimpalaan ang mga gumagamit na kaunting tubig, habang nagpapataw ng matataas na presyo sa malalakas gumamit upang himukin ang konserbasyon.

Ang iniaatas na kita ng Utilidad ng Tubig ay nagdidikta ng pangkalahatang pagtaas ng presyo na 7.25% sa 2014 at 7.5% sa 2015. Ang mga bill ng indibidwal na parokyano ay mag-iiba mula sa mga pinakamahirang gumamit na makakakita ng bahagyang pangkalahatang pagtaas sa kanilang kabuuang bill hanggang sa average at malakas na gumamit na makakakita ng pagtaas sa kanilang kabuuang bill.

Ang Lunsod ay nagmumungkahi ng isang apat-na-baitang na istruktura para sa mga parokyano na nasa Pang-isang Pamilyang Tirahan upang palitan ang mga kasalukuyang tatlong-baitang na istruktura. Ang bawat baitang

ay sinusukat sa hundred cubic fee (HCF). Ang isang HCF ng tubig ay humigit-kumulang na 748 galon. Gaya ng inilalarawan ng talahanayan sa ibaba, ang presyo ng unang baitang ay inilalapat sa paggamit ng tubig na hanggang 4 HCF kada buwan; ang presyo ng ikalawang baitang ay inilalapat sa lahat ng tubig na ginamit mula 5 HCF hanggang 12 HCF kada buwan; ang presyo ng ikatlo, na baitang ay inilalapat sa lahat ng tubig na ginamit mula 13 HCF hanggang 18 HCF; at ang presyo ng ikaapat na baitang ay inilalapat sa lahat ng tubig na ginamit na higit sa 18 HCF kada buwan.

Mula noong huling kaso ng presyo noong 2007 ng Utilidad ng Tubig, ang Southern California ay nakaranas ng matitinding pagkatuyo. Bilang resulta, ang kamalayan ng mamimili tungkol sa pangangailangan na magkonserba ng tubig ay napakataas. Dagdag dito, ang nadagdagang paggamit ng mga

aparato na episyente sa tubig (mga palikuran, dishwasher, washer, atbp.) ay nakatulong sa mga parokyano na magkonserba. Upang magkaloob ng insentibo para sa mga nagkokonserba, ang iminumungkahing istruktura ng presyo para sa mga parokyanong nasa Pang-isang Pamilyang Tirahan ngayon ay may kasamang ikaapat na baitang. Itong bagong baitang ay pumapalit sa kasalukuyang Baitang 1 at mas maliit. Ang apat na yunit ng tubig na kasama sa Tier 1 ay may presyong nasa pinakamababa dahil ito ay kumakatawan sa pinakamurang pinagkukunan ng tubig ng Lunsod – lokal na panustos. Bilang karagdagan sa lumalawak na bilang ng mga baitang, ang iminumungkahing istruktura ay nag-aakma rin sa pagkakaiba ng presyo sa pagitan ng mga baitang upang sumalamin nang mas tama sa mga gastos para sa bawat baitang.

Klase	Kasalukuyang Buwanang mga Baitang [*]		Commodity Kasalukuyang Presyo	Iminumungkahing Buwanang mga Baitang [*]		Commodity na Iminumungkahi	
	Mula	Hanggang		Mula	Hanggang	1/1/2014	1/1/2015
Isang Pamilya	hcf	hcf	\$/hcf	hcf	hcf	\$/hcf	\$/hcf
	0	7	3.61	0	4	3.64	3.91
	8	14	3.92	5	12	4.08	4.38
Maraming Pamilya							
			4.40	13	18	5.82	6.26
				19+		8.19	8.80
Maraming Pamilya			3.92			4.34	4.67
Di Tirahan			3.76			4.17	4.49
Pansamantalang Konstruksiyon			4.01			4.62	4.97
Patubig			4.01			4.62	4.97

[*] Ang minsan sa bawat dalawang buwan na mga baitang ay dalawang beses na buwanang pataan

Halimbawa: Kapag isinama sa bagong mga Base Fee, ang bagong Commodity Fee ay mabisang magtataas ng kabuuang mga presyo ng tubig para sa isang parokyano na nasa Pang-isang Pamilyang Tirahan gamit ang 12 HCF/buwan ng humigit-kumulang na 2.9% (\$1.89 kada buwan). Ang eksaktong halaga ng pagtaas ay mag-iiba sa mga parokyano dahil sa iba't ibang mga antas ng paggamit ng tubig.

Pangkaraniwang Kalkulasyon ng Bill para sa 12 HCF/Buwan			
	Kasalukuyang Bill	Iminumungkahi 1/1/2014	Iminumungkahi 1/1/2015
Pang-isang Pamilya ¾" metro	\$64.20	\$66.09	\$70.99
Pagbabago		2.89%	7.50%

TALA: Mangyaring tandaan na ang Lunsod ay sumisingil sa mga parokyanong nasa Pang-isang Pamilyang Tirahan minsan sa bawat dalawang buwan. Ito ay nangangahulugang ang bawat bill na natatanggap ng mga parokyanong ito ay kabilang ang mga singil para sa dalawang buwan ng serbisyo.

Iminumungkahing mga Pag-aakma ng Presyo sa Serbisyon Kaugnay ng Sunog

Ang pribadong mga serbisyo sa proteksiyon laban sa sunog ay inilalaan sa paraang katulad ng ibang mga serbisyo. Halimbawa, ang isang bahagi ng panustos na tubig ay inilalaan sa proteksiyon laban sa sunog para sa aktuwal na pagpatay ng sunog at mga ehersisyo sa pagsasanay ng pagpatay ng sunog. Ang proteksiyon laban sa sunog ay nangangailangan na ang sistema ng Tubig ay may kapasidad na magkaloob ng maraming tubig para sa maiikling panahon sa sapat na puwersa. Ang iminumungkahing istruktura ng presyo para sa proteksiyon laban sa sunog ay katulad ng ginagamit sa pagbuo ng base fee, pero ang isang sukat ng koneksiyon at proporsiyon ng halaga ay ginagamit sa halip ng mga haydraulikong kapasidad at ang 1.5" koneksiyon ay nagsisilbing pamantayan. Ang talahanayan sa kanan ay naglalarawan ng iminumungkahing mga pag-aakma.

Ang pinakakaraniwang parokyano ng Serbisyo sa Sunog ay may 6" na koneksiyon, na magreresulta sa kanilang buwanang bill mula \$25.05 patungo sa \$27.23, o isang pagtaas na \$2.18 o 8.7% simula sa Enero 1, 2014.

TALA: Isang maliit na porsiyento lamang ng mga parokyano ang may singil sa serbisyo sa sunog sa kanilang bill.

Sukat ng Linya ng Sunog	Proteksiyon Laban sa Sunog		
	Mga Kasalukuyang Presyo (\$/buwanan)	Iminumungkahi 1/1/2014 (\$/buwanan)	Iminumungkahi 1/1/2015 (\$/buwanan)
5/8 at 3/4 na pulgada			
1 pulgada	6.26	2.40	2.58
1 1/2 pulgada	6.26	2.40	2.58
2 pulgada	8.35	3.73	4.00
3 pulgada	12.53	14.42	15.50
4 na pulgada	16.70	18.44	19.82
6 na pulgada	25.05	27.23	29.27
8 pulgada	33.40	38.46	41.34
10 pulgada	41.75	49.68	53.41
12 pulgada	50.10	59.29	63.74
16 na pulgada	66.80	96.14	103.35



Quality ■ Value ■ Reliability ■ Customer Service
For all of San Diego...every day!



Presentation to the Committee on the Environment

Cost of Service Study

Proposed Changes to Potable and Recycled Water Rates and Structure

Halla Razak, Director
City of San Diego Public Utilities

August 5, 2015



Public Utilities Department



Excellence in Serving our Customers

Provide services to the 8th largest US city and surrounding area

1.4M water & 2.5M sewer customers

Award Winning and Efficient Operations



Water Supply

Reliance on imported water

State Drought Mandate and Enforcement

Investing in Pure Water



Finances

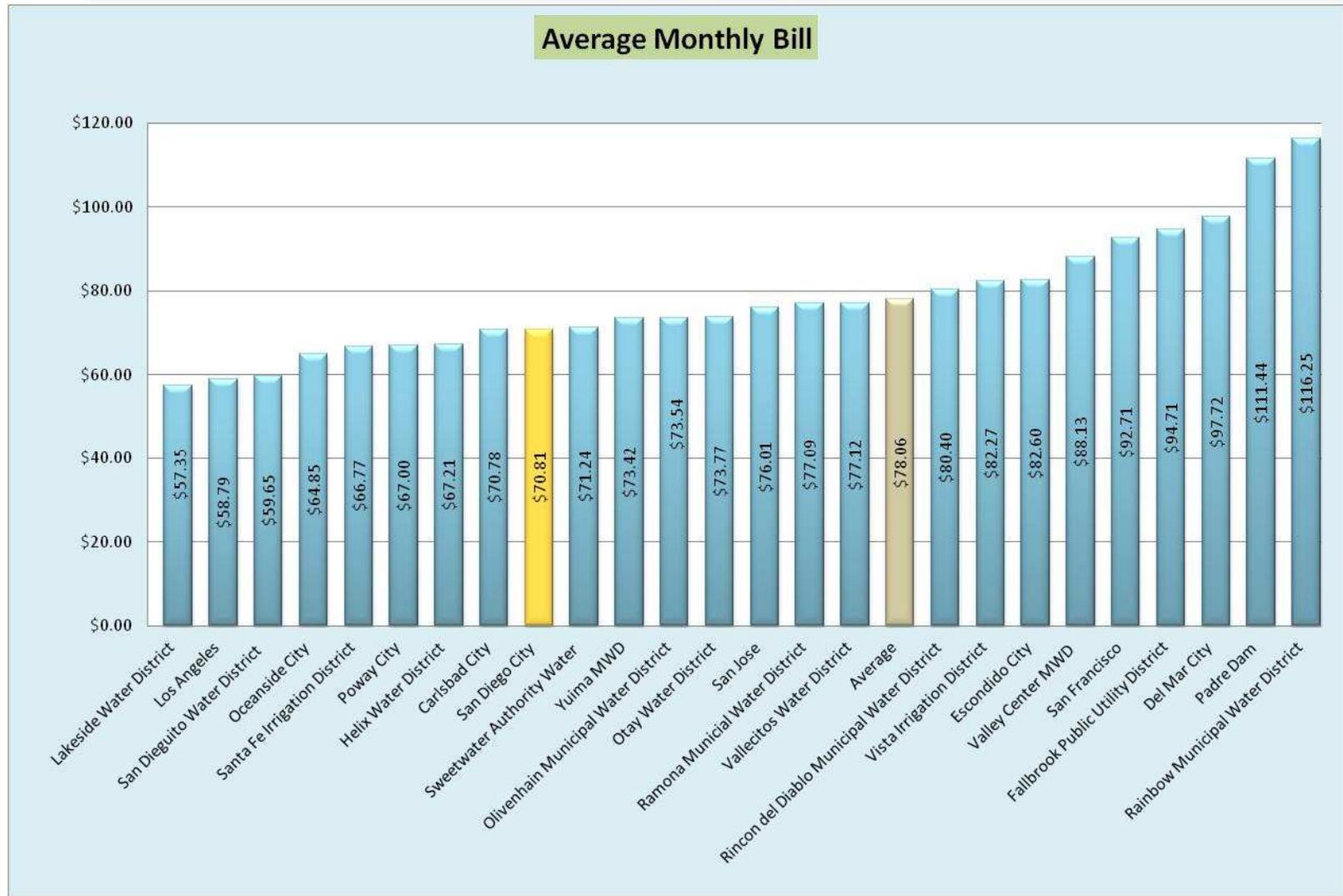
Water Fund Budget

Cost of Service Study Process

Proposed Rates

Public Outreach

Water Rate Comparison





Excellence in Serving Our Customers: Management for Value

Capital Investments

- Use of Grants and State Revolving Fund Loans
 - Saved **\$177,600,000** for 2010-2015
- Asset management / condition assessment of facilities
 - Saved **\$50,000,000** for transmission main replacement
- Investment in infrastructure continues
 - Water main breaks reduced by **43%** since FY 2013
 - Wastewater spills reduced by **24%** since FY 2013





Excellence in Serving Our Customers: Management for Value

Streamlining Operations

- No rate increase for operating costs since 2012
- Permanent staff reductions **329.78** positions since 2007 - 2016
- Energy use **\$12,100,000** annual savings for energy generation
- Efficiency savings **\$1,604,200** in the past three years





Excellence in Serving Our Customers: Management for Value

- Efficiency and Optimization Study Savings
 - *Independent consultant CH2M Hill initial observations:*
 - *“Facilities and systems are effectively operated and maintained”*
 - *“Staff demonstrates technical and managerial skills”*
 - *“Meeting or exceeding regulatory compliance”*
 - *“Engaged in continuous improvement”*



Excellence in Serving our Customers: Award–Winning Projects and Programs

- Pure Water San Diego
 - U.S. Water Prize
 - CA Association of Sanitation Agencies
 - Public Outreach
- Wastewater Collections
 - California Water Environment Association
 - Large Collection System of the Year
- Alvarado Water Treatment Plant
 - American Society of Civil Engineers
 - Outstanding Civil Engineering Achievement Award



Water Supply:

1.) Reliance on Imported Water

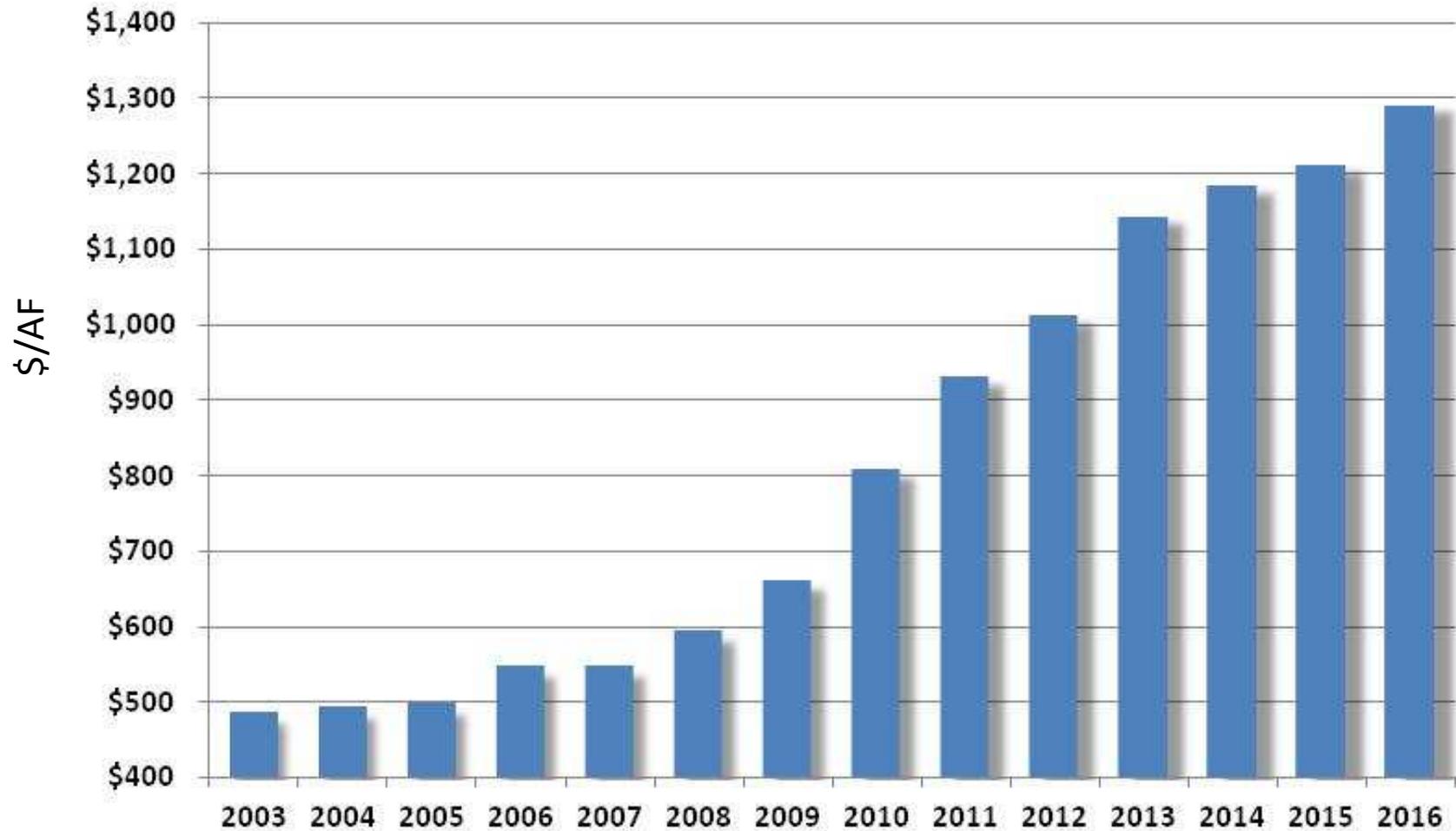
- Metropolitan Water District (MWD) and San Diego County Water Authority (CWA) price increases:
 - Imported water costs
 - Carlsbad desalination plant completion





Water Supply:

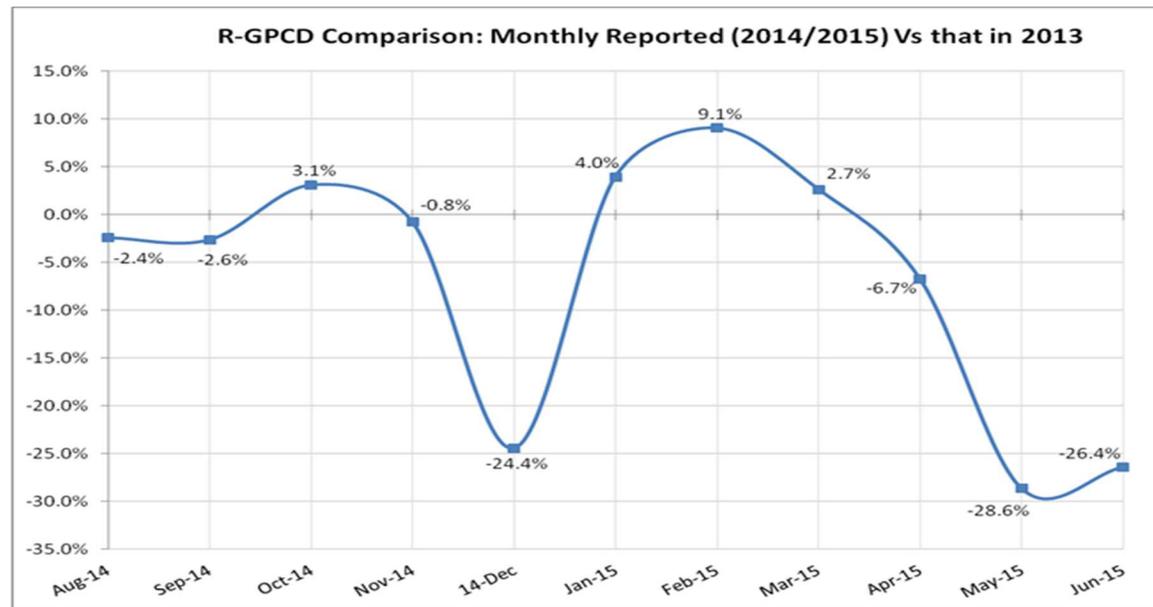
Increasing CWA Water Costs



Water Supply:

2.) State Mandated Water Restrictions

- State mandated 16% cut in water use
 - Mandatory enforcement and reporting per State Water Board
 - Limit outdoor irrigation – 2 days a week, 5 minutes per station



Water Supply:

3.) Pure Water - A New Water Resource

- The Pure Water Program is a phased, multi-year program that:
 - Uses proven technology to produce a safe, sustainable and high quality water supply
 - Is drought-proof and locally-controlled to significantly improve our water reliability



- Is a cost-effective investment for San Diego's future water needs

Water Supply:

Pure Water - A New Water Resource

Initial
Phase
2021

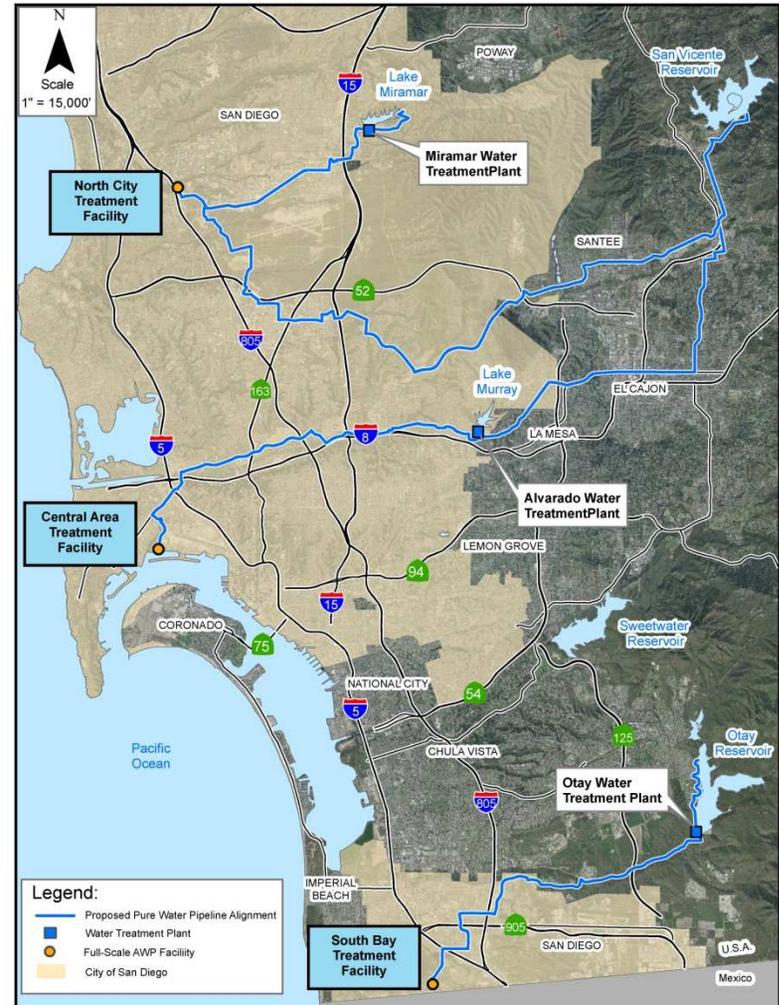
Up to 30 MGD

Recycled water will be purified at North City Plant and delivered to San Vicente or Miramar Reservoir

Long
Term
2035

83 MGD

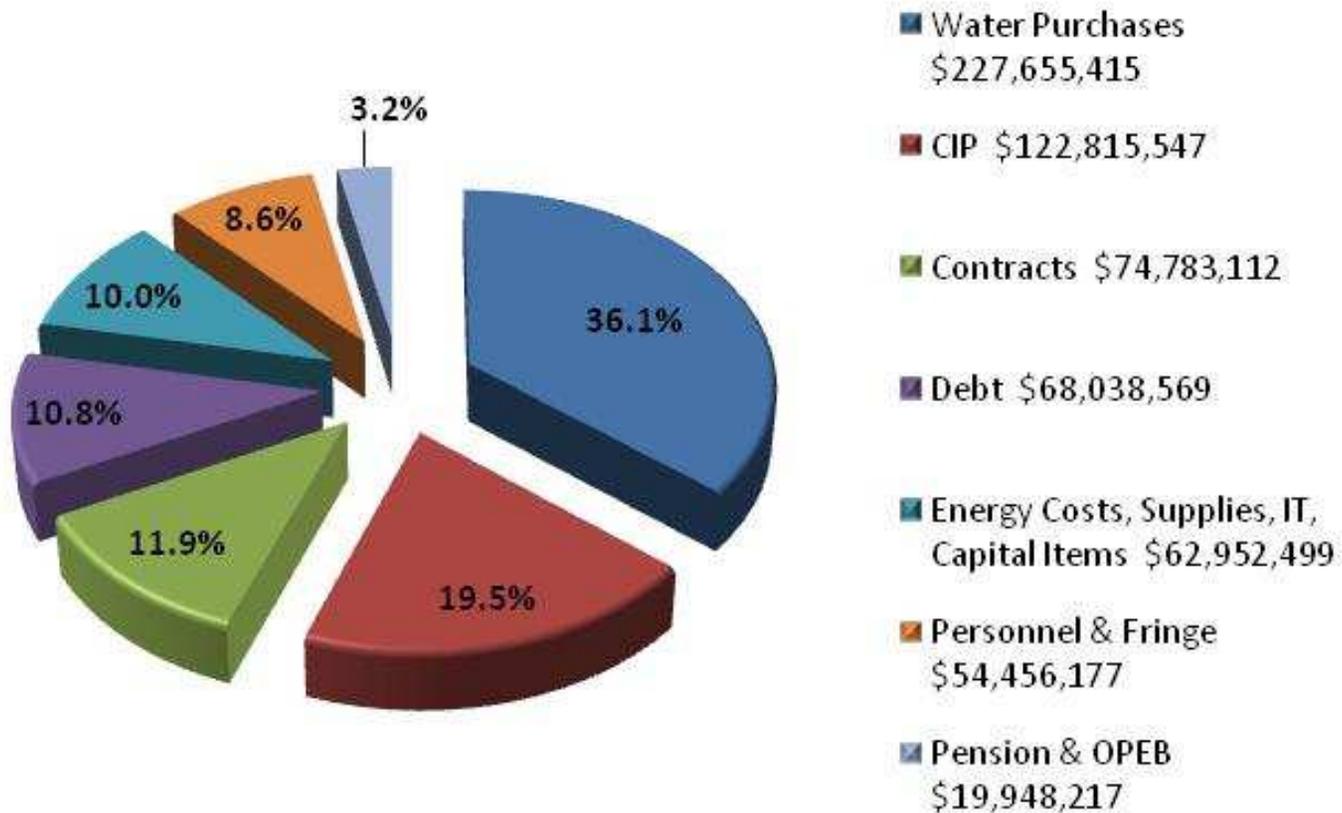
Recycled water will be purified at the Central Area Treatment Facility and South Bay Plant and delivered to San Vicente and Otay Reservoirs



C:\16-17-15\Water Supply3.mxd

Finances:

Total Water FY 2016 Budget \$630,649,536



Cost of Service Process

- Legal Requirements
- Financial Targets
 - Contractual debt coverage ratio
 - Cash balances
 - Reserves
- Rate Setting Drivers
 - Increased imported water costs
 - Investing in Water Reliability:
 - Carlsbad Desalination
 - Pure Water
 - Aging infrastructure and investment in efficiency
 - State drought mandate
 - Use of \$32M in Reserves

Proposed Water Rate Increases

Rate Increase Driver	2016 January	2016 July	2017 July	2018 July	2019 July
Increased imported water cost Carlsbad Desalination, Pure Water, Aging Infrastructure, Smart Meters, State drought mandate, Reserve Requirement	9.8%	6.9%	6.9%	5.0%	7.0%
Department Operations	0.0%	0.0%	0.0%	0.0%	0.0%
TOTAL INCREASE	9.8%	6.9%	6.9%	5.0%	7.0%

◆ Conduct Review of Funds

The County Water Authority (CWA) Rate Increase that must be passed through to the City is projected to be 2.5% in 2017 and 2018, and 3.0% in 2019. The City will only pass through to its customers the actual CWA pass through rate increase impact between 2.5% and 7%. The CWA pass through will not exceed 7% through 2019.

Use of \$32M from the Rate Stabilization Reserve (January 2016).

Water Consumption & Meter Charges

Fixed Charge / Month

Meter Size	Current Rates	Proposed FY 2016
5/8", 3/4"	\$20.31	\$22.26
1"	\$27.51	\$29.50
1.5"	\$43.96	\$46.04
2"	\$64.53	\$66.72
3"	\$112.86	\$115.32
4"	\$181.75	\$184.59
6"	\$352.44	\$356.23
8"	\$558.10	\$563.03
10"	\$798.72	\$804.98
12"	\$1,483.55	\$1,493.60
16"	\$2,580.72	\$2,596.85

Commodity Charge (per HCF)

Customer Class	Current Rates	Proposed FY 2016
Single Family		
Tier 1 (0-4 HCF)	\$3.90	\$4.24
Tier 2 (5-12 HCF)	\$4.36	\$4.75
Tier 3 (13-18 HCF)	\$6.23	\$6.79
Tier 4 (19+ HCF)	\$8.77	\$9.55
Other Classes		
Multi Family	\$4.65	\$5.12
Commercial/Industrial	\$4.47	\$5.02
Construction/Irrigation	\$4.95	\$5.67

Water sales are 80% variable (commodity) and 20% fixed (meter)

Single Family Residential Bill Impact

Customer Class	Monthly Bills - Proposed Rates	
	Existing Rates	FY 2016
	(\$)	(\$)
4hcf	\$ 35.89	\$ 39.24
7hcf	\$ 48.99	\$ 53.50
12hcf	\$ 70.81	\$ 77.27
24hcf	\$ 160.81	\$ 175.32

Other Customer Classes – Bill Impacts

Customer Class	Monthly Bills - Proposed Rates	
	Existing Rates	FY 2016
	(\$)	(\$)
Multi Family (2" meter, 100 hcf)	\$ 529.53	\$ 578.97
Commercial/Industrial		
3/4" meter, 100 hcf	\$ 467.31	\$ 523.76
2" meter, 300 hcf	\$ 1,405.53	\$ 1,571.23
Irrigation / Temp Construction (2" meter, 300 hcf)	\$ 1,548.63	\$ 1,767.72

San Diego Tap Water Cost Comparison

PER GALLON COST (JULY 2015)		
Milk	\$	3.49
Coffee	\$	10.67
Soda	\$	3.99
Boxed Wine	\$	11.36
Vended Water	\$	0.35
Store Brand Water	\$	1.09
Name Brand Water	\$	1.49
San Diego Tap Water* - DELIVERED	\$	0.009

* Based on average monthly bill at 12 HCF

Recycled Water System

- North City Water Reclamation Plant (NCWRP)
- South Bay Water Reclamation Plant (SBWRP)
- Associated Distribution System
- Approximately 600 connections
- 3 Wholesale Customers with recycled water purchase agreements

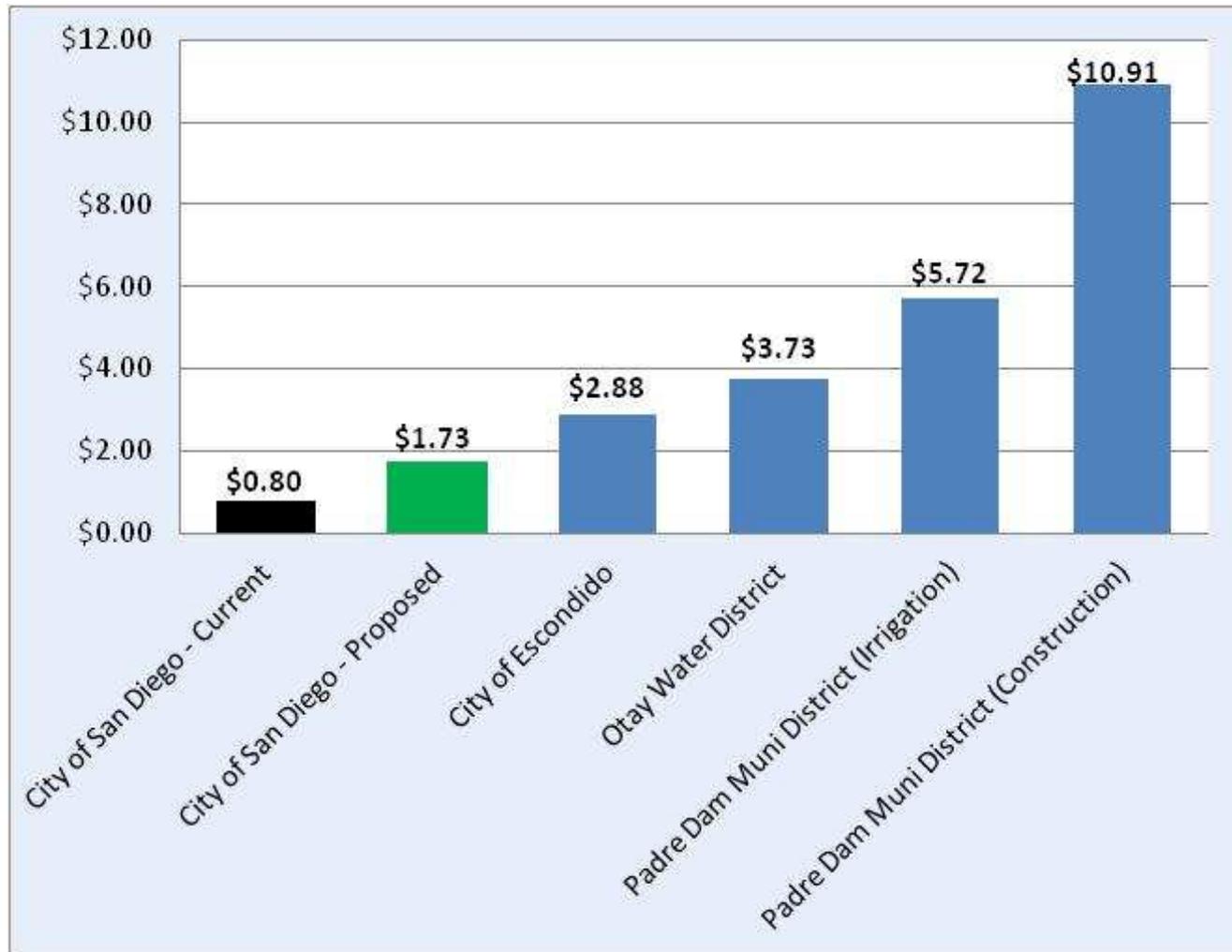
Modified Cost of Service

- Financial Sufficiency – The recycled water program should be able to cover its own costs through revenue collected from its own fees and charges
- Considers only costs related to the production and distribution of recycled water
 - O&M and capital expenses for the distribution system and tertiary (recycled water) component of the wastewater treatment system
 - Debt service
- Reduces revenue requirements using offsetting revenues
 - MWD/CWA credits
 - Other revenues

Recycled Water

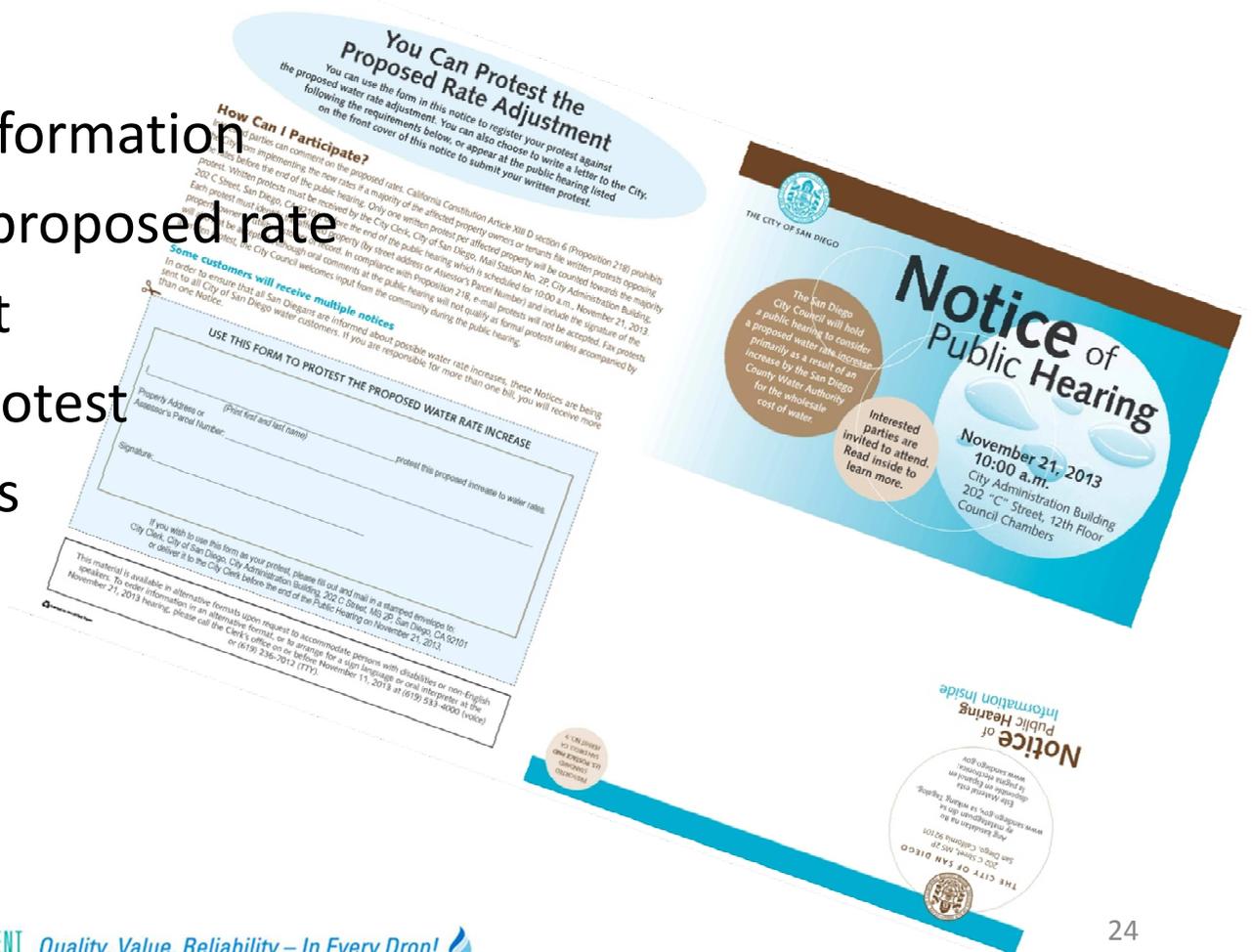
Timeline	Commodity Rate (\$/HCF)
Existing Recycled Rate	\$0.80
Proposed Recycled Rate	\$1.73
Proposed Potable Irrigation Rate	\$5.67

Recycled Water Rate Comparison



Proposition 218 – Notice of Public Hearing

- Every customer will be mailed a Notice of Public Hearing
- Detailed information about the proposed rate adjustment
- Includes protest instructions





Proposition 218 – Know Your Rights

- California Constitution prohibits implementing the new rates if a majority of the affected property owners or tenants file written protests opposing the rates
- Each protest must identify the affected property and include the signature of the property owner or utility customer of record
- By California law, only written protests allowed
 - No email or faxed protests



Proposed Rate Increase Timeline

Date	Activity
July 20, 2015	Independent Rates Oversight Committee Approval on Potable Rates Proposal
July 2015	Council Briefings
July 2015	Stakeholder Outreach
August 5, 2015	Environment Committee
September 15, 2015	Council sets public hearing
September 2015	Mail public notices
September - November	Community and Stakeholder Outreach
November 17, 2015	Public Hearing at City Council
January 1, 2016	Rate increase effective

Where to find more information

- Visit:
www.sandiego.gov/water/

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