WATER AND RECYCLED WATER RATE STUDY REPORT

Elsinore Valley Municipal Water District

July 13, 2015 FINAL REPORT

Prepared by:

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July 13, 2015

Margie Armstrong
Director of Finance
Elsinore Valley Municipal Water District
31315 Chaney Street
Lake Elsinore, CA 92531

Subject: Water and Recycled Water Rate Study Report

Dear Ms. Armstrong,

Raftelis Financial Consultants, Inc. (RFC) is pleased to provide this Water and Recycled Rate Study Report (Report) for the Elsinore Valley Municipal Water District (District) to develop water and recycled water rates for the Elsinore Water Division with a technically sound methodology, which meet the requirements of Proposition 218. In particular, this Report contains thorough detail on the following:

1. Legal framework surrounding Proposition 218, particularly with respect to potable water and recycled water being provided by the same agency.
2. Revisions to water budget block definitions
3. Recommended policy revisions
4. Equitable cost of service based water and recycled water commodity rates and monthly fixed charges that meet the Proposition 218 requirements.

The Report summarizes the key findings and results related to the revision of the water budget rate structures, development of monthly fixed charges, and commodity charges for both the potable water and recycled water enterprises.

It has been a pleasure working with you, and we thank you and the District staff for the support provided during the course of this study.

Sincerely,

Raftelis Financial Consultants, Inc.

Sanjay Gaur
Vice President

Khanh Phan
Senior Consultant

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Glossary

AF – Acre Feet
AVP – Auld Valley Pipeline
AWWA – American Water Works Association
CCF – Hundred Cubic Feet
CY – Calendar Year
DF – Drought Factors
EMU – Equivalent Meter Units
EMWD – Eastern Municipal Water District
ET – EvapoTranspiration
ETAF – EvapoTranspiration Adjustment Factor
EVMWD – Elsinore Valley Municipal Water District
FY – Fiscal Year
GPCD – Gallons per Capita per Day
IWB – Indoor Water Budget
MWD – Metropolitan Water District of Southern California
O&M – Operations and Maintenance
OWB – Outdoor Water Budget
RCWD – Rancho California Water District
RFC – Raftelis Financial Consultants
RW – Recycled Water
SQ FT – Square Feet
TVP – Temescal Valley Pipeline
WB – Water Budget
WMWD – Western Municipal Water District

1 Background of the Study

1.1 Overview of the District's Water and Recycled Water Utilities

Elsinore Valley Municipal Water District (EVMWD or District) provides public water service, wastewater treatment, and water recycling services to over 134,000 customers over its 97 square miles of service area within Riverside County and a portion of Orange County. The District's service area includes the communities of Lake Elsinore, Canyon Lake, Murrieta, Wildomar and the unincorporated areas of The Farm, Lakeland Village, Cleveland Ridge, Rancho Capistrano, El Cariso Village, Horsethief Canyon, Sedco, and Temescal Canyon. Wholesale service is also provided to The Farm Mutual Water Company, referred to as Inter-Agency water sales.

The District is comprised of two main water service areas — the Elsinore Water Division and the Temescal Water Division. The purpose of this Study is to develop cost of service based rates for the water and recycled water enterprises in the Elsinore Water Division. The Temescal Water Division is a separate enterprise and is not considered in this Study. A summary of the District's water and recycled water accounts in the Elsinore Water Division is detailed in Table 1-1 below.

Table 1-1: Summary of District Accounts for Elsinore Water Division

Service	Number of Connections
Water Service	41,538
Recycled Water	96

As a member agency of the Metropolitan Water District of Southern California (MWD) via Western Municipal Water District (WMWD), the District relies on imported water for approximately 70% of its potable water supply needs. The remaining demand is met by local surface water from Canyon Lake and groundwater from the Elsinore Groundwater Basin.

Like many water agencies across Southern California, the District has been faced with the challenge of meeting demand despite dwindling water supplies and increased imported water costs. In order to promote conservation, the District adopted a water budget rate structure for all residential and recycled water accounts in July of 2009, which was most recently updated in July 2014 and is presently in effect. A water budget rate structure is a monthly amount of water allocated to each customer based on the customer's efficient indoor and outdoor needs. A uniform rate is used for commercial and Inter-Agency customers. The current rates, detailed in Section 3.3 of this Report, are effective through June 30, 2015.

1.2 Objectives of the Study

Proposition 218 requires a nexus and proportionality between the fees charged for a service and the cost to provide that service.

In December of 2013, the District retained Raftelis Financial Consultants (RFC) to develop cost-of-service-based rates for its Water and Recycled Water utilities. This Report summarizes the key findings and results for the Study.
The major objectives of the study include the following:

1. Review water budget block definitions to further promoting conservation;
2. Develop a framework to fund a portion of RW costs from potable water services;
3. Conduct cost-of-service analyses for the Water and Recycled Water enterprises; and
4. Develop equitable cost of service water and recycled water rates that meet Proposition 218 requirements.

1.3 Key Information Used in the Study

The Study utilized the following key information provided by the District

1. 2014 Consumption Data (calendar year) for all water and recycled accounts served within the Elsinore Division service area
2. FY 2016 Operating Budget for Funds 118 (Water) and 130 (Recycled Water)
3. List of District Assets as of June 30, 2014
4. Current rates and rate structure for Elsinore Division water services and Recycled Water (RW) services

2 Legal Framework and Rate Setting Methodology

This section of the report describes the legal framework that was considered in the development of the rates to ensure that the calculated cost of service rates provide a fair and equitable allocation of costs to the different customer classes.

2.1 Legal Framework

2.1.1.1 CONSTITUTIONAL MANDATES AND STATUTORY AUTHORITY

Article XIII D, Section 6 (Proposition 218) and Article X, Section 2 of the California Constitution govern the principles applicable to this Rate Study. This Rate Study equitably implements and harmonizes these constitutional mandates in concert with the authority and principles set forth in Water Code Section 370 et seq. which govern Allocation-Based Conservation Water Pricing (commonly referred to as "Water Budget Rate Structure").

2.1.1.2 CALIFORNIA CONSTITUTION - ARTICLE X, SECTION 2

Article X, Section 2 of the California Constitution provides as follows:

> "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."

As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation which this Rate Study achieves.

2.1.1.3 CALIFORNIA CONSTITUTION - ARTICLE XIII D, SECTION 6 (Proposition 218)

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements for fairness as they relate to public water service are as follows:

1. Water rates shall not exceed the funds required to provide the service.
2. Revenues derived by the charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.

4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.

2.1.1.4 STATUTORY AUTHORITY - GOVERNMENT CODE SECTION370 ET SEQ. (Allocation-Based Conservation Water Pricing)

In 2000, the California Legislature (AB 2882), consistent with the above-referenced constitutional provisions, adopted a body of law entitled "Allocation-Based Conservation Water Pricing" (Water Code Section 370 et seq).

Water Code Section 370 provides in part as follows:
"The Legislature hereby finds and declares all of the following:
(a) The use of allocation-based conservation water pricing by public entities that sell and distribute water is one effective means by which waste or unreasonable use of water can be prevented and water can be saved in the interest of the people and for the public welfare, within the contemplation of Section 2 of Article X of the California Constitution.
(b) It is in the best interest of the people of California to encourage public entities to voluntarily use allocation-based conservation water pricing, tailored to local needs and conditions, as a means of increasing efficient uses of water, and further discouraging wasteful or unreasonable use of water under both normal and dry-year hydrologic conditions."
Water Code Section 372 provides as follows:

> "(a) A public entity may employ allocation-based conservation water pricing that meets all of the following criteria.
>
> (1) Billing is based on metered water use.
>
> (2) A basic use allocation is established for each customer account that provides a reasonable amount of water for the customer's needs and property characteristics. Factors used to determine the basic use allocation may include, but are not limited to the number of occupants, the type or classification of use, the size of lot or irrigated area, and the local climate data for the billing period. Nothing in this chapter prohibits a customer of the public entity from challenging whether the basic use allocation established for that customer's account is reasonable under the circumstances. Nothing in this chapter is intended to permit public entities to limit the use of property through the establishment of a basic use allocation.
>
> (3) A basic charge is imposed for all water used within the customer's basic use allocation, except that at the option of the public entity, a lower rate may be applied to any portion of the basic use

allocation that the public entity has determined to represent superior or more than reasonable conservation efforts.

(4) A conservation charge shall be imposed on all increments of water use in excess of the basic use allocation. The increments may be fixed or may be determined on a percentage or any other basis, without limitation on the number of increments, or any requirement that the increments or conservation charges be sized, or ascend uniformly, or in a specified relationship. The volumetric prices for the lowest through the highest priced increments shall be established in an ascending relationship that is economically structured to encourage conservation and reduce the inefficient use of water, consistent with Section 2 of Article X of the California Constitution.

(b) ---
(1) Except as specified in subdivision (a), the design of an allocation-based conservation pricing rate structure shall be determined in the discretion of the public entity.

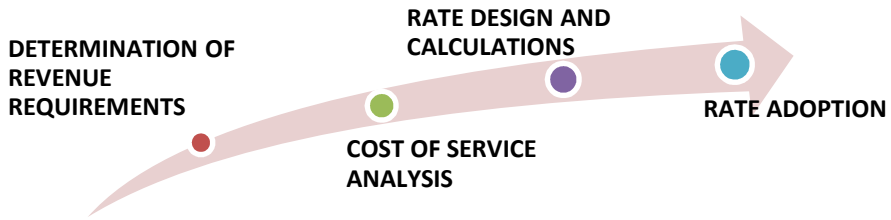
(2) The public entity may impose meter charges or other fixed charges to recover fixed costs of water service in addition to the allocation-based conservation pricing rate structure.

(c) A public entity may use one or more allocation-based conservation water pricing structures for any class of municipal or other service that the public entity provides."

As noted in the referenced statutes, an "Allocation-Based Conservation Water Pricing Rate Structure" is a form of increasing rate block structure where the amount of water within the first block or blocks is based on the estimated, efficient water needs of the individual customer. Water-budget rate structures differ from other metered water rate designs in two key ways. First, the blocks are established based on water budgets that represent varying levels of each customer's efficient water use. Second, water-budget rates require the public agency to set specific standards for what is, and what is not, considered efficient water use for an individual customer.

This Rate Study, in conjunction with EVMWD's findings and determinations for individual customers establishes a standard for efficient usage and then establishes a budget for each individual customer. The budget for each customer defines how much water usage is considered efficient. Customers with usage above their efficient usage budget pay a higher rate for their "inefficient' or wasteful" usage.

2.2 Cost-Based Rate Setting Methodology



As stated in the AWWA Manual M1 (M1 Manual), the AWWA Rates and Charges Subcommittee agrees with the Proposition 218 requirement that "the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." To develop utility rates that comply with Proposition 218 and industry standards while meeting other emerging goals and objectives of the utility, there are four major steps:

1. **DETERMINATION OF REVENUE REQUIREMENT**. The rate-making process starts with the determination of future revenue requirements to sufficiently fund the utility's operation and maintenance (O&M), capital replacement and refurbishment (R&R), capital improvement and perpetuation of the system, and to ensure preservation of the utility's financial integrity. The basic revenue requirements of a utility include O&M expenses, debt service payments, contributions to specified reserves, and the cost of capital expenditures that are not debt financed.
2. **COST OF SERVICE ANALYSIS**. The annual costs of providing water services, determined in the financial plan development, are allocated among the customers commensurate with their service requirements. In this step, costs are identified and allocated to functional cost components and distributed to respective customer classes according to the industry standards provided in the M1 Manual. California Government Code Section 54999 mandates agencies to conduct a thorough cost of service analysis every ten years in determining the utility rates.
3. **RATE DESIGN and CALCULATIONS**. Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as conservation, affordability for essential needs, revenue stability, etc., and should work as a public information tool in communicating these objectives to customers.
4. **RATE ADOPTION**. In the last step of the rate-making process, the results of the analyses are documented in a Study Report to help educate the public about the proposed changes, the rationale and justifications behind the changes and their anticipated financial impacts in layman terms. At least 45 days after sending out the public notices, at a public hearing, the agency shall consider all written protests against the proposed rates. If there is no majority protest, the agency can officially adopt the new rates.

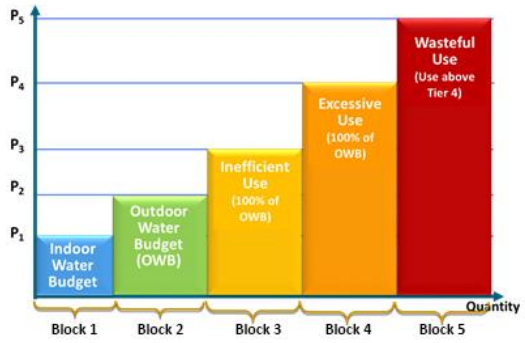
3 Water Budget, Block Definitions, and Current Rates

The District has implemented a water budget rate structure to incentivize conservation and use water efficiently for both residential, landscape irrigation water customers and all recycled water customers since 2009, with the most recent update in July 2014. The description of the allocations to individual customers and the development of water budgets is described here for completeness of this report.

3.1 Water Budget Definitions

The American Water Works Association Journal defines a water budget as "the quantity of water required for an efficient level of water use by that customer" *(Source: American Water Works Association Journal, May 2008, Volume 100, Number 5).* Therefore, each customer has his or her own allocation or water budget as shown in the following figures. The District's potable water and recycled water customers both use water budget rate structures. Figure 3-1 shows how the block breaks are currently set for the District's water budget customers. Block 1 is defined by the allotment for indoor use and Block 2 is defined by the allotment for efficient outdoor use. Blocks 3 and 4 are each set to 100% of the Outdoor Water Budget (OWB). For example, if the Block 2 OWB was 12 units, Block 3 would be 12 units, and Block 4 would be an additional 12 units. Any use beyond Block 4 is considered wasteful and falls into Block 5.

Figure 3-1: Current Water Budget Blocks

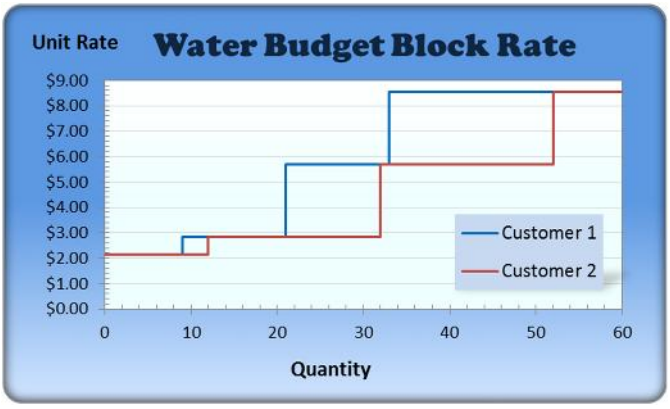


It is worth noting that water budget rate structures are customized for each customer, which result in different block breaks for different customers. For example, as illustrated by Figure 3-2[1], the first 9 units consumed by Customer 1 is charged at the Block 1 rate, whereas Customer 2 has 12 units at the Block 1 rate for indoor use. The next 12 units (10 – 21 units) consumed by Customer 1 are reserved for outdoor use, which is charged at Block 2 rate, and usage from 22 – 32 units falls into Block 3[2]. Any usage exceeding 33 units will be deemed excessive and charged at the Block 4 Rate. Similarly, for Customer 2, Block 2 spans from 13 – 32 units, Block 3 spans from 33 – 51 units, and usage exceeding 52 units will be charged at the

[1] For illustrative purpose only, not actual rates of the District
[2] Block 3 = 100% of Outdoor Water Budget (OWB)

Block 4 Rate. Customer 2, with a larger indoor and outdoor water budget (or allotment), represents a residential customer with a larger family and bigger irrigated landscape area than Customer 1.

Figure 3-2: Customized Water Budget Blocks



3.2 Water Budget Development Methodology

Indoor Water Budget

The indoor water budget (IWB) is determined by a customer's household size and a standard consumption per person. The proposed IWB formula is as follows:

$$IWB = \frac{GPCD * Household Size * Dwelling Units * Days of Service * DF_{indoor}}{748} + V_{indoor}$$

where

- GPCD – Gallons per capita per day.
- Household Size – Number of residents per dwelling unit.
- Dwelling Units – The number of dwelling units served by the meter. By way of example, a single family residence is one dwelling unit.
- Days of Service – The number of days of service varies with each billing cycle for each customer. The actual number of days of service will be applied to calculate the indoor water budget for each billing cycle.
- DF_{indoor} – Indoor drought factor. The percentage of indoor water budget allotted during drought conditions. The drought factor is determined based on the degree of water shortage and is subject to the approval of the District's Board of Directors. The indoor drought factor is currently set at 100 percent.
- V_{indoor} – Indoor variance. The additional water allotment to be granted for extenuating circumstances is subject to the District's approval or verification as outlined in the District's variance program. Variances may be requested by submitting a "Variance/Adjustment Request Form" found on the District's website.

- 748 is the conversion unit from gallons to a billing unit of one hundred cubic feet (ccf).

Outdoor Water Budget

The outdoor water budget (OWB) is determined by three main variables: irrigable landscape area, weather data and an evapotranspiration (ET) Adjustment Factor. The irrigable landscape area is measured as the square footage of landscape surface on a customer's property. The weather data is based on the reference evapotranspiration (ET_0), which is the amount of water loss to the atmosphere over a given time period at given specific atmospheric conditions. ET_0 is the amount of water (in inches of water) needed for a hypothetical reference crop to maintain its health and appearance. The ET Adjustment Factor (ETAF) is a coefficient that adjusts ET_0 values based on plant factor and irrigation system efficiency.

The formula to calculate an outdoor water budget is as follows:

$$OWB = \left(\frac{\text{Landscape Area} * ET_0 * ETAF}{1200} + V_{outdoor} \right) * DF_{outdoor}$$

where

- ET_0 is measured in inches of water during the billing period based on a ten year rolling average ET_o from Winchester Weather Station.

- ETAF (% of ET_0) is set to 60%, which was the metric set by the District since 2009, when the water budget structure was first introduced. The 60% ETAF is equivalent to the standard set for California native and drought friendly plants.

- Landscape Area (or Irrigable Landscape Area) (in square feet) is the measured irrigable landscape area served by a customer's meter.
- $DF_{outdoor}$ – Outdoor drought factor. The percentage of outdoor water budget allotted during drought conditions. The drought factor is determined based on the degree of water shortage and is subject to the approval of the District's Board of Directors. The outdoor drought factor is currently set at 100 percent.
- $V_{outdoor}$ – Outdoor variance. The additional water allotment to be granted for extenuating circumstances is subject to the District's approval or verification as outlined in the variance program. An outdoor variance is subject to outdoor drought factor.
- 1,200 is the conversion unit from inch*ft^2 to billing unit of hundred cubic feet (ccf).

3.3 Existing Water and Recycled Water Rates

The District uses the same monthly meter charge rate schedule for both its potable water and recycled water customers. The meter charge increases with the increase in meter size. Table 3-1 summarizes the monthly services charges for each meter size.

Table 3-1: Monthly Meter Service Charges

Meter Size	Current Rates
3/4-inch	$16.58
1-inch	$28.18
1 1/2-inch	$54.71
2-inch	$87.85
3-inch	$165.76
4-inch	$276.82
6-inch	$551.98
8-inch	$883.49
10-inch	$1,269.71

The District currently uses a five-block water budget rate structure for all residential customers and four block water budget rate structure for landscape irrigation customers[3], as shown in Figure 3-1. Commercial and Institutional customers both pay a uniform rate of $2.92 and $2.85, respectively. Water for Hydrants is $5.69 per unit of potable water; Hydrant water use is water used on construction site that is metered from the terminus of a fire hydrant. The full schedule of potable water rates is presented in Table 3-2 below.

[3] Landscape irrigation customers do not have Block 1 – Indoor Use

Table 3-2: Potable Water Rates

Rate Classification	Effective 7/1/14 Per ccf
Residential / Landscape Irrigation	
Block 1 – Indoor Use	$2.14
Block 2 – Efficient Outdoor Use	$2.85
Block 3 – Inefficient	$5.69
Block 4 – Excessive	$8.54
Block 5 – Wasteful	$11.39
Commercial	$2.92
Institutional	$2.85
Hydrant Water	$5.69
Inter-Agency[4]	$2.71

The Recycled Water (RW) and Landscape Irrigation rate structures use only four blocks, because the indoor use block is not applicable for these two customer classes. The full schedule of recycled water rates is presented in Table 3-3 below.

Table 3-3: Recycled Water Rates

Rate Classification	Effective 7/1/14 $ Per ccf
Recycled / Non-Potable	
Block 1 – Efficient Outdoor Use	$2.14
Block 2 – Inefficient	$2.85
Block 3 – Excessive	$3.56
Block 4 – Wasteful	$4.28

Customers are also charged a power surcharge per ccf to recover the incremental costs of energy required to deliver water to certain areas of the District. The charge depending on which of the three elevation zones a customer is located within, as shown in Table 3-4.

Table 3-4: Power Zone Charges

Zones	$/ ccf
Zone 1	$0.08
Zone 2	$0.21
Zone 3	$0.88

[4] Refers to wholesale water sales to The Farm Mutual Water Company

4 Recommendations

4.1 Revision of Water Budget Factors

As part of the current Study, it is proposed that the two main water budget factors be adjusted to be better aligned with current efficiency standards and follow the benchmark established by SBx7-7. The provisional standard established by SBx7-7 is 55 gallons per capita per day for indoor residential use and the District proposes adoption of this same standard. In addition, it is proposed that the width of Block 3 also be adjusted from the current 100% of the OWB to 30%. This change will reduce the width of Block 3 and provide a greater incentive to reduce wasteful use and to more proportionately allocate the cost of service to those who place greater demands on the water system. These two recommended modifications to the water budget calculation are summarized in Table 4-1 below.

Table 4-1: Recommended Modifications to Water Budget Calculation

WB Allocation Options	Current	Proposed
Gallons per Capital per Day (GPCD)	60	55
Inefficient Use Definition (% OWB)	100%	30%
Excessive Use Definition (% OWB)	100%	N/A

4.2 Revision of Block Definitions

4.2.1 Water Budget Block Definitions

Peaking refers to the period of greatest water usage which places the highest demand on the water system. It is further described in Section 4.3. Typically, indoor water use tends to be homogenous throughout the year with minimal peaking characteristics. On the other hand, outdoor use tends to fluctuate with weather conditions and thus has higher peaking characteristics than indoor use. Commercial use includes both indoor and outdoor use with indoor as the majority use. Thus, commercial use peaks less than outdoor use but more than indoor use. Each usage type — indoor, outdoor, or commercial use have similar peaking characteristics. The different peaking characteristics, increasing in the direction of the arrow, may be conceptually represented on the scale shown below. The proposed block definitions shown in Table 4-2 group usage with similar peaking characteristics within the same block.

To further promote conservation and proportionately allocate costs of service to those who place the greatest demands on the water system, it is proposed that the District replace the current five-block structure with a four-block structure. Eliminating Block 5 will provide less room for inefficient water use before paying the highest water supply cost. While both the 4-Block structure and 5-Block structure follow cost-of-service principles and allocate costs based on the usage characteristics of each block, the 4-Block structure is more aligned with the District's policy objective of promoting conservation. Considering the recommended water budget modifications and the elimination of Block 5, the proposed block definitions are presented in Table 4-2 below. Based on the block definitions shown below, peaking factors and the cost of providing service to each block can be determined. The cost of service is what is ultimately used to determine a unit price for each block.

Table 4-2: Recommended Block Definitions for Potable Water

Block	Water Budget Blocks	Current	Proposed
Block 1	Indoor Use	Indoor WB (60 GPCD)	Indoor WB (55 GPCD)
Block 2	Efficient Outdoor Use	Outdoor WB	Outdoor WB
Block 3	Inefficient Use	100% OWB	30% OWB
Block 4	Excessive Use	100% OWB	Above Inefficient Use
Block 5	Wasteful Use	Above Excessive Use	

Much like potable water, the block reduction from four blocks to three blocks for the RW structure is proposed as well. Again, moving from the current four-block structure to a three-block structure will promote conservation and proportionately allocate costs of service to those who place the greatest demands on the water system . The proposed definitions for RW are in summarized in Table 4-3.

Table 4-3: Recommended Block Definitions for Recycled Water

Block	Water Budget Blocks	Current	Proposed
Block 1	Efficient Use	Outdoor WB	Outdoor WB
Block 2	Inefficient Use	100% OWB	30% OWB
Block 3	Excessive Use	100% OWB	Above Inefficient Use
Block 4	Wasteful Use	Above Excessive Use	

4.2.2 Inter-Agency Block Definitions

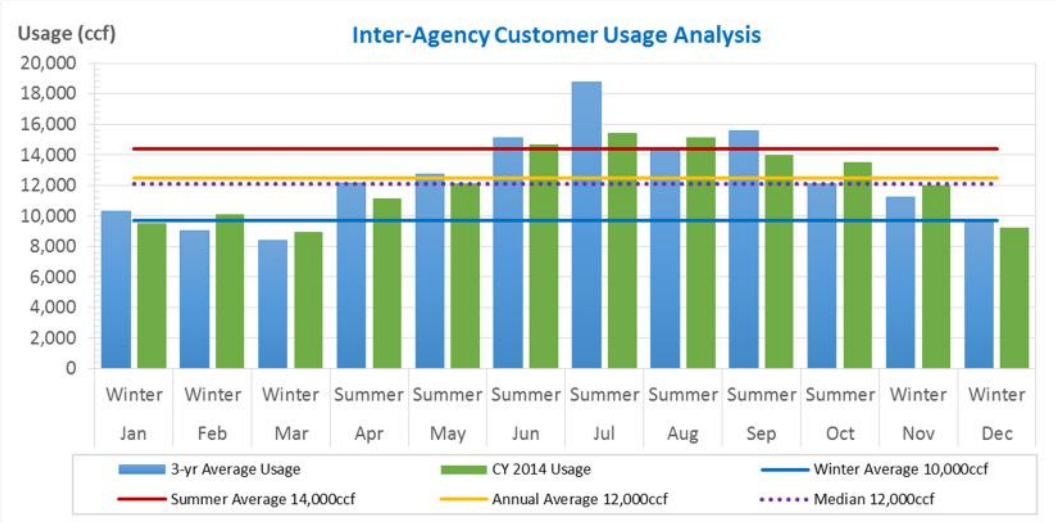
The District provides wholesale water service to The Farm Mutual Water Company. To determine the block definitions for its lone Inter-Agency customer, the District proposes to use seasonal averages. Based on consumption data from calendar years (CY) 2012 through 2014, the monthly seasonal averages are as follows:

- Winter Average (Nov – Mar) for CY 2012-2014 = 10,000 ccf

- Summer Average (Apr – Oct) for CY 2012 – 2014 = 14,000 ccf
- Annual average for CY 2012-2014 = 12,000 ccf

The consumption data along with monthly seasonal averages are summarized in Figure 4-1 below.

Figure 4-1: Inter-Agency Customer Usage Analysis



The District is proposing to use 90% of the winter average to define Block 1 (0 – 9,000 ccf). Following suit, Block 2 is defined from the 90% of the winter average to the overall annual average (9,001 – 12,000 ccf). Any use beyond the annual average is subject to Block 3 pricing. The proposed block definitions are summarized in Table 4-4. Based on the block definitions shown below and peaking factors, the cost of providing service to each block can be determined. Like the other customer classes, the proposed block definitions will maintain cost of service principles and allocate costs to each block based on its usage characteristics.

Table 4-4: Recommended Block Definitions for Inter-Agency Customers

Inter-Agency	Block Definitions	Basis
Block 1	0 – 9,000 ccf	90% of Winter Average
Block 2	9,001 – 12,000 ccf	Annual Average
Block 3	Above 12,000 ccf	

4.3 Separation of Residential and Irrigation Rates based on Peaking Characteristics

Water systems are designed to accommodate the maximum level of demand for any given time. System capacity is the system's ability to supply water to all delivery points at the time when demanded. It is measured by each customer's water demand at the time of greatest demand. This period of greatest demand is referred to as "peaking". In order to meet peak demands, agencies must build and maintain larger infrastructure than would otherwise be necessary. For example, the District's maximum day usage is estimated to be two times the average usage; therefore, facilities such as reservoirs are designed twice as large to ensure that maximum day requirements are met.

There are significant costs associated with meeting peak demands. Peaking related costs should be allocated proportionately among the different customer classes based on the peaking characteristics of each class. In other words, the customer class responsible for creating peak periods of demand should proportionately bear a greater share of the costs of meeting peaking demands.

The consumption data during CY 2014 for each customer class is shown in Table 4-5 along with the peaking factor calculation. The ratio of a customer class' maximum usage and minimum usage is its peaking factor. For example, residential customers' peak monthly usage is 877,821 ccf, which is 190% of their minimum monthly usage of 464,398. Thus, the peaking factor for residential customers is 190%. Commercial and institutional customers have the lowest peaking factor, followed by residential, and then irrigation as shown on Table 4-5. Irrigation has a peaking factor of 345% — almost twice that of the residential customer class at 190%. Since the peaking factors for these two types of customers are markedly different, it would be appropriate to separate them into two distinct customer classes with their own rate schedules so that peaking costs could be more accurately assigned to the users that create peak demand. RFC's analysis in this Report incorporates the recommended separation of residential and irrigation customers.

Table 4-5: Peaking Factors

Peaking Factors	Peak Month (ccf)	Min Month (ccf)	Max / Min
Residential	877,821	464,398	190%
Irrigation	245,731	71,191	345%
Commercial / Institutional	63,387	38,861	165%
Hydrant	21,247	3,239	655%
Inter-Agency	15,448	8,926	175%

4.4 Recommended Policy related to Recycled Water Funding from Potable Water Rates

RW is a new source of water and ensures potable water reliability. The use of RW frees up potable water that can be used by to ensure water reliability to meet inefficient and excessive usage (Beyond WB) of customers who use water in excess of their water budget. Since "Beyond WB" customers benefit from the RW system, it is appropriate for those potable water customers to share the burden of a portion of the RW costs.

In the absence of RW, potable customers would have to buy MWD Tier 2 water to supply inefficient usage. Thus, the costs that are avoided by potable customers through the presence of RW is an appropriate amount for potable revenues to contribute towards RW costs. Potable water customers' contributions toward RW current O&M costs are calculated as follows:

$$Acre\ Feet\ of\ RW\ Sales \times (MWD\ Tier\ 2\ AF\ Cost - Blended\ Water\ Supply\ AF\ Cost)$$

Potable water rate revenues also contribute toward RW debt service and capital projects. Current and future RW customers benefit from the presence of the RW infrastructure. In addition, the RW system provides water supply reliability to "Beyond WB" potable users. Much like RW O&M costs, it is appropriate for potable water customers to also share the burden of RW infrastructure costs. Current RW debt service is first allocated between current and future users based on results from the Connection Fees Study, which analyzes the current value of the infrastructure along with the District's growth projections through 2035. Next, the current users' share of the allocation is split between current RW users and "Beyond WB" potable users. This process, summarized in Figure 4-2, is also used to determine the allocation for RW capital costs. The FY 2016 allocation for current RW debt service and capital projects is shown in Table 4-6.

Figure 4-2: Process for Allocation of RW Current Debt Service

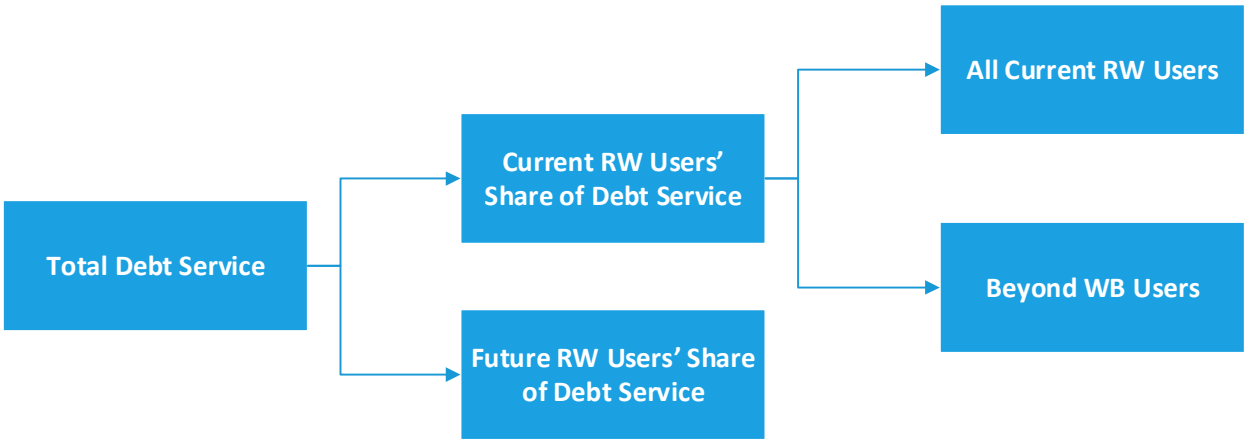


Table 4-6: Allocation of Current RW Debt Service and Future Capital Projects

RW Capital Costs	FY 2016	Future RW Users		Current RW Users	
Current RW Debt Service	$1,477,762[5]	48%	$709,326	52%	$768,436
Future RW Capital Projects	$500,000[6]	48%	$240,000	52%	$260,000

4.5 "Beyond WB" Potable Usage Definitions

As discussed in Section 4.4, "Beyond WB" potable water users will also share the costs of the District's RW costs. "Beyond WB" use for each customer class is defined in Table 4-7.

Table 4-7: "Beyond WB" Potable Usage Definitions

Customer Class	Inefficient Usage Definition
Commercial	10% of their total usage (Based on SBx7-7 conservation goals)
Residential/Irrigation	All usage in Inefficient and Excessive Blocks (Blocks 3 and 4)
Inter-agency	All usage in Blocks 2 and 3

[5] 2007 COP-260 and 2008B COP-249 debt service responsible by Fund 561.
[6] Projected / Estimated by District staff

5 Usage Analysis and Projected Sales

5.1 Usage Analysis

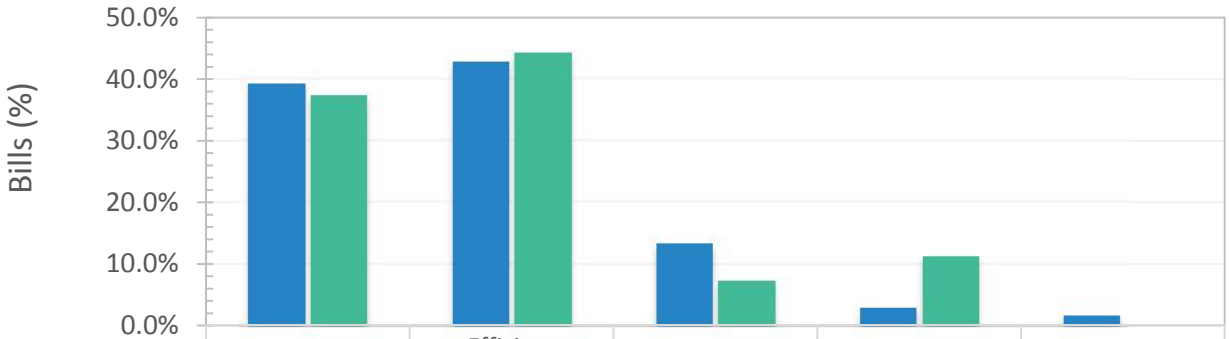
Section 4 contains recommendations to revise the water budget allocations. The recommendations included:

1. Reducing the GPCD from 60 to the new standard of 55;
2. Reducing the width of Block 3 from 100% of the OWB to 30% of the OWB;
3. Eliminating Block 5 for residential potable water customers;
4. Eliminating Block 4 for RW and Irrigation customers; and
5. Establishing a 3-block rate structure for Inter-agency customer (eliminating uniform rate).

This section compares the current water budget allocations versus the water budget allocations with the recommended changes presented in Section 3, using CY 2014 customer consumption data.

Figure 5-1 compares the distribution of bills for the current water budget allocations to the proposed allocations. Under both water budget allocations, approximately 82% of users stay within Block 2. Since the proposed allocations reduce the width of Block 3, more customers fall into Block 4. In addition, the proposed elimination of Block 5 combines Blocks 4 and 5 users.

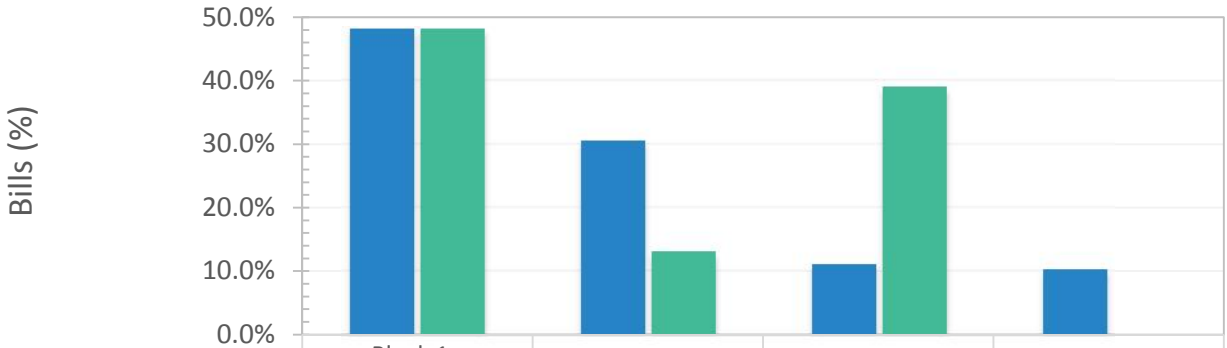
Figure 5-1: Bill Distribution for Residential Blocks



	Indoor Use	Efficient Outdoor Use	Inefficient Use	Excessive Use	Wasteful Use
Current (60, 100%OWB)	39.2%	42.8%	13.3%	3.0%	1.7%
Proposed (55, 30%OWB)	37.3%	44.1%	7.2%	11.3%	

The blocks for irrigation customers are proposed to be reduced from 4 to 3. The Block 1 usage criteria is the same for both the current and proposed allocations, resulting in no change in the bill distribution. However, the proposed allocation has a much narrower Block 2 (only 30% of the OWB). The narrower Block 2 pushes more users into Block 3. In addition, the proposed elimination of Block 4 also produces more Block 3 users. Again, the block definitions are used to assign peaking factors and the cost of providing service to each block. The cost of service is then used to determine a unit price for each block.

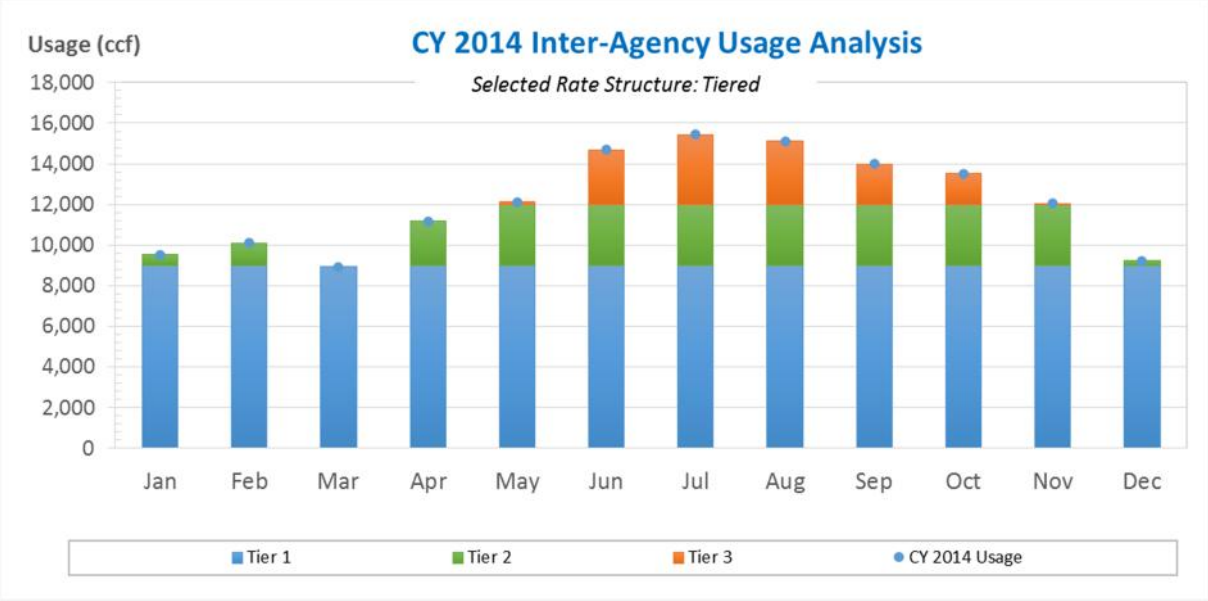
Figure 5-2: Bill Distribution for Irrigation Blocks



	Block 1 - Efficient Outdoor Use	Block 2 - Inefficient Use	Block 3 - Excessive Use	Block 4 - Wasteful Use
Current (Blocks 2 & 3 @ 100%OWB)	48.0%	30.5%	11.1%	10.3%
Proposed (Block 2 @ 30%OWB)	48.0%	13.0%	39.0%	

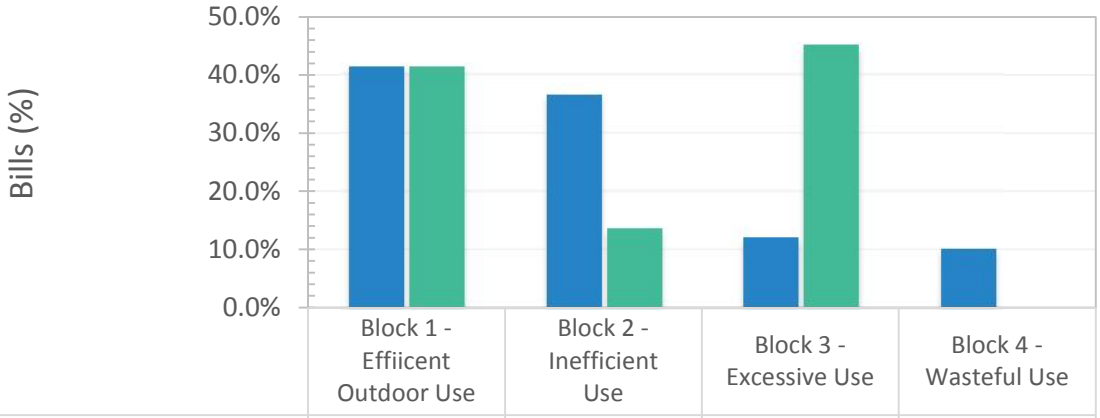
Inter-agency use is proposed to shift from the current uniform rate structure to a block structure. Like all cost-of-service based rate structures, the proposed block structure takes into consideration the usage characteristics of the Inter-agency customer and the stress it places on the District's system and allocates costs accordingly. Based on CY 2014 consumption data shown in Figure 5-3, the District's Inter-Agency customer would enter Block 3 usage from June through October, with minimal Block 3 usage in May as well. During the winter months from December to March, the Inter-Agency customer's usage is almost entirely within Block 1 efficient usage.

Figure 5-3: CY 2014 Interagency Consumption Analysis



Much like irrigation, the blocks for recycled water are proposed to be reduced from 4 to 3 with a similar effect on the bill distribution. No differences are seen in Block 1 since the allocations are the same, but marked differences appear in Block 2 because the proposed allocation is 30% of the OWB compared to the existing 100% of the OWB. Furthermore, the proposed elimination of Block 4 puts more users into Block 3.

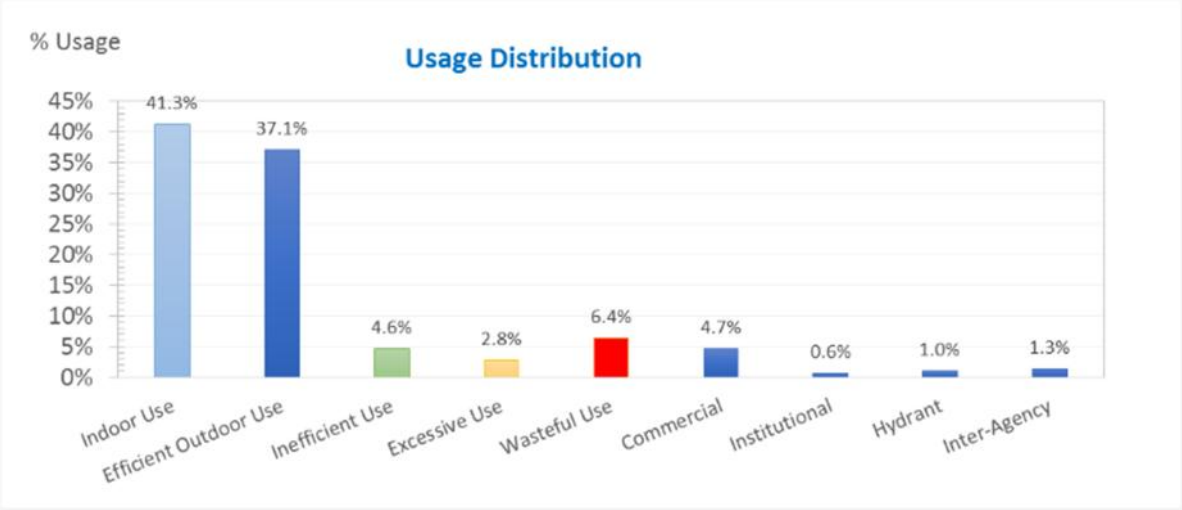
Figure 5-4: Bill Distribution for Recycled Water Blocks



	Block 1 - Effiicent Outdoor Use	Block 2 - Inefficient Use	Block 3 - Excessive Use	Block 4 - Wasteful Use
Current (Blocks 2 & 3 @100%OWB)	41.5%	36.5%	12.0%	10.1%
Proposed (Block 2@ 30%OWB)	41.5%	13.5%	45.0%	

Figure 5-5 summarizes the District's overall usage by block/customer type. Most notably, the overwhelming majority of the District' usage is efficient Block 1 (41%) and Block 2 (37%) use.

Figure 5-5: Overall District Consumption by Block/Customer Type



5.2 Projected Sales for FY 2016

5.2.1 Projected Potable Water Sales and Projected Inefficient Usage

Table 5-1 contains the potable water projections for all customer classes for FY 2016 (11,051,716 ccf or 25,371 AF). Using the definitions for "beyond WB" usage described in Section 4.5, the number of units for inefficient usage are shown. The revenues from "beyond WB" potable water usage sales can ultimately be used to fund RW costs because the demand for potable water by these customers creates the need for RW.

Table 5-1: Projected Potable Water Sales and Projected "Beyond WB" Usage

	FY 2016	"Beyond WB" Usage
Residential	**8,294,847 ccf**	**917,850 ccf**
Indoor Use	4,568,250 ccf	0 ccf
Efficient Outdoor Use	2,808,746 ccf	0 ccf
Inefficient Use	317,672 ccf	317,672 ccf
Excessive Use	600,179 ccf	600,179 ccf
Irrigation	**1,903,197 ccf**	**610,388 ccf**
Efficient Use	1,292,809 ccf	0 ccf
Inefficient Use	192,767 ccf	192,767 ccf
Excessive Use	417,621 ccf	417,621 ccf
Others (Non-Water Budget)	**707,776 ccf**	**59,225 ccf**
Commercial	520,496 ccf	52,050 ccf
Institutional	71,751 ccf	7,175 ccf
Hydrant	115,529 ccf	0 ccf
Inter-Agency	**145,896 ccf**	**37,970 ccf**
Inter-Agency Block 1	107,926 ccf	0 ccf
Inter-Agency Block 2	25,026 ccf	25,026 ccf
Inter-Agency Block 3	12,944 ccf	12,944 ccf
Total	**11,051,716 ccf**	**1,625,433 ccf**

Table 5-2 summarizes the usage projections above into levels of efficient usage. Note that the bulk of the projected water usage for FY 2016 is in Block 1 and Block 2. Given the variance of block definitions for the different customer classes, the inputs for each line item are explained in the corresponding footnote.

The District's potable water uses are shown in Table 5-3. Block usage accounts for 95% of total District potable use excluding Hydrant, while non-water budget customers like Commercial and Institutional users comprise 5% of overall use excluding Hydrants. As described in Section 3.3, Hydrant water use is water used on construction sites that is metered at the terminus of the fire hydrant.

Table 5-2: Summary of Water Usage Efficiency

Usage Types	FY 2016
Indoor Use	4,568,250 ccf
Efficient Outdoor Use[7]	4,209,481 ccf
Inefficient Use[8]	535,464 ccf
Excessive Use[9]	1,030,744 ccf
Total Block Usage	**10,343,940 ccf**

Table 5-3: Usage Water Summary

Usage Groups	FY 2016	% w/o Hydrant
Total Block Usage	10,343,940 ccf	95%
Non-WB excl. Hydrants[10]	592,247 ccf	5%
Hydrants	115,529 ccf	
Total	**11,051,716 ccf**	**100%**

5.2.2 Recycled Water Sales

Projected recycled water sales for FY 2016 are summarized by block in Table 5-4. The total RW production less other District uses (161 AF from Horsethief WTP) is the remainder available for sale. Note that the vast majority of RW use occurs in Blocks 1 and 2, much like the potable water sales.

Table 5-4: Projected Recycled Water Sales

	Projected RW Sales
Projected Total RW Production	1,181 AF
Less Horsethief WTP (Other District uses)	-161 AF
Projected Billed RW Sales	**1,020 AF**
Efficient Use	295,933
Inefficient Use	109,294
Excessive Use	28,002
Wasteful Use	11,083
Projected Billed RW Sales	**444,312 ccf** **1,020 AF**

[7] Includes Efficient outdoor use for Residential, Irrigation accounts and Block 1 use for Inter-Agency
[8] Includes Inefficient use for Residential, Irrigation accounts and Block 2 use for Inter-Agency
[9] Includes Excessive use for Residential, Irrigation accounts and Block 3 use for Inter-Agency
[10] Includes Commercial and Institutional use

6 Potable Water Supply Costs

6.1 Available Water Supply Sources

The District relies on several sources of water supply to meet its potable water demand. These include local groundwater, surface water, and imported water. All three sources are blended within the District's distribution system.

The groundwater supplies are derived from the Elsinore Groundwater Basin in the Elsinore area and Coldwater Goundwater Basin in the Temescal Valley area. These water sources rely heavily upon precipitation, runoff from the surrounding watersheds, infiltration from the San Jacinto River, and other means of recharge. Groundwater water from a few of the wells in the Elsinore Groundwater Basin are blended together, and water from a few other wells in this same basin is treated at the Back Basin Water Treatment Plant for arsenic removal. In order to better manage the groundwater basin to ensure future supplies, the District adopted a Groundwater Management Plan for the Elsinore Groundwater Basin and established an operating safe yield of not to exceed 5,500 Acre Feet per year.

The Canyon Lake Water Treatment Plant treats surface water that flows into Canyon Lake, which includes flows from the San Jacinto River, Salt Creek, and local surface runoff. Untreated water can also be purchased from WMWD through two connections which provide water from the Colorado River or State Water Project. The treatment plant has a design capacity of 9 million gallons per day, or 13.9 cubic feet per second (cfs). Ownership of the Canyon Lake Reservoir was transferred to the District as a result of the Temescal Water Company acquisition.

The District also purchases imported water from MWD, via WMWD through two separate connections. The District has the right to purchase a maximum flow of 37.5 cfs through Auld Valley Pipeline (AVP). Water purchased through AVP is treated at MWD's Skinner Filtration Plant, which is then blended primarily Colorado River water and a small amount of State Water Project water.

In addition to the AVP, water is imported to the District owned Temescal Valley Pipeline (TVP). The TVP delivers imported water from WMWD which is the State Water Project water treated at MWD's Mills Treatment Plant facility. Conveyed water is transferred to the TVP from the Mills Gravity Pipeline, which is owned and operated by WMWD. The District has agreements that secure 9.0 cfs and a separate leasing agreement with the ability to lease an additional 12 cfs of capacity from Mills Gravity Pipeline.

The associated costs per unit for each of the water supply sources are summarized in Table 6-1. The quantity is the amount of water produced by wells after accounting for water treated at the Back Basin Treatment Plant. The quantity used for sale for each water source takes into account normal water loss, District use, and variances granted to customers (approximately 10.4%). The unit rates are determined by

taking the variable costs and dividing them by the projected quantity used for sales (in ccf). For example, the per unit price for well water is determined by taking its total variable cost of $130,000 and dividing it by 1,399,837 units, for a per unit rate of $.09. Most notably, there is a sizable increase in the per unit costs between the local water and the water purchased from MWD.

Table 6-1: Water Supply Sources and Costs

Available Water Supply Sources	FY 2016 Variable Costs	Quantity	Projected Quantity Used for Sales		Unit Rates
Wells[11]	$130,000	3,745 AF	3,214 AF	1,399,837 ccf	$0.09 /ccf
Back Basin TP[12]	$130,483	1,885 AF	1,707 AF	743,602 ccf	$0.26 /ccf
Canyon Lake TP	$375,543	2,550 AF	2,309 AF	1,005,933 ccf	$0.37 /ccf
Imported from Temescal	$164,000	585 AF	530 AF	230,773 ccf	$0.71 /ccf
MWD - Tier 1	$17,122,859	18,362 AF	16,629 AF	7,243,632 ccf	$2.37 /ccf
MWD - Tier 2	$1,001,987		982 AF	427,939 ccf	$2.71 /ccf
Total	**$18,924,872**[13]	**27,127 AF**	**25,371 AF**	**11,051,716 ccf**	

6.2 Allocation of Water Supply Sources to Customer Usage Groups

As shown in Table 5-3, the District allocates a certain percentage of its available supply for non-water budget sales and hydrant usage in addition to its water-budget customers. Table 6-2 below summarizes how the entirety of each supply source is distributed among water budget sales, non-water budget sales, and Hydrant use. Hydrant usage is entirely supplied by MWD Tier 1 water because these are typically temporary construction-related meters, which is non-essential use. Since local well water is the lowest cost source of water, it is reserved only for essential use. Therefore, Hydrant use must be entirely supplied by MWD Tier 1.

[11] Value in "Quantity" column accounts for the Wells Production, equal to 5,630AF, less 1,885AF of treated water at Back Basin Treatment Plant (TP)
[12] Back Basin Treatment Plant (TP) includes water cost from Wells ($0.26 = $0.09 + [$130,483 /743,602 ccf])
[13] See Appendix 5 for details

Table 6-2: Allocation of Water Supply Sources to Customer Usage Groups

Water Supply Sources	Quantity	Block Usage	Non-WB	Hydrant	Block Usage	Non-WB	Hydrant
Wells	1,399,837 ccf	95%	5%	0%	1,324,029 ccf	75,808 ccf	0 ccf
Back Basin TP	743,602 ccf	95%	5%	0%	703,332 ccf	40,270 ccf	0 ccf
Canyon Lake TP	1,005,933 ccf	95%	5%	0%	951,457 ccf	54,476 ccf	0 ccf
Imported from Temescal	230,773 ccf	95%	5%	0%	218,275 ccf	12,497 ccf	0 ccf
MWD - Tier 1	7,243,632 ccf	93%	5%	2%	6,742,082 ccf	386,021 ccf	115,529 ccf
MWD - Tier 2	427,939 ccf						

6.3 Allocation of Water Supply to Usage Types and Blocks

Meeting the water demands of high usage customers carries not only significant capital costs, but increased marginal water supply costs as well. As shown in Table 6-1, as water usage increases, the District has to meet the increased demand with more expensive water supply, at a higher cost per unit. The variance in water supply costs is one of the strongest justifications for block rate structures. Blocks 1 & 2 Efficient Use demand is met through a portfolio of water supply sources. The weighted average cost per unit for blended water supply is $1.60, with well production at $0.09 per ccf on the low end and MWD Block 1 water at $2.37 on the high end. MWD Tier 1 is the only supply source for Inefficient Use; therefore, the per unit cost of $2.37 for Inefficient Use is exactly the cost of MWD Tier 1 water. MWD Tier 2 is the next incremental water supply source for excessive use, thus the MWD Tier 2 unit rate is used for the excessive use water supply rate to communicate the true value of excessive usage.

Table 6-3: Allocation of Water Supply for Water Budget Customers

Usage Types	Water Supply	Wells	Back Basin TP	Canyon Lake TP	Imported from Temescal	MWD - Tier 1	MWD - Tier 2	Unit Rate
	Quantity Available	**1,324,029 ccf**	**703,332 ccf**	**951,457 ccf**	**218,275 ccf**	**6,742,082 ccf**		
	Unit Rate	**$0.09 /ccf**	**$0.26 /ccf**	**$0.37 /ccf**	**$0.71 /ccf**	**$2.37 /ccf**	**$2.71 /ccf**	
	FY 2016							
Efficient Use	8,777,732 ccf	1,324,029	703,332	951,457	218,275	5,580,638	0	$1.60 /ccf
Inefficient Use	535,464 ccf	0	0	0	0	535,464	0	$2.37 /ccf
Excessive Use	1,030,744 ccf	0	0	0	0	625,980	404,764	$2.71 /ccf
Total	**10,345,956 ccf**	**2,648,058 ccf**	**1,406,664 ccf**	**1,902,915 ccf**	**436,552 ccf**	**13,484,167 ccf**	**404,767 ccf**	

To meet water demands for non-water budget customers, the District uses a variety of sources much like it does for its water budget customers. As shown in Table 6-4, the blended per unit cost for non-water budget customers is $1.73 with a heavy reliance on MWD Tier 1 water. Consistent with the data in Table 6-2, Hydrant needs are met entirely by MWD Tier 1 water and therefore has a per unit cost identical to that of MWD Tier 1.

Table 6-4: Allocation of Water Supply for Non-Water Budget Customers

Usage Types	FY 2016	Wells	Back Basin TP	Canyon Lake TP	Imported from Temescal	MWD - Tier 1	MWD - Tier 2	Back Basin TP2
Non-WB excl. Hydrant	592,247 ccf	75,808 ccf	40,270 ccf	54,476 ccf	12,497 ccf	386,021 ccf	23,175	**$1.73 /ccf**
Hydrant	115,529 ccf					115,529 ccf	0	**$2.37 /ccf**

6.4 Proposed Water Supply Rates

The proposed water supply rates for each block and customer class are summarized in Table 6-5, along with the corresponding water supply source. Based on the increased water supply costs for higher usage customers, the justification for a block water rate structure is clear and present.

Table 6-5: Proposed Water Supply Rates

	Water Supply Sources	Unit Rates
Water Budgeted Block		
Indoor Use	Blended Low Cost + MWD Tier 1	$1.60 /ccf
Efficient Outdoor Use	Blended Low Cost + MWD Tier 1	$1.60 /ccf
Inefficient Use	MWD Tier 1	$2.37 /ccf
Excessive Use	MWD Tier 2	$2.71 /ccf
Non-Water Budget Uniform		
Commercial	Blended Low Cost + MWD Tier 1	$1.73 /ccf
Institutional	Blended Low Cost + MWD Tier 1	$1.73 /ccf
Hydrant	MWD Tier 1	$2.37 /ccf
Inter-Agency Block		
Inter-Agency Block 1	Blended Low Cost + MWD Tier 1	$1.60 /ccf
Inter-Agency Block 2	MWD Tier 1	$2.37 /ccf
Inter-Agency Block 3	MWD Tier 2	$2.71 /ccf

7 Recycled Water Funding

As discussed in Section 4.4, revenue from potable water rates may be used to fund RW operating and capital costs (including current debt service and future capital costs). Revenues from inefficient potable water rate revenues are used to fund RW current O&M costs, RW current debt service, and RW future capital costs. This section discusses the projected transfers from potable water sales revenues to fund the RW system.

7.1 Transfers from Fund 118 to Fund 130 for RW O&M

In the absence of RW, potable customers would have to buy MWD Tier 2 water to supply "Beyond WB" usage. Section 4.4 established that the costs that are avoided by potable customers because of the presence of RW is an appropriate amount for potable revenues to contribute towards RW costs. The difference in the per unit cost between MWD Tier 2 water ($2.71) and local well water ($1.60) (from Table 6-5) is multiplied by the unit sales of RW (from Table 5-4) to determine the avoided costs that inefficient users would otherwise have to pay in the absence of RW:

$$ccfs\ of\ RW\ Sales \times (MWD\ Tier\ 2\ ccf\ Cost - Blended\ Water\ Supply\ ccf\ Cost)$$
$$444{,}312 \times \$2.71 - \$1.60 = \$493{,}200$$

The transfer of $493,200 from potable water sales to fund RW O&M is recovered entirely from inefficient users.

7.2 RW Capital Cost and Debt Service Funding

Much like RW O&M costs, it is appropriate for "Beyond WB" potable customers to also share the burden of RW infrastructure costs because RW offsets the "Beyond WB" demand for potable water. Current RW debt service and Capital Projects costs are first allocated between current and future users based on results of the Connection Fees Study. The current users' share of the allocation is then split between current RW users and inefficient potable users. The portion of the RW capital costs and debt service funded by inefficient and excessive potable users is summarized in the last column of Table 7-1 below.

Table 7-1: Distribution of Recycled Water Capital Costs and Debt Service Funding

RW Capital Costs	Current Users	RW Users		"Beyond WB" Potable Users	
	2,069,745 ccf	21.5%	444,312 ccf	78.5%	1,625,433 ccf
Current RW Debt Service	$768,436	21.5%	$164,960	78.5%	$603,476
Future RW Capital Projects	$260,000	21.5%	$55,814	78.5%	$204,186

8 Water Cost of Service and Proposed Rates

This section of the report provides a discussion of the revenue requirements, peaking costs, and capital costs for the water utility. The Cost of Service methodology provided in this section demonstrates a clear nexus between the charges for service and the allocation of costs to provide such service, as required by Proposition 218.

8.1 Revenue Requirements

A review of a utility's revenue requirements is a key first step in the rate study process. This section of the report provides a discussion of the revenue requirements, water supply sources, peaking costs, and capital costs for the potable water utility. Table 8-1 details the obligations for the water enterprise and the revenue that must be recovered from rates. Water supply costs, power costs, and other O&M totaling $42.7M (Appendix 1) comprise the bulk of the revenue requirement. In addition, the water enterprise contributes over $5M to reserve funds, net of a $1.2M offset from the rate stabilization reserve, and $5.9M to capital reserve for capital R&R projects (Appendix 1). Based on the methodology described in Section 0, contributions to the RW fund for debt service, future capital, and O&M are made, totaling $1.3M. After adjustments, such as revenues from service charges and connection fees (Appendix 1), the net amount to be recovered from rates is $48.6M.

Table 8-1: FY 2016 Water Revenue Requirements from Rates

	FY 2016	Noted Sources
REVENUE REQUIREMENTS		
O&M Expenses	**$42,713,588**	Appendix 1
Water Supply Costs	*$18,924,872*	Section 6.1
Power Costs	*$3,303,100*	All Electricity costs
Other O&M Costs	*$20,485,616*	
Non-Operating Expenses	**$173,227**	Appendix 1
Debt Service	**$1,226,733**	Appendix 1
Reserve Funding	**$5,175,717**	
O&M Reserve	*$746,880*	Appendix 1
Rate Stabilization Reserve	*-$1,200,000*	Appendix 1
Replacement Reserve	*$5,881,837*	Appendix 1
Excess Power Surcharge Reserve	*$0*	Appendix 1
Other Transfers to Other Funds	*-$253,000*	Appendix 1
RW Funding	**$1,300,862**	
Transfers to Fund 561 for Current RW Debt Service	*$603,476*	*Section 7.2*
Transfers to Fund 561 for Future RW Capital Projects	*$204,186*	*Section 7.2*
Transfers to RW Fund 130 for O&M	*$493,200*	*Section 7.1*
Subtotal Revenue Requirements	**$50,590,127**	
LESS ADJUSTMENTS		
Service Revenues	-$1,493,185	Appendix 1
New Water Service Meter Connection	-$327,500	Appendix 1
Non-Operating Revenues	-$155,913	Appendix 1
Subtotal Adjustments	**-$1,976,598**	
NET REVENUE REQUIREMENTS FROM RATES	**$48,613,529**	

8.2 Cost of Service Allocation to Cost Categories

According to the M1 Manual, the costs incurred in a water utility are generally responsive to the specific service requirements or cost drivers imposed on the system by its customers. Each of the various water utility facilities are designed and sized to meet one or more of these cost drivers, and the capital costs incurred in the construction/installation of these facilities as well as the O&M expenses incurred in running the system are, in turn, linked to these service requirements. The principal service requirements

that drive costs include the annual volume of water consumed, the peak water demands incurred, the number of customers in the system, and the number of fire hydrants required to maintain adequate public fire protection. Accordingly, these service requirements are the basis for the selection of the cost categories or cost components used in the second step in the cost-of-service allocation process.

The AWWA recommends two methods for classifying costs among various customers: (1) the Base-Extra Capacity method in which costs are allocated to the different customer categories proportionate to their use of the water system; and (2) the Commodity-Demand method in which costs are proportionately allocated to each customer category based on their peak demand. Although the two methods vary in the way in which costs are allocated, both result in rates designed to recover proportionately the reasonable cost of service during periods of both average and peak demands. This Study uses the Base-Extra Capacity method, which is widely used in the water industry to serve retail customers.

The second step in the cost of service analysis is to functionalize the revenue requirements into cost components. This analysis employs the "Base-Extra Capacity" method, under which water utility costs of service are assigned to basic functional cost components including: water supply costs; base fixed costs (fixed costs incurred to meet average demand); extra capacity or peaking costs (fixed water system costs to meet maximum day and maximum hour, or peaking, demand); and conservation, meter service and customer-service related costs as described in the M1 Manual. Base costs include fixed water supply costs, operations and maintenance costs, capital costs under average load conditions, a portion of operations and maintenance costs associated with storage, treatment, pumping and distributions facilities, and certain water capital cost investments. Peaking costs are costs associated with meeting water demands that exceed average (base) levels of use by system customers. These costs are incurred because of water use variations and peak demands of customers. Both base and peaking costs are considered fixed costs along with customer service costs, fire protection and meter service costs. Customer costs are costs associated with serving customers, such as meter reading, billing, customer service, etc. Direct fire protection costs are related to the costs that apply solely to the fire protection function of the water system, both public and private, such as fire hydrants and related branch mains and valves, and the additional capacity required in the system to accommodate fire flow in case of an emergency.

Table 8-2 summarizes the peaking characteristics of the District's water system determined by the District's Engineering Staff. The Average Daily Flow is the volume of water delivered to the system over the course of a year divided by 365 days, expressed here in gallons per minute. The Peak Day Demand is the largest volume of water delivered to the system in a single day. Similarly, the Peak Hour Demand is the maximum volume of water delivered to the system in a single hour. The Max Day peaking factor, which is the ratio of Peak Day Demand over Average Daily Flow, is 2.0 and the Max Hour peaking factor, or Peak Hour Demand over Average Daily Flow, is 3.6. These ratios are used to determine the appropriate percentage allocation of total O&M and capital costs towards peaking, as shown in in Section 10.4 in the Appendix.

Table 8-2: Water System Peaking Factors

	Peaking Factors
Base	1.00
Max Day	2.00
Max Hour	3.60

The required revenue of $48.6M to be recovered from water service fees is allocated according to the categories in Table 8-3. Revenue offsets include Non-Operating Revenues as shown in Table 8-1. For further detail, please see Section 10.4 and Section 10.5 in the Appendix which shows the step-by-step allocations.

Table 8-3: Revenue Requirements Allocated to Cost Categories

Cost Categories	FY 2016
Power	$3,303,100
Water Supply	$18,924,872
Base - Fixed	$10,812,264
Peaking	$11,116,226
B&CS	$1,567,826
Meter Service	$847,863
Conservation	$540,919
RW Current Cost Funding	$1,096,676
RW Future Capital Costs	$204,186
Revenue Offsets	-$155,913
Private Fire	$355,510
ADJUSTED REV REQ FROM RATES	**$48,613,529**

8.3 Cost Allocations to Water Rate Components

According to the M1 Manual, the cost-of-service approach to setting water rates results in the proportionate distribution of costs to each customer or customer class based on the costs that each incurs. A dual set of fees—fixed and variable—is an extension of this cost causation theory. For example, a utility incurs some costs associated with serving customers irrespective of the amount or rate of water they use, such as billing and customer service costs. These types of costs are referred to as customer-related costs and typically are costs that would be recovered through a fixed charge. These costs are usually recovered on a per-customer basis or some other non-consumptive basis. Regardless of the level of a customer's consumption, a customer will be charged this minimum amount in each bill.

Utilities invest in and continue to maintain facilities to provide capacity to meet all levels of desired consumption including the peak[14] demand plus fire protection, and these costs must be recovered regardless of the amount of water used during a given period. Thus, peaking costs along with base costs and fixed water system costs to meet average demand (as discussed in Section 8.2) are generally considered as fixed water system costs. It is ideal that agencies recover 100% of the fixed costs through fixed charges, however, it forgoes the affordability for essential use and heavily impacts efficient users. To balance between affordability and revenue stability, it is a common practice that a portion of the base costs and peaking costs are recovered in the fixed charges along with the customer-related costs and meter-related costs.

The most common method for levying fixed charges is by meter size. Meter size is a proxy for the estimated demand that each customer places on the water system. The District's base meter is most commonly a ¾-inch meter. The ratio at which the meter charge increases is typically a function of either meter investment (estimated cost) or the meter's safe operating capacity. For example, based on the AWWA meter capacity ratios, a customer that has a 2-inch meter has the capacity equivalency of 5.33 ¾-inch meters. (A 2-inch meter has a safe operating capacity of 160 gallons per minute (gpm) compared to a ¾-inch meter which has a safe operating capacity of 30 gpm as listed in Table B-1 in the M1 Manual).

Billing and customer service costs related to meter reading, billing and collections are distributed among customers based on the total number of bills rendered in a test year, which is FY 2016 for this Study. Meter service costs, costs related to maintenance costs related to customer meters and services, are distributed to customers in proportion to estimated costs for meters and services installed. Capacity costs, costs related to capital, and costs related to customer meters and services, are distributed in proportion to meter demand capacity as provided by the M1 Manual. According to the M1 Manual, distribution of meter service costs and capacity costs by equivalent meter and service ratios recognizes that meter and service costs vary, depending on considerations such as the size of service pipe, materials used, locations of meters and other local characteristics for various size meters as compared to ¾-inch meters and services.

The components of water system costs are recovered through either fixed service revenues, commodity revenues, or a combination of both. As shown in Table 8-4 below, the entirety of the water supply variable costs, water offset and revenue offset is recovered from commodity revenues. On the other hand, meter costs and billing & customer service costs are entirely recovered from fixed service revenues (fixed service charges and private fire service charges). Base and peaking costs are recovered from both commodity and fixed service revenues.

[14] Peaking costs are the costs related to providing water during high-demand periods.

Table 8-4: Revenue Requirements Allocated to Rate Components

Cost Categories	FY 2016	Power Surcharges	Commodity	Fixed Service Charges	Private Fire Service Charges
Power	$3,303,100	$3,303,100			
Water Supply	$18,924,872		$18,924,872		
Base - Fixed	$10,812,264		$2,162,453	$8,649,812	$0
Peaking	$11,116,226		$9,782,279	$1,333,947	$0
Billing &Customer Service[15]	$1,567,826			$1,549,935	$17,891
Meter Service	$847,863			$847,863	$0
Conservation	$540,919		$540,919		
RW Current Cost Funding	$1,096,676		$1,096,676		
RW Future Capital Costs	$204,186		$204,186		
Revenue Offsets	-$155,913		-$155,913		
Private Fire	$355,510				$355,510
Total	**$48,613,529**	**$3,303,100**	**$32,555,472**	**$12,381,557**	**$373,401**

8.4 Monthly Fixed Service Charges

Both potable water and RW share the same monthly fixed service charges. The proposed monthly fixed charges presented in Table 8-8 are for potable water customers and RW customers.

In order to create parity across the various meter sizes, each meter size is assigned a factor relative to a ¾" meter, which has a value of 1. A particular meter size's ratio of meter and capacity servicing costs relative to that of a ¾" meter is its "Equivalent Meter Units" (EMU). As described in Section 8.3, a 2-inch meter has 5.33 times the throughput capacity of a ¾" meter and therefore has a multiplication factor of 5.33 to determine its EMU to ¾" meter. The Meter & Capacity factor escalates as meter size increases because the District's cost to service a meter increases with its size. Table 8-5 summarizes the EMUs for each fixed cost component.

[15] Allocated to Fixed Service Charges and Private Fire Service Charges based on the number of accounts

Table 8-5: Equivalent Meter Units (EMUs)

Meter Sizes	Number of Accts	Meter & Capacity Factor	# of Bills per Yr	Capacity EMUs per Yr
¾-inch	38,833	1.00	465,996	465,996
1-inch	1,500	1.67	18,000	30,000
1 ½-inch	364	3.33	4,368	14,560
2-inch	722	5.33	8,664	46,208
3-inch	38	11.67	456	5,320
4-inch	48	21.00	576	12,096
6-inch	21	53.33	252	13,440
8-inch	8	93.33	96	8,960
10-inch	4	140.00	48	6,720
Total	**41,538**		**498,456 bills**	**603,300 EMUs**

The total costs for each monthly fixed charge component are then divided by EMUs from Table 8-5 to determine a unit rate cost. Table 8-6 summarizes the unit rate cost for each of the monthly fixed charge components, for a total of $21.08 for the ¾–inch meter.

Table 8-6: Unit Rate Calculations for Monthly Fixed Charges

	FY 2016	Units of Service		Unit Rate
Billing & Customer Service	$1,549,935	498,456 bills	Uniform	$3.11
Meter (Meter Service + 80% of Base – Fixed)	$9,497,674	603,300 EMUs	Capacity Ratio	$15.75
Capacity (12% of Peaking Costs)	$1,333,947	603,300 EMUs	Capacity Ratio	$2.22
Total	**$12,381,557**			**$21.08**

The same approach used in Table 8-6 is employed to determine the monthly service charges for each meter size. Table 8-7 shows monthly fixed charge components for each meter size along with the cost components. Following the principles of cost causation theory discussed earlier, the charge for billing and customer service is the same regardless of meter size.

Table 8-7: Proposed Monthly Fixed Charges

	B&CS	Meter	Capacity	Proposed
¾-inch	$3.11	$15.75	$2.22	**$21.08**
1-inch	$3.11	$26.25	$3.70	**$33.06**
1 ½-inch	$3.11	$52.50	$7.40	**$63.01**
2-inch	$3.11	$84.00	$11.84	**$98.95**
3-inch	$3.11	$183.75	$25.90	**$212.76**
4-inch	$3.11	$330.75	$46.62	**$380.48**
6-inch	$3.11	$840.00	$118.40	**$961.51**
8-inch	$3.11	$1,470.00	$207.20	**$1,680.31**
10-inch	$3.11	$2,205.00	$310.80	**$2,518.91**

Using a cost-of-service approach to determine monthly fixed charges may yield a marked shift from the current service charges. Table 8-8 compares the current monthly fixed charge with the proposed charges developed in this section. For most of the District's residential customers who use a ¾" meter, the proposed monthly fixed charge represents $4.50 increase.

Table 8-8: Monthly Fixed Charges and Impacts

Meter Sizes	# of Accounts	Current Rates	Proposed Rates	% Change	$ Change
¾-inch	38,833	$16.58	$21.08	27%	$4.50
1-inch	1,500	$28.18	$33.06	17%	$4.88
1 ½-inch	364	$54.71	$63.01	15%	$8.30
2-inch	722	$87.85	$98.95	13%	$11.10
3-inch	38	$165.76	$212.76	28%	$47.00
4-inch	48	$276.82	$380.48	37%	$103.66
6-inch	21	$551.98	$961.51	74%	$409.53
8-inch	8	$883.49	$1,680.31	90%	$796.82
10-inch	4	$1,269.71	$2,518.91	98%	$1,249.20

8.5 Commodity Rates

In meeting Proposition 218 requirements, RFC conducted an updated, detailed cost of service analysis and identified several different rate components for the water commodity rates, including Water Supply, Delivery, Peaking, Conservation, Revenue Offsets, RW current cost funding, and RW future cost funding. Each of the COS rate components is described in Table 8-9 below.

Table 8-9: Descriptions of Proposed Water Commodity Rate Components

Rate Components	Description
Water Supply	To recover water supply costs (see section 6 for details)
Delivery	To recover remaining base costs (costs to meet average daily flow)
Peaking	To recover remaining peaking costs (costs to meet peak demand)
Conservation	To recover the District's conservation program costs
Revenue Offsets	To offset remaining water system costs from non-operating revenues
RW Current Cost Funding	To fund the proportionate share of current RW O&M and current RW debt service (see Section 7 for details)
RW Future Cost Funding	To fund the proportionate share of future RW capital project funding (see Section 7 for details)

Applying the descriptions from Table 8-9 above and the revenue requirements in Table 8-4 allocated to the rate components, the revenue requirements for the water enterprise can be assigned to each of the commodity rate components. The revenue requirement for each cost component is shown in Table 8-10 below. The subsequent tables will provide unit costs for each of the cost components shown below.

Table 8-10: Revenue Requirements by Commodity Rate Component

Commodity Rate Components	FY 2016
Water Supply	$18,924,872
Delivery (20% of Base Cost)	$2,162,453
Peaking (88% of Peaking Cost)	$9,782,279
Conservation	$540,919
Revenue Offset	-$155,913
RW Current Cost Funding	$1,096,676
RW Future Cost Funding	$204,186
Total	**$32,555,472**

8.5.1 Delivery Rate Calculations

The unit cost for delivery is determined by simply taking the total revenue requirement for the cost component (from Table 8-10) and dividing it by the total units of service (Table 5-1). The resulting $0.20 per ccf is shown in Table 8-11.

Table 8-11: Delivery Rate Calculations

Delivery Rate	FY 2016
Revenue Requirements	$2,162,453
Units of Service	11,051,716 ccf
Unit Rate	**$0.20 /ccf**

8.5.2 Peaking Rate Calculations

Revisiting the rationale described in Section 4.4, residential and irrigation have very different peaking characteristics and are therefore deserving of their own rates. The unit average rate is greater for customer classes with higher peaking factors. The results for each are shown in Table 8-12.

Table 8-12: Peaking Costs Allocations to Customer Classes

	Projected Demand	Peaking Factors[16]	Allocation Factors	Revenue Requirements	Unit Average Rate ($/ccf)
Residential	8,294,847	190%	64.8%	$6,340,437	$0.77
Irrigation	1,903,197	345%	27.0%	$2,641,557	$1.39
Commercial	520,496	165%	3.5%	$345,508	$0.67
Institutional	71,751	165%	0.5%	$47,629	$0.67
Hydrant	115,529	655%	3.1%	$304,431	$2.64
Inter-Agency	145,896	175%	1.1%	$102,716	$0.71
Total	**11,051,716**		**100%**	**$9,782,279**	**$0.89**

RFC performed usage analyses for single family, irrigation and inter-agency customers to determine the peaking ratios for each block using the CY 2014 usage data. The results are shown in Table 8-13 below. See Appendix 7 for details.

[16] From Peaking Analysis, see Table 4-4 or Appendix 7 for details

Table 8-13: Summary of Peaking Ratios by Block

	Peaking Ratios by Block			
Peaking Analysis	**Residential**	**Irrigation**	**Inter-Agency**	**Recycled Water**
Indoor Use	0.50	-	-	-
Efficient Outdoor Use	1.00	1.00	1.00	1.00
Inefficient Use	1.05	1.14	1.33	1.20
Excessive Use	2.17	2.57	1.72	1.35

The peaking costs responsible by each customer class are then allocated to blocks based on relative peaking ratios among the blocks within the customer classes. The unit rates for the peaking component are shown in Table 8-14 for each block and customer class. There are a few steps to determine each block's unit rate for the peaking rate component. The unit rate for Residential Indoor Usage is presented below. Note that the unit rate (in step 3 of the calculation) is rounded up to the nearest cent in this calculation.

1. The projected demand is multiplied by the peaking ratio to determine an equivalent number of units.
   $4{,}568{,}250 \times 0.50 = 2{,}291{,}833$
2. The percentage of equivalent units for each block, relative to the total equivalent number of units consumed by that customer class, is the same percentage used to determine the revenue requirement for each block. The total revenue requirement for residential users, along with all the other customer classes, can be found in Table 8-12.
   $2{,}291{,}833 \div 6{,}734{,}814 = 34\%$
   $\$6{,}340{,}437 \times 34\% = \$2{,}157{,}628$
3. Finally, the revenue requirement for each block is divided by the projected demand for that block.
   $\$2{,}157{,}628 \div 4{,}568{,}250 = \$0.48$

Table 8-14: Peaking Rate Calculations

Peaking Rate	Projected Demand	Peaking Ratios	Equivalent Units	Rev Requirements	Unit Rates
Residential					
Indoor Use	4,568,250	0.50	2,291,833 ccf	$2,157,628	**$0.48**
Efficient Outdoor Use	2,808,746	1.00	2,808,746 ccf	$2,644,272	**$0.95**
Inefficient Use	317,672	1.05	332,280 ccf	$312,822	**$0.99**
Excessive Use	600,179	2.17	1,301,955 ccf	$1,225,715	**$2.05**
Total Residential	**8,294,847 ccf**		**6,734,814 ccf**	**$6,340,437**	
Irrigation					
Efficient Use	1,292,809	1.00	1,292,809 ccf	$1,865,791	**$1.45**
Inefficient Use	192,767	1.14	220,515 ccf	$318,249	**$1.66**
Excessive Use	123,563	2.57	317,014 ccf	$457,517	**$3.71**
Total Irrigation	**1,609,139 ccf**		**1,830,339 ccf**	**$2,641,557**	
Inter-Agency					
Inter-Agency Block 1	107,926	1.00	107,926 ccf	$67,813	**$0.63**
Inter-Agency Block 2	25,026	1.33	33,285 ccf	$20,914	**$0.84**
Inter-Agency Block 3	12,944	1.72	22,264 ccf	$13,989	**$1.09**
Total Inter-Agency	**145,896 ccf**		**163,474 ccf**	**$102,716**	

The peaking rates for each customer and block are summarized in Table 8-15. As expected, the per unit peaking costs increase with the increase in blocks.

Table 8-15: Peaking Rates by Customer Class

	Residential	Irrigation	Inter-Agency	Uniform
Indoor Use	$0.48 /ccf			
Efficient Outdoor Use	$0.95 /ccf	$1.03 /ccf	$0.63 /ccf	
Inefficient Use	$0.99 /ccf	$1.17 /ccf	$0.84 /ccf	
Excessive Use	$2.05 /ccf	$2.63 /ccf	$1.09 /ccf	
Commercial				$0.67 /ccf
Institutional				$0.67 /ccf
Hydrant				$2.64 /ccf

8.5.3 Conservation Rate Calculations

The conservation portion of the revenue requirement is used to fund conservation programs including rebates and education. Conservation costs of $0.541M (from Table 8-10) are first allocated uniformly to all customer classes (excluding Hydrant) as shown in Table 8-16, which includes a $0.05 unit average rate for all customer classes. However, as Table 8-17 shows, the conservation costs are not uniformly applied across all blocks for each customer class. Since efficient users are not assessed conservation charges, inefficient and excessive users carry the entire burden of the conservation costs.

Table 8-16: Conservation Costs Allocated to Customer Classes

	Projected Demand	Allocation Factors	Revenue Requirements	Unit Average Rate ($/ccf)
Residential	8,294,847	76%	$410,275	**$0.05**
Irrigation	1,903,197	17%	$94,135	**$0.05**
Commercial	520,496	5%	$25,744	**$0.05**
Institutional	71,751	1%	$3,549	**$0.05**
Hydrant	115,529	0%	$0	**$0.00**
Inter-Agency	145,896	1%	$7,216	**$0.05**
Total	**11,051,716**	**100%**	**$540,919**	**$0.05**

Based on District staff estimates, it costs approximately four times more to bring an Excessive User to an efficient level versus bringing an Inefficient User to efficient level. (Conservation costs are recovered from the inefficient and excessive use only because these customers' water use creates the need for a water conservation and efficiency programs and their water use is the target of the District's conservation program efforts). To determine each block's appropriate contribution to the conservation program, the projected demand for each is multiplied by the allocation ratio, which produces equivalent units. Similar to peaking rate calculations, the proportional share of the equivalent units are then used to split the total revenue requirement of $0.511M (for Residential, Irrigation and Inter-Agency) between Inefficient Users and Excessive Users, as shown in Table 8-17.

Table 8-17: Conservation Rate Calculation for Block Usage

	Projected Demand	Allocation Ratios	Equivalent Units	Rev Requirements	Unit Rates ($/ccf)
Indoor Use	4,568,250 ccf	0%	0 ccf	$0	**$0.00**
Efficient Outdoor Use	4,209,481 ccf	0%	0 ccf	$0	**$0.00**
Inefficient Use	535,464 ccf	100%	535,464 ccf	$58,809	**$0.11**
Excessive Use	1,030,744 ccf	400%	4,122,975 ccf	$452,817	**$0.44**
Total	**10,343,940 ccf**		**4,658,440 ccf**	**$511,626**	

8.5.4 Revenue Offset Rate Calculations

The District is projected to generate $155K of non-operating revenue (from Table 8-10), which will be used to provide affordability for essential use; Non-operating revenue is unrestricted and may be used for any purpose the District deems appropriate. This offset is allocated to each customer class based on the projected essential indoor usage in that class relative to the total, as shown in Table 8-18. Hydrant and Irrigation users are not eligible for the offset because neither class has essential indoor use for health and safety.

Table 8-18: Revenue Offsets Allocated to Customer Classes

	Projected Demand	% Accountable Usage	Allocation Factors	Revenue Requirements	Unit Average Rate ($/ccf)
Residential	8,294,847	100%	92%	-$143,172	**-$0.02**
Irrigation	1,903,197	0%	0%	$0	**$0.00**
Commercial	520,496	100%	6%	-$8,984	**-$0.02**
Institutional	71,751	100%	1%	-$1,238	**-$0.02**
Hydrant	115,529	0%	0%	$0	**$0.00**
Inter-Agency	145,896	100%	2%	-$2,518	**-$0.02**
Total	**11,051,716**	**9,032,990**		**-$155,913**	**-$0.02**

While Table 8-18 shows the unit average rate offset for each customer class, the offset is not applied uniformly to all blocks within each customer class. For example, per District policy, the offset is only applied to Indoor Use for Residential customers. This policy promotes affordability for water used for health and sanitary reasons. All of the unit rate offsets are detailed in Table 8-19.

Table 8-19: Revenue Offset Rate Calculations for Block Customers

Revenue Offset Rates	Projected Demand	Accountable Usage	Equivalent Units	Rev Requirements	Unit Rates
Residential + Irrigation					
Indoor Use	4,568,250	100%	4,568,250 ccf	-$143,172	**-$0.03**
Efficient Outdoor Use	4,101,555	0%	0 ccf	$0	**$0.00**
Inefficient Use	510,438	0%	0 ccf	$0	**$0.00**
Excessive Use	1,017,800	0%	0 ccf	$0	**$0.00**
Total	**10,198,044 ccf**		**4,568,250 ccf**	**-$143,172**	
Inter-Agency					
Inter-Agency Block 1	107,926	100%	107,926 ccf	-$2,518	**-$0.02**
Inter-Agency Block 2	25,026	0%	0 ccf	$0	**$0.00**
Inter-Agency Block 3	12,944	0%	0 ccf	$0	**$0.00**
Total	**145,896 ccf**		**107,926 ccf**	**-$2,518**	

8.5.5 RW Current Cost Funding

In Section 0, the methodology for determining the potable water fund's transfer to RW O&M fund for RW O&M costs and current RW debt service were described. The total of $1.1M ($493,200 from Section 7.1 for RW O&M costs and $603,476 from Table 7-1 in Section 7.2 for current RW debt service) is recovered from all customer classes with a unit average rate of $.10 per unit, as shown in Table 8-20. Again, these per unit costs are not distributed evenly across all blocks. As discussed in the previous section, the presence of RW frees up potable water that is now available to "Beyond WB" users. Therefore, "Beyond WB" potable users bear the costs of the RW contribution as shown Table 8-21. Inefficient and excessive usage pays $0.67 per unit towards the RW contribution. Meanwhile, the District's interagency customer pays $0.39 per unit for RW costs for any usage beyond Block 1.

Table 8-20: RW Current Cost Funding Allocated to Customer Classes

	Projected Demand	Allocation Factors	Revenue Requirements	Unit Average Rate ($/ccf)
Residential	8,294,847	75%	$823,108	$0.10
Irrigation	1,903,197	17%	$188,857	$0.10
Commercial	520,496	5%	$51,649	$0.10
Institutional	71,751	1%	$7,120	$0.10
Hydrant	115,529	1%	$11,464	$0.10
Inter-Agency	145,896	1%	$14,477	$0.10
Total	**11,051,716**	**100%**	**$1,096,676**	**$0.10**

Table 8-21: RW Current Cost Funding Rate Calculations for Block Customers

RW Current Cost Funding	Projected Demand[17]	Accountable Usage	Equivalent Units	Rev Requirements	Unit Rates
Residential + Irrigation					
Indoor Use	4,568,250	0%	0 ccf	$0	**$0.00**
Efficient Use	4,101,555	0%	0 ccf	$0	**$0.00**
Inefficient Use	510,438	100%	510,438 ccf	$338,001	**$0.67**
Excessive Use	1,017,800	100%	1,017,800 ccf	$673,964	**$0.67**
Total	**10,198,044 ccf**		**1,528,238 ccf**	**$1,011,965**	
Inter-Agency					
Inter-Agency Block 1	107,926	0%	0 ccf	$0	**$0.00**
Inter-Agency Block 2	25,026	100%	25,026 ccf	$9,542	**$0.39**
Inter-Agency Block 3	12,944	100%	12,944 ccf	$4,935	**$0.39**
Total	**145,896 ccf**		**37,970 ccf**	**$14,477**	

8.5.6 RW Future Cost Funding

Much like the RW O&M costs, future RW capital costs of $204K (from Table 7.1 in Section 7.2) are allocated to all customer classes equally on a per unit basis, as shown in Table 8-22. In similar fashion, the costs are levied on the excessive potable water users for residential and irrigation and on Block 3 usage for Inter-agency customers, as shown in Table 8-23.

[17] See Table 5-1

Table 8-22: RW Future Cost Funding Allocated to Customer Classes

	Projected Demand	Allocation Factors	Revenue Requirements	Unit Average Rate ($/ccf)
Residential	8,294,847	75%	$153,251	**$0.02**
Irrigation	1,903,197	17%	$35,162	**$0.02**
Commercial	520,496	5%	$9,616	**$0.02**
Institutional	71,751	1%	$1,326	**$0.02**
Hydrant	115,529	1%	$2,134	**$0.02**
Inter-Agency	145,896	1%	$2,695	**$0.02**
Total	**11,051,716**	**100%**	**$204,186**	**$0.02**

Table 8-23: RW Future Cost Funding Rate Calculations for Block Customers

RW Future Cost Funding	Projected Demand[18]	Accountable Usage	Equivalent Units	Rev Requirements	Unit Rates
Indoor Use	4,568,250 ccf	0%	0 ccf	$0	**$0.00**
Efficient Use	4,209,481 ccf	0%	0 ccf	$0	**$0.00**
Inefficient Use	535,464 ccf	0%	0 ccf	$0	**$0.00**
Excessive Use	1,030,744 ccf	100%	1,030,744 ccf	$191,109	**$0.19**
Total	**10,343,940 ccf**		**1,030,744 ccf**	**$191,109**	

8.5.7 Proposed Potable Water Commodity Rates

Aggregating the unit costs from the previous subsections and water supply costs in Section 6 creates a proposed total per unit cost for each customer class and block. The proposed commodity rates for each customer class and block are shown in Table 8-24, with each cost component showing its contribution to the total per unit cost.

[18] See Table 5-2

Table 8-24: Proposed Potable Water Commodity Rates by Rate Component

Customer Classes	Water Supply	Delivery	Peaking	Conservation	RW Current Cost Funding	RW Future Capital Costs	Revenue Offsets	Proposed
Residential								
Indoor Use	$1.60	$0.20	$0.48	$0.00	$0.00	$0.00	-$0.03	**$2.25**
Efficient Outdoor Use	$1.60	$0.20	$0.95	$0.00	$0.00	$0.00	$0.00	**$2.75**
Inefficient Use	$2.37	$0.20	$0.99	$0.11	$0.67	$0.00	$0.00	**$4.34**
Excessive Use	$2.71	$0.20	$2.05	$0.44	$0.67	$0.19	$0.00	**$6.26**
Irrigation								
Indoor Use								
Efficient Outdoor Use	$1.60	$0.20	$1.03	$0.00	$0.00	$0.00	$0.00	**$2.83**
Inefficient Use	$2.37	$0.20	$1.17	$0.11	$0.67	$0.00	$0.00	**$4.52**
Excessive Use	$2.71	$0.20	$2.63	$0.44	$0.67	$0.19	$0.00	**$6.84**
Others (Non-Water Budget)								
Commercial	$1.73	$0.20	$0.67	$0.05	$0.10	$0.02	-$0.02	**$2.75**
Institutional	$1.73	$0.20	$0.67	$0.05	$0.10	$0.02	-$0.02	**$2.75**
Hydrant	$2.37	$0.20	$2.64	$0.00	$0.10	$0.02	$0.00	**$5.33**
Inter-Agency								
Inter-Agency Block 1	$1.60	$0.20	$0.63	$0.00	$0.00	$0.00	-$0.02	**$2.41**
Inter-Agency Block 2	$2.37	$0.20	$0.84	$0.11	$0.39	$0.00	$0.00	**$3.91**
Inter-Agency Block 3	$2.71	$0.20	$1.09	$0.44	$0.39	$0.19	$0.00	**$5.02**

Table 8-25 presents a simplified version of the commodity rates shown above in Table 8-24 along with the current commodity rates. The proposed rates are the result of the recommendations contained in Section 4 and the COS principles followed in Section 8.

Table 8-25: Proposed Commodity Rates

Customer Classes	Current	Proposed
Residential		
Indoor Use	$2.14	**$2.25**
Efficient Outdoor Use	$2.85	**$2.75**
Inefficient Use	$5.69	**$4.34**
Excessive Use	$8.54	**$6.26**
Wasteful Use	$11.39	
Irrigation		
Low Volume Use	$2.14	
Efficient Use	$2.85	**$2.83**
Inefficient Use	$5.69	**$4.52**
Excessive Use	$8.54	**$6.84**
Wasteful Use	$11.39	

Table 8-25: Proposed Commodity Rates (Continued)

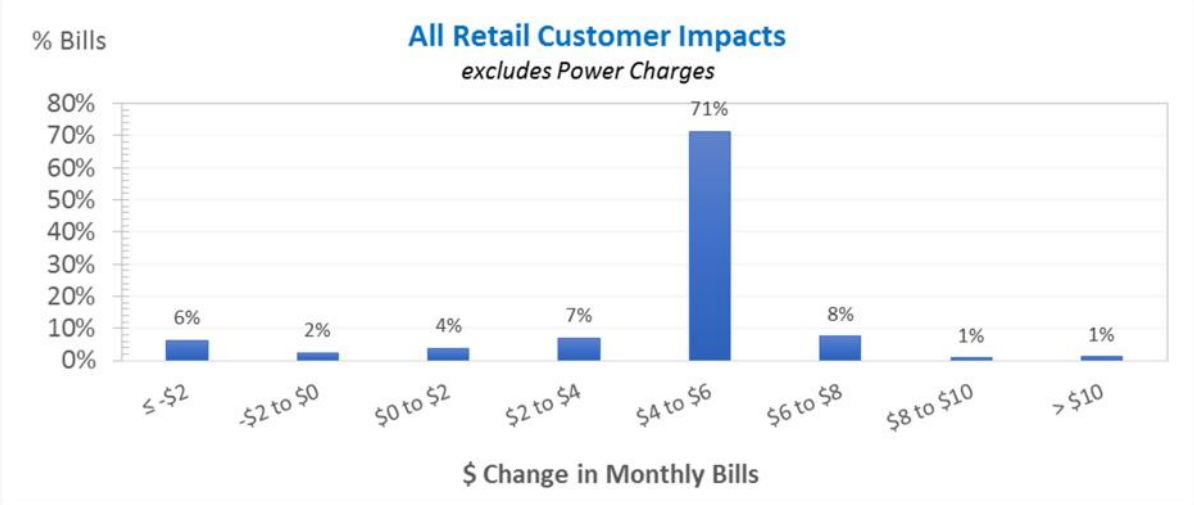
Others (Non-Water Budget)		
Commercial	$2.92	**$2.75**
Institutional	$2.85	**$2.75**
Hydrant	$5.69	**$5.33**
Inter-Agency		
Inter-Agency Block 1	$2.71	**$2.41**
Inter-Agency Block 2	$2.71	**$3.91**
Inter-Agency Block 3	$2.71	**$5.02**

Note that Power Charges and Private Fire Service Charges are not calculated in this Study.

8.6 Customer Impact Analysis

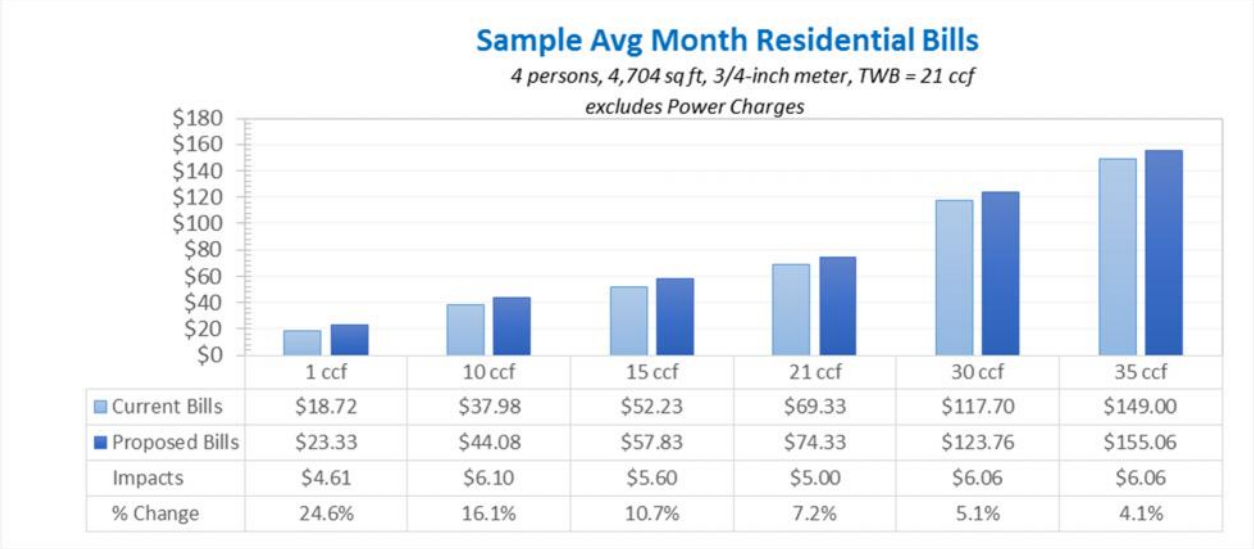
Using consumption data from CY 2014, the proposed rates would result in a monthly increase of $4-$6 for over 70% of the District's potable water customers. Nearly 8% of customers would see their bill go down or break even with the proposed rates. The full customer impacts of the proposed rate adjustments are shown in Figure 8-1. The customer impacts exclude the Power Charges.

Figure 8-1: All Retail Customer Impacts



For the average District household of four persons using 21 ccfs per month, the resulting increase from new rates is $5.00 per month, excluding Power Charges. The water bill impacts for different levels of residential usage are shown in Figure 8-2 below.

Figure 8-2: Sample Average Month Residential Water Bills



	1 ccf	10 ccf	15 ccf	21 ccf	30 ccf	35 ccf
Current Bills	$18.72	$37.98	$52.23	$69.33	$117.70	$149.00
Proposed Bills	$23.33	$44.08	$57.83	$74.33	$123.76	$155.06
Impacts	$4.61	$6.10	$5.60	$5.00	$6.06	$6.06
% Change	24.6%	16.1%	10.7%	7.2%	5.1%	4.1%

9 Recycled Water Cost of Service Analysis and Rates

This section of the report provides a discussion of the revenue requirements, water supply sources, peaking costs, and capital costs for the recycled water utility. The Cost of Service methodology demonstrated in this section demonstrates a clear nexus between the charges for service and the costs to provide such service, as required by Proposition 218.

9.1 RW Commodity Rate Revenue Requirements

Much like the potable water enterprise, reviewing the revenue requirements is the first step in the rate study process. Since RW and potable water share the same monthly fixed charges (found in Table 8-8), the monthly fixed charge revenues are collected in the water fund. Therefore, the revenue requirements provided in Table 9-1 below are solely for RW commodity rates. Starting with the RW fund's O&M expenses of $1.28M, an additional $190.6K goes towards the treatment plant allocation, and $72.1K is transferred to the capital replacement reserve fund. As discussed in Section 0, the potable water fund makes transfers to RW fund for O&M costs, current debt service, and future capital costs. The transfer from the potable water fund (Fund 118) for RW O&M costs is $493K. The RW O&M fund (Fund 130) makes transfers to the RW capital fund (Fund 561) for current RW debt service in the amount of $165K and for future RW capital projects in the amount of $56K, for a total of $221K. In summary, the transfers from Fund 130 includes the transfer in from Fund 118 of $493K and the two transfers out to Fund 561, totaling $221K. Considering these transfers, the net transfers from Fund 130 to other funds is $272K. This amount appears as a negative number since it is being deducted from the RW commodity rate revenue requirement. After adjusting for non-operating revenues, the amount to be recovered from RW rates is $1.267M.

Table 9-1: FY 2016 RW Commodity Rate Revenue Requirements

	FY 2016	Noted Sources
REVENUE REQUIREMENTS		
O&M Expenses	**$1,281,338**	Appendix 2
Water Supply Costs	*$763,856*	
Other O&M Costs	*$517,482*	
Treatment Plant Allocation	**$190,592**	Appendix 2
Reserve Funding	**$72,101**	
O&M Reserve	*$0*	Appendix 2
Rate Stabilization Reserve	*$0*	Appendix 2
Replacement Reserve	*$72,101*	Appendix 2
RW Funding	**-$272,426**	
Transfers to Fund 561 for Current RW Debt Service	*$164,960*	*Section 7.2*
Transfers to Fund 561 for Future RW Capital Projects	*$55,814*	*Section 7.2*
Transfer from Fund 118 for RW O&M	*-$493,200*	*Section 7.1*
Subtotal Revenue Requirements	**$1,271,606**	
LESS ADJUSTMENTS		
Service Revenues	$0	Appendix 2
Non-Operating Revenues	-$4,160	Appendix 2
Subtotal Adjustments	**-$4,160**	
NET REVENUE REQUIREMENTS FROM RATES	**$1,267,446**	

Similar to Water, a cost allocation analysis was conducted on RW revenue requirements. Detailed Cost Allocations can be found in Section 10.6 in the Appendix. Table 9-2 shows the results of the RW costs by Cost Categories.

Table 9-2: RW Revenue Requirements Allocated to Cost Categories

Cost Categories	FY 2016
Water Supply	$763,856
Delivery (Base Fixed Costs)	$573,209
Peaking	$206,966
Future RW Project Funding	$55,814
Current RW Debt Service	$164,960
Revenue Offsets	-$497,360
ADJUSTED REV REQ FROM RATES	**$1,267,446**

9.2 RW Commodity Rate Components

9.2.1 Water Supply Rates

The District relies on several sources of water supply to meet its RW demand. The associated costs per unit for each of the water supply sources are summarized in Table 9-3. Since RW demands are greater than RW supply, MWD Tier 1 and Tier 2 water are used to meet high usage demands. The District also has a take or pay arrangement with Rancho California Water District (RCWD) to help meet RW demand. Given the variance of acquisition costs for each supply source, the costs for all the RW sources are blended into a single per unit cost.

Table 9-3: Available RW Supply Sources

Water Supply	FY 2016 Variable Costs	Quantity Available	Quantity for Sales		Unit Rates	
Local Treatment Plant	$0	431 AF	117,612 ccf	270 AF	$0.00	$0.00 /AF
RCWD RW Purchases	$565,656	376 AF	163,786 ccf	376 AF	$3.46	$1,504.40 /AF
EMWD Supplemental	$53,000	229 AF	99,752 ccf	229 AF	$0.54	$231.44 /AF
Blended RW Cost	**$618,656**	**1,036 AF**	**381,150 ccf**	**875 AF**	**$1.63**	**$707.04 /AF**
MWD Tier 1	$145,200	145 AF	63,162 ccf	145 AF	$2.37	$1,029.69 /AF
MWD Tier 2					$2.71	$1,176.56 /AF
Total	**$763,856**		**444,312 ccf**	**1,020 AF**		

As discussed in Section 3, RW customers share the same water budget structure as potable irrigation customers. In addition, the proposed recommendations for the RW water budget structure contained in Section 4.2 include the elimination of Block 4. The RW supply sources are allocated to each of the RW blocks as shown in Table 9-4. The Blended RW rate is used to meet Block 1 demand. For Block 2, a combination of the Blended RW rate water and MWD Tier 1 water is used, producing a unit rate of $1.80. Block 3 is set at the MWD Tier 2 rate to reflect the next incremental water supply source for Excessive RW Use.

Table 9-4: RW Supply Rate Calculations

RW Water Supply Costs	Projected	Blended RW	MWD Tier 1	MWD Tier 2	Unit Rate
	Demand	381,150 ccf	63,162 ccf		**$ / ccf**
	FY 2016	$1.63	$2.37	$2.71	
Efficient Use	295,933 ccf	295,933 ccf	0	0 ccf	**$1.63 /ccf**
Inefficient Use	109,294 ccf	85,217 ccf	24,077 ccf	0 ccf	**$1.80 /ccf**
Excessive Use	39,085 ccf	0 ccf	39,085 ccf	0 ccf	**$2.71 /ccf**
Total	**444,312 ccf**	**381,150 ccf**	**63,162 ccf**		

9.2.2 RW Delivery Rates

To determine the unit rate for delivery costs, the delivery portion of the revenue requirement (from Table 9-2) is divided by the projected number of RW units sold from Table 5-4 in Section 5.2. As shown in Table 9-5, the unit cost for RW delivery is $1.30 per ccf.

Table 9-5: RW Delivery Rate Calculations

Delivery Rate	FY 2016
Revenue Requirements	$573,209
Units of Service	444,312 ccf
Unit Rate	**$1.30 /ccf**

9.2.3 RW Peaking Rates

RFC performed usage analyses for recycled water customers to determine the peaking ratios for each block using the CY 2014 usage data (See the Appendix, Section 10.7 for details). The Peaking Costs are allocated to blocks based on their relative peaking ratios. Similar to the peaking rate calculations for potable water services, Table 9-6 shows the unit costs associated with peaking costs for each RW block.

Table 9-6: RW Peaking Rate Calculations

	Projected Demand[19]	Peaking Ratios[20]	Equivalent Units	Rev Requirements	Unit Rates ($/ccf)
Efficient Use	295,933 ccf	1.00	295,933 ccf	$127,640	**$0.44 /ccf**
Inefficient Use	109,294 ccf	1.20	131,153 ccf	$56,568	**$0.52 /ccf**
Excessive Use	39,085 ccf	1.35	52,765 ccf	$22,758	**$0.59 /ccf**
Total	**444,312 ccf**		**479,851 ccf**	**$206,966**	

9.2.4 RW Capital Funding Rates

Similar to the Peaking Costs, the RW Capital Funding Costs ($221K), inclusive of RW Current Debt Service ($165K) and Future RW Capital Costs ($56K) Funded from RW Rates (see Section 7.2) are allocated to blocks based on their relative peaking ratios. Table 9-7 summarizes the unit cost for Capital Funding requirements.

[19] See Table 5-4
[20] See Section 10-7 in the Appendix

Table 9-7: RW Capital Funding Rate Calculations

	Projected Demand	Peaking Ratios	Equivalent Units	Rev Requirements	Unit Rates ($/ccf)
Efficient Use	295,933 ccf	1.00	295,933 ccf	$136,156	**$0.47 /ccf**
Inefficient Use	109,294 ccf	1.20	131,153 ccf	$60,342	**$0.56 /ccf**
Excessive Use	39,085 ccf	1.35	52,765 ccf	$24,277	**$0.63 /ccf**
Total	**444,312 ccf**		**479,851 ccf**	**$220,774**	

9.2.5 RW Revenue Offsets

The Transfer from Fund 118 for RW O&M ($493.2K, see Table 9.1) together with the RW non-operating revenues ($4.16K from Table 9-1) is dedicated to providing affordability for efficient RW use. Therefore, the entirety of the transfer is applied towards Block 1 usage, as shown in Table 9-8 below.

Table 9-8: RW Revenue Offset Rate Calculations

	Projected Demand	Allocation Ratios	Equivalent Units	Rev Requirements	Unit Rates ($/ccf)
Efficient Use	295,933 ccf	1.00	295,933 ccf	-$497,360	**-$1.68 /ccf**
Inefficient Use	109,294 ccf	0.00	0 ccf	$0	**$0.00 /ccf**
Excessive Use	39,085 ccf	0.00	0 ccf	$0	**$0.00 /ccf**
Total	**444,312 ccf**		**295,933 ccf**	**-$497,360**	

9.2.6 Proposed RW Commodity Rates

Aggregating the unit costs from the previous subsections creates a proposed total per unit cost for each customer class and block. The proposed commodity rates for each customer class and block are shown in Table 9-9, with each cost component showing its contribution to the total per unit cost.

Table 9-9: RW Commodity Rates by Rate Component

	Water Supply	Delivery	Peaking	RW Capital Funding	Rev Offsets	Unit Rates ($/ccf)
Efficient Use	$1.63	$1.30	$0.44	$0.47	-$1.68	**$2.16 /ccf**
Inefficient Use	$1.80	$1.30	$0.52	$0.56	$0.00	**$4.18 /ccf**
Excessive Use	$2.71	$1.30	$0.59	$0.63	$0.00	**$5.23 /ccf**

Table 9-10 compares the current RW rates with the proposed RW rates and the proposed potable irrigation rates. Since irrigation and RW customers share a common rate structure, the percentage

difference for each block can be compared, which is shown in the last column. Block 2 (Inefficient Use) is the most aligned block, with RW at 92% of the potable irrigation rate.

Table 9-10: Proposed RW Commodity Rates

	Current	Proposed	Potable Rates	% Potable Rates
Efficient Use	$2.14 /ccf	**$2.16 /ccf**	**$2.83**	**76%**
Inefficient Use	$2.85 /ccf	**$4.18 /ccf**	**$4.52**	**92%**
Excessive Use	$3.56 /ccf	**$5.23 /ccf**	**$6.84**	**76%**
Wasteful Use	$4.28 /ccf			

9.3 RW Customer Impact Analysis

Using consumption data from CY 2014, the proposed rates would result in a monthly increase of $10-$20 for 27% of the District's RW customers. The full customer impacts of the proposed rate adjustments are shown in Figure 9-1. The data presented below takes into account the increased monthly service charges, commodity charges, and the block definitions discussed in Section 4.2. The customer impact analysis excludes Power Charges.

Figure 9-1: RW Customer Bill Impacts

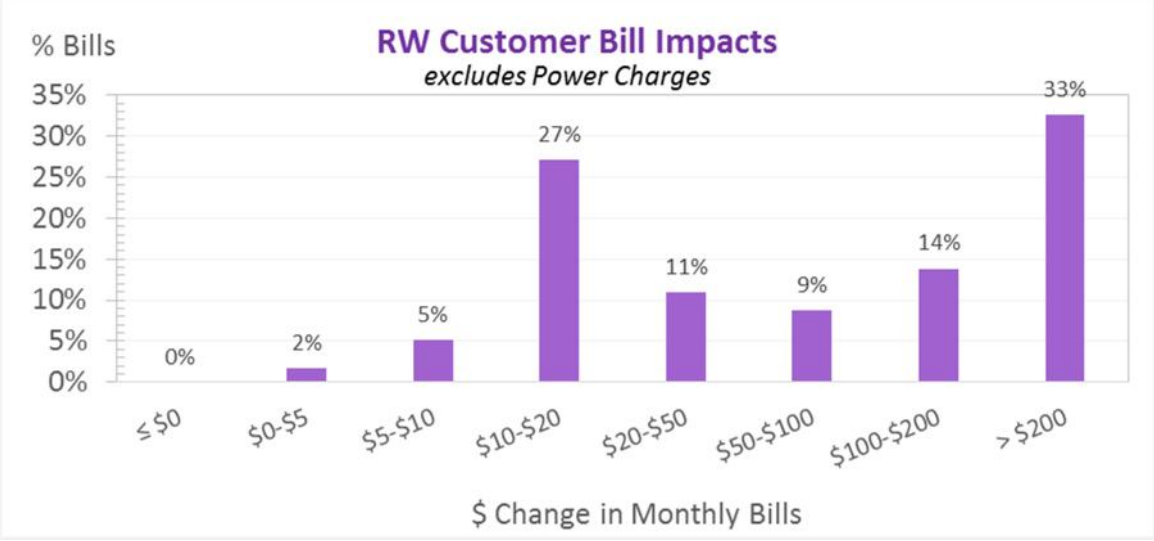
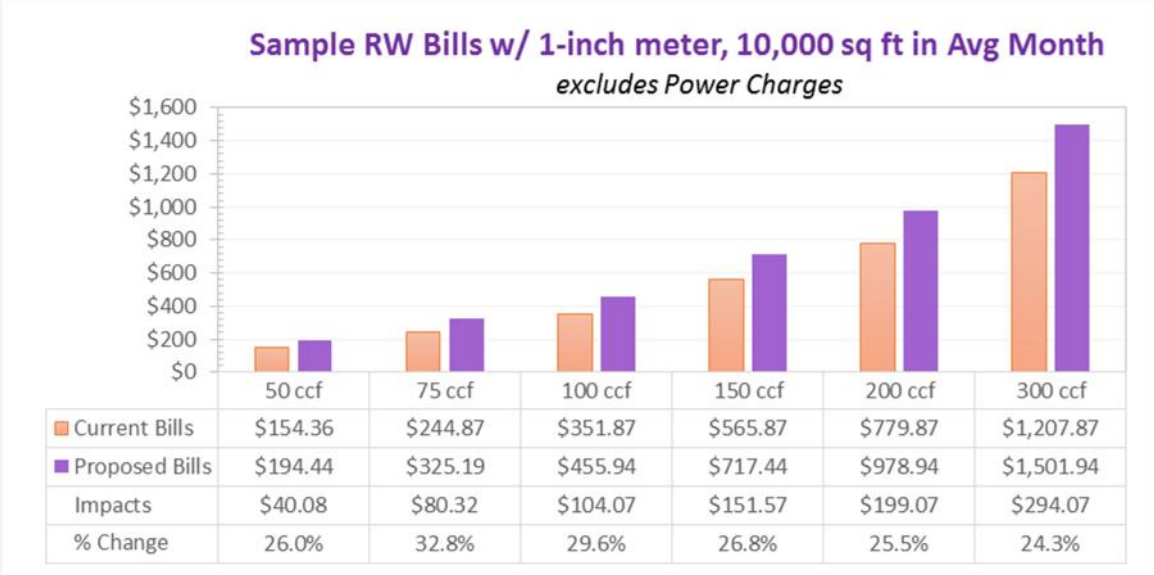


Figure 9-2 shows a sample bill amount for 1-inch meter with 10,000 square feet of irrigable area with different levels of usage. The proposed monthly fixed charges and commodity rates and block definitions would result in a 25-30% increase in the bill amount for most levels of RW usage, as shown below.

Figure 9-2: Sample RW Bills



	50 ccf	75 ccf	100 ccf	150 ccf	200 ccf	300 ccf
Current Bills	$154.36	$244.87	$351.87	$565.87	$779.87	$1,207.87
Proposed Bills	$194.44	$325.19	$455.94	$717.44	$978.94	$1,501.94
Impacts	$40.08	$80.32	$104.07	$151.57	$199.07	$294.07
% Change	26.0%	32.8%	29.6%	26.8%	25.5%	24.3%

10 Appendices

10.1 Appendix 1 – Fund 118 Operating Budget & Assigned Allocation Factors

	EXPENSES	FY 2016	Cost Categories
	OPERATING EXPENSES		
	PURCHASED WATER EXPENSES	***$20,047,737***	
118-40-70105	COLDWATER BASIN	$164,000	Variable Water
118-40-70106	MWD TIER 2 WATER CHARGES	$54,754	Variable Water
118-40-70107	ANNUAL ASSESSMENT MEEKS & DALEY	$150,000	Base
118-40-70109	SAN JACINTO RIVER WMWD (WR18A/B)	$900	Base
118-40-70100	AULD VALLEY PIPELINE WMWD (WREM17)	$8,313,156	Variable Water
118-40-70103	READINESS TO SERVE CHARGE	$783,401	Base
118-40-70101	TVP PIPELINE WMWD (WR24D)	$9,756,936	Variable Water
118-40-70102	TVP PIPELINE LEASE EXPENSE	$250,000	Peaking Day
118-40-70104	CAPACITY RESERVATION CHARGE	$409,590	Peaking Day
118-40-72310	GAGE CANAL CARRYING RIGHTS	$165,000	Base
	RESERVOIRS EXPENSES	***$1,024,716***	
118-50-71120	DIRECT LABOR	$291,139	Storage
118-50-71121	EMP BENEFIT ALLOCATIONS	$217,653	Storage
118-50-72100	REPAIRS & MAINT - INVENTORY	$21,000	Storage
118-50-72101	REPAIRS & MAINT - MATERIALS	$225,000	Storage
118-50-72102	REPAIRS & MAINT - LANDSCAPE	$65,000	Storage
118-50-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$130,000	Storage
118-50-72104	CONSULTING AND PROFESSIONAL FEES	$0	Storage
118-50-72106	CHEMICAL & TREATMENT EXPENSES	$6,000	Storage
118-50-72110	ELECTRICITY	$50,000	Power
118-50-72142	GENERAL LIABILITY & PROPERTY INSURANCE	$13,530	Storage
118-50-72157	LICENSES, PERMIT & FEES	$1,133	Storage
118-50-72350	SUPPLIES	$0	Storage
118-50-72355	PHONES AND CELLPHONES	$0	Storage
118-50-74350	ALLOCATED LABORATORY EXPENSE	$4,261	Storage
	WELLS EXPENSES	***$1,875,420***	
118-51-71120	DIRECT LABOR	$324,777	Base
118-51-71121	EMP BENEFIT ALLOCATIONS	$242,801	Base
118-51-72101	REPAIRS & MAINT - MATERIALS	$103,000	Base
118-51-72102	REPAIRS & MAINT - LANDSCAPE	$18,700	Base
118-51-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$65,000	Base
118-51-72100	REPAIRS & MAINT - INVENTORY	$12,500	Base
118-51-72131	WATER & WW TREATMENT & TESTING	$6,000	Base
118-51-72106	CHEMICAL & TREATMENT EXPENSES	$130,000	Variable Water
118-51-72110	ELECTRICITY	$950,000	Power
118-51-72350	SUPPLIES	$0	Base
118-51-72157	LICENSES, PERMIT & FEES	$10,197	Base
118-51-72104	CONSULTING AND PROFESSIONAL FEES	$0	Base
118-51-74350	ALLOCATED LABORATORY EXPENSE	$12,445	Base
	PUMPING AND BOOSTER STATIONS EXPENSES	***$3,029,762***	
118-52-71120	DIRECT LABOR	$411,518	Pumping
118-52-71121	EMP BENEFIT ALLOCATIONS	$307,647	Pumping
118-52-72101	REPAIRS & MAINT - MATERIALS	$205,000	Pumping
118-52-72102	REPAIRS & MAINT - LANDSCAPE	$38,800	Pumping
118-52-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$41,000	Pumping
118-52-72100	REPAIRS & MAINT - INVENTORY	$12,170	Pumping
118-52-72106	CHEMICAL & TREATMENT EXPENSES	$90,000	Pumping
118-52-72110	ELECTRICITY	$1,902,100	Power
118-52-72350	SUPPLIES	$0	Pumping
118-52-72355	PHONES AND CELLPHONES	$0	Pumping
118-52-72105	CONTRACTUAL & TEMPORARY SERVICES	$0	Pumping
118-52-72157	LICENSES, PERMIT & FEES	$21,527	Pumping

	EXPENSES	FY 2016	Cost Categories
	OPERATING EXPENSES		
	CANYON LAKE WATER TREATMENT PLANT EXPENSES	***$1,368,045***	
118-53-71120	DIRECT LABOR	$200,237	Base
118-53-71121	EMP BENEFIT ALLOCATIONS	$149,696	Base
118-53-72100	REPAIRS & MAINT - INVENTORY	$2,500	Base
118-53-72101	REPAIRS & MAINT - MATERIALS	$121,000	Base
118-53-72102	REPAIRS & MAINT - LANDSCAPE	$12,600	Base
118-53-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$66,000	Base
118-53-72106	CHEMICAL & TREATMENT EXPENSES	$330,000	Variable Water
118-53-72110	ELECTRICITY	$361,000	Power
118-53-72130	REGIONAL TREATMENT COST	$45,543	Variable Water
118-53-72131	WATER & WW TREATMENT & TESTING	$16,000	Base
118-53-72157	LICENSES, PERMIT & FEES	$19,715	Base
118-53-72350	SUPPLIES	$0	Base
118-53-72355	PHONES AND CELLPHONES	$0	Base
118-53-74350	ALLOCATED LABORATORY EXPENSE	$43,754	Base
	TRANSMISSION AND DISTRIBUTION EXPENSES	***$3,230,247***	
118-54-71120	DIRECT LABOR	$1,118,234	T&D
118-54-71121	EMP BENEFIT ALLOCATIONS	$835,982	T&D
118-54-72100	REPAIRS & MAINT - INVENTORY	$373,000	T&D
118-54-72101	REPAIRS & MAINT - MATERIALS	$458,700	T&D
118-54-72103	REPAIRS & MAINT OUTSIDE SERVICES	$330,000	T&D
118-54-72131	WATER & WW TREATMENT & TESTING	$6,000	T&D
118-54-72157	LICENSES, PERMIT & FEES	$35,000	T&D
118-54-72350	SUPPLIES	$10,500	T&D
118-54-74350	ALLOCATED LABORATORY EXPENSE	$62,832	T&D
	METER READING EXPENSES	***$369,747***	
118-55-71120	DIRECT LABOR	$202,992	Billing & CS
118-55-71121	EMP BENEFIT ALLOCATIONS	$151,755	Billing & CS
118-55-72100	REPAIRS & MAINT - INVENTORY	$12,000	Billing & CS
118-55-72101	REPAIRS & MAINT - MATERIALS	$3,000	Billing & CS
	LABORATORY EXPENSES	***$0***	
118-58-71120	DIRECT LABOR	$140,289	Base
118-58-71121	EMP BENEFIT ALLOCATIONS	$104,879	Base
118-58-72100	REPAIRS & MAINT - INVENTORY	$1,000	Base
118-58-72101	REPAIRS & MAINT - MATERIALS	$2,000	Base
118-58-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$9,500	Base
118-58-72104	CONSULTING AND PROFESSIONAL FEES	$0	Base
118-58-72131	WATER & WW TREATMENT & TESTING	$8,500	Base
118-58-72135	ATORY EXPENSES APPLIED TO OPERATING DIVISIONS	-$338,168	Base
118-58-72350	SUPPLIES	$72,000	Base
118-58-74350	ALLOCATED LABORATORY EXPENSE	$0	Base
	METER TESTING & REPLACEMENT EXPENSES	***$832,629***	
118-57-71120	DIRECT LABOR	$145,131	Meter Service
118-57-71121	EMP BENEFIT ALLOCATIONS	$108,498	Meter Service
118-57-72100	REPAIRS & MAINT - INVENTORY	$546,000	Meter Service
118-57-72101	REPAIRS & MAINT - MATERIALS	$18,000	Meter Service
118-57-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$15,000	Meter Service
	NEW METER INSTALLATION	***$536,387***	
118-57-71120	DIRECT LABOR	$135,265	General
118-57-71121	EMP BENEFIT ALLOCATIONS	$101,123	General
118-57-72100	REPAIRS & MAINT - INVENTORY	$300,000	General
118-57-72101	REPAIRS & MAINT - MATERIALS	$0	General
118-57-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$0	General

	EXPENSES	FY 2016	Cost Categories
	OPERATING EXPENSES		
	WATER CONSERVATION EXPENSES	***$583,446***	
118-56-71120	DIRECT LABOR	$73,499	Conservation
118-56-71121	EMP BENEFIT ALLOCATIONS	$54,947	Conservation
118-56-72104	CONSULTING AND PROFESSIONAL FEES	$75,000	Conservation
118-56-72141	ADVERTISING	$0	Conservation
118-56-72158	CONSERVATION PROGRAMS WATER CONSERVATION	$320,000	Conservation
118-56-72350	SUPPLIES	$35,000	Conservation
118-56-72351	FORMS, PRINTING & DUPLICATING COSTS	$25,000	Conservation
118-56-72352	POSTAGE	$0	Conservation
	BACK BASIN WATER TREATMENT PLANT EXPENSES	***$452,061***	
118-59-71120	DIRECT LABOR	$114,016	Base
118-59-71121	EMP BENEFIT ALLOCATIONS	$85,238	Base
118-59-72100	REPAIRS & MAINT - INVENTORY	$500	Base
118-59-72101	REPAIRS & MAINT - MATERIALS	$61,500	Base
118-59-72103	REPAIRS & MAINT - OUTSIDE SERVICES	$16,000	Base
118-59-72106	CHEMICAL & TREATMENT EXPENSES	$90,000	Variable Water
118-59-72110	ELECTRICITY	$40,000	Power
118-59-72130	REGIONAL TREATMENT COST	$40,483	Variable Water
118-59-72131	WATER & WW TREATMENT & TESTING	$1,500	Base
118-59-72157	LICENSES, PERMIT & FEES	$1,133	Base
118-59-74350	ALLOCATED LABORATORY EXPENSE	$1,691	Base
	OTHER DIVISION ADMIN EXPENSES	***$9,363,390***	
118-10-71120	DIRECT LABOR	$950,171	General
118-10-71121	EMP BENEFIT ALLOCATIONS	$710,339	General
118-10-71122	AUTO ALLOWANCES	$7,200	General
118-10-71123	TRAVEL AND TRAINING	$60,500	General
118-10-71124	EMPLOYEE CERTIFICATIONS	$20,100	General
118-10-72100	REPAIRS & MAINT - INVENTORY	$1,500	General
118-10-72101	REPAIRS & MAINT - MATERIALS	$0	General
118-10-72104	CONSULTING AND PROFESSIONAL FEES	$585,000	General
118-10-72140	MAINTENANCE AGREEMENTS	$152,995	General
118-10-72143	LEGAL COSTS	$160,000	General
118-10-72155	PROPERTY TAXES	$1,800	General
118-10-72159	SPONSORSHIPS PUBLIC INFORMATION	$5,000	General
118-10-72350	SUPPLIES	$15,300	Billing & CS
118-10-72353	DUES & SUBSCRIPTIONS	$31,635	General
118-10-72354	UNIFORMS	$49,100	General
118-10-72355	PHONES AND CELLPHONES	$49,804	General
118-10-74120	FACILITIES CHARGES	$176,245	Billing & CS
118-10-74130	COMPUTER CHARGES	$571,297	Billing & CS
118-10-74140	ON ADMINISTRATIVE APPLIED TO WATER DIVISIONS	-$4,167,573	General
118-10-74360	ALLOCATED VEHICLE & EQUIP O&M COSTS	$789,587	General
118-15-72142	GENERAL LIABILITY & PROPERTY INSURANCE	$32,249	General
118-15-72157	LICENSES, PERMIT & FEES	$90,684	General
118-15-74100	BAD DEBT EXPENSE	$220,500	General
118-15-74330	ALLOCATED ENGINEERING SERVICES	$0	General
118-15-74340	ALLOCATED G & A EXPENSE	$4,682,604	General
118-15-74370	LLOCATED WTR DIVISION ADMINISTRATIVE EXPENSE	$4,167,353	General
	SUBTOTAL OPERATING EXPENSES	**$42,713,588**	

	EXPENSES	FY 2016	Cost Categories
	NON-OPERATING EXPENSES		
118-00-86110	OTHER NON-OPERATING EXPENSE	$60,455	General
118-00-86202	CAPITAL OUTLAY CHARGES	$0	Water Capital Cost
118-00-86203	COMPUTER OUTLAY CHARGES	$33,852	Water Capital Cost
118-00-74390	ALLOCATED VEHICLE & EQUIP OUTLAY	$78,920	Water Capital Cost
	SUBTOTAL NON-OPERATING EXPENSES	**$173,227**	
	DEBT SERVICE		
	Current Debt Service	$1,226,733	Water Capital Cost
	SUBTOTAL DEBT SERVICE	**$1,226,733**	
	TRANSFERS TO / (FROM) OTHER FUNDS		
	TRANSFER OUT TO LAKE ELSINORE MAINTENANCE FUND	$0	Water Capital Cost
	TRANSFER OUT TO RATE STABILIZATION FUND 320	$200,000	Water Capital Cost
	TRANSFER IN FROM OTHER FUNDS	-$570,000	General
	TRANSFER OUT TO CONSTRUCTION FUND	$0	Water Capital Cost
	TRANSFER OUT TO GENERAL PURPOSE PROPERTY TAXES	$0	Water Capital Cost
	TRANSFER OUT TO OTHER FUNDS	$117,000	Water Capital Cost
	TRANSFER TO RESERVES	$0	Water Capital Cost
	SUBTOTAL TRANSFERS TO / (FROM) OTHER FUNDS	**-$253,000**	
	RESERVE FUNDING		
	TRANSFER TO OPERATING RESERVES (20%)	$746,880	
	TRANSFER TO RATE STABILIZATION RESERVE	-$1,200,000	
	TRANSFER TO RESERVES EXCESS POWER SURCHARGE	$0	
	TRANSFER TO REPLACEMENT FUND	$5,881,837	
	TRANSFERS TO FUND 561 for RW DEBT SERVICE	*$603,476*	
	TRANSFERS TO FUND 561 for FUTURE RW PROJECTS	*$204,186*	
	TRANSFER TO RW FUND	$493,200	
	SUBTOTAL RESERVE FUNDING	**$6,729,579**	

	REVENUES	FY 2016
	SERVICE REVENUES	
118-00-62100	ELECTRICITY REBATE	$0
118-00-62101	SERVICE SALES (PENALTIES ETC.)	$30,000
118-00-62102	ILLEGAL WATER USE FINE	$5,000
118-00-62103	DELINQUENT CHARGES	$550,000
118-00-62104	REVERSE DELINQUENT CHARGES	-$25,000
118-00-62105	FIRE FLOW AND OTHER SERVICES	$7,500
118-00-62106	BACKFLOW SERVICE CHARGE	$110,000
118-00-62107	FORCE ACCOUNT BILLABLE O & M COSTS	$0
118-00-62108	ACCOUNT SETUP	$85,000
118-00-62109	MOVE HYDRANT FEE	$4,000
118-00-62110	INTERRUPTION SERVICE FEE	$200,000
118-00-62111	RETURNED CHECK CHARGE WATER	$25,000
118-00-62112	CREDIT COLLECTION CHARGE	$8,000
118-00-62113	MWD WATER STORAGE PROGRAM	$17,215
118-00-62114	NEW WATER SERVICE CONNECTION RADIO READS	$117,000
118-00-62115	NEW WATER SERVICE METER CONNECTION	$210,500
118-00-62116	WATER METER INSPECTION FEES	$2,000
118-00-62117	DAMAGE METER CHARGES	$2,000
118-00-62118	WATER STANDBY CHARGES	$150,000
118-00-62119	WATER T/S REVENUE	$322,470
	TOTAL SERVICE REVENUES	**$1,820,685**
	NON-OPERATING REVENUES	
118-00-81140	ALLOCATED INVESTMENT INCOME	$155,913
118-00-82175	LOSS (GAIN) ON DISPOSAL OF ASSETS	
118-00-67503	OTHER OPERATING REVENUE	
118-00-67504	OTHER NON-OPERATING REVENUE	
	TOTAL NON-OPERATING REVENUES	**$155,913**

10.2 Appendix 2 – Fund 130 Operating Budget and Assigned Allocation Factors

	Descriptions	FY 2016	Cost Categories
Fund 130			
10	DISTRICT ADMIN EXPENSES (ALLOCATED)		
130-10-71120	LABOR	$0	General
130-10-71121	FRINGE BENEFITS	$0	General
130-10-72140	MAINTENANCE AGREEMENTS	$1,657	General
130-10-72355	PHONES AND CELLPHONES	$156	General
	TOTAL ADMIN EXPENSES:	*$1,813*	
50	RESERVOIR EXPENSES		
130-50-71120	LABOR	$6,284	RW Storage
130-50-71121	FRINGE BENEFITS	$4,698	RW Storage
130-50-72101	REPAIRS & MAINTENANCE-MATERIALS	$12,160	RW Storage
130-50-72103	REPAIRS & MAINTENANCE OUTSIDE SERVICES	$5,100	RW Storage
130-50-72100	REPAIRS & MAINTENANCE-INVENTORY	$65	RW Storage
130-50-72106	CHEMICAL AND TREATMENT EXPENSES	$0	RW Storage
130-50-72110	ELECTRICITY	$0	RW Storage
	TOTAL RESERVOIR EXPENSES:	*$28,307*	
52	PUMP & BOOSTER STATION EXPENSES:		
130-52-71120	LABOR	$20,226	RW Pumping
130-52-71121	FRINGE BENEFITS	$15,120	RW Pumping
130-52-72101	REPAIRS & MAINTENANCE-MATERIALS	$470	RW Pumping
130-52-72103	REPAIRS & MAINTENANCE OUTSIDE SERVICES	$2,060	RW Pumping
130-52-72100	REPAIRS & MAINTENANCE-INVENTORY	$660	RW Pumping
130-52-72106	CHEMICAL AND TREATMENT EXPENSES	$0	RW Pumping
130-52-72110	ELECTRICITY	$0	RW Pumping
	TOTAL PUMP & BOOSTER STATION EXPENSES:	*$38,536*	
54	TRANSMISSION & DISTRIBUTION EXPENSES		
130-54-71120	LABOR	$12,875	RW T&D
130-54-71121	FRINGE BENEFITS	$9,626	RW T&D
130-54-72101	REPAIRS & MAINTENANCE-MATERIALS	$4,000	RW T&D
130-54-72100	REPAIRS & MAINTENANCE-INVENTORY	$3,600	RW T&D
	TOTAL TRANSMISSION & DISTRIBUTION EXPENSES:	*$30,101*	
55	METER READING EXPENSES		
130-55-71120	LABOR	$0	General
130-55-71121	FRINGE BENEFITS	$0	General
130-55-72100	REPAIRS & MAINTENANCE-INVENTORY	$0	General
130-55-72350	SUPPLIES	$0	General
	TOTAL METER READING EXPENSES:	*$0*	
57	METER TESTING & REPLACEMENT EXPENSES		
130-57-71120	LABOR	$0	General
130-57-71121	FRINGE BENEFITS	$0	General
130-57-72101	REPAIRS & MAINTENANCE-MATERIALS	$0	General
130-57-72100	REPAIRS & MAINTENANCE-INVENTORY	$0	General
	TOTAL METER TESTING & REPLACEMENT EXPENSES:	*$0*	
49	NEW METER INSTALLATION		
130-49-71120	LABOR	$0	General
130-49-71121	FRINGE BENEFITS	$0	General
130-49-72101	REPAIRS & MAINTENANCE-MATERIALS	$0	General
130-49-72100	REPAIRS & MAINTENANCE-INVENTORY	$0	General
	TOTAL METER INSTALLATION EXPENSES:	*$0*	
	GRAND TOTAL O&M COSTS	*$98,757*	
130-15-74340	ALLOCATED G&A EXPENSE	$192,491	General
130-15-74330	ALLOCATED ENGINEERING SERVICES	$0	General
	WATER SUPPLY COSTS		
130-40-70100	AULD VALLEY PIPELINE WMWD (WREM17)	$145,200	Variable Water
130-40-70111	EMWD SUPPLEMENT RW PURCHASES	$53,000	Variable Water
	TRANSFERS TO RESERVES		
130-00-88722	TRANSFER TO OPERATING RESERVES (20%)		RW Capital Cost
130-00-87825	TRANSFER TO RATE STABILIZATION RESERVE		RW Capital Cost
130-00-87826	TRANSFER TO RESERVES EXCESS POWER SURCHARGE		RW Capital Cost
130-00-87255	TRANSFER OUT TO REPLACEMENT FUND		RW Capital Cost
	TOTAL FUND 130 EXPENSES:	*$489,448*	

	Descriptions	FY 2016
Fund 133		
10	**DISTRICT ADMIN EXPENSES (ALLOCATED)**	
133-10-71120	LABOR	
133-10-71121	FRINGE BENEFITS	
130-10-72140	**MAINTENANCE AGREEMENTS**	
130-15-74330	**ALLOCATED ENGINEERING SERVICES**	
	TOTAL ADMIN EXPENSES:	***$0***
61	**RECLAIMED WATER EXPENSES:**	
130-61-71120	LABOR	$129,455
130-61-71121	FRINGE BENEFITS	$96,779
130-61-72101	REPAIRS & MAINTENANCE-MATERIALS	$0
130-61-72103	REPAIRS & MAINTENANCE OUTSIDE SERVICES	$0
130-61-72100	REPAIRS & MAINTENANCE-INVENTORY	$0
130-61-72133	RENT / LEASE EXPENSE	$565,656
130-61-72110	ELECTRICITY	$0
	TOTAL RECLAIMED WATER EXPENSES:	***$791,890***
	GRAND TOTAL O&M COSTS	***$791,890***
130-00-74380	ALLOCATED G&A EXPENSE	$0
	WATER SUPPLY COSTS	
130-61-72120	/D - ADV TREATMENT COSTS/EMWD RW PURCHASES	$0
130-61-72120	EMWD SUPPLEMENTAL WATER PURCHASES	$0
	TOTAL WATER SUPPLY COSTS:	***$0***
	TOTAL FUND 133 EXPENSES:	***$791,890***
	TREATMENT PLANT ALLOCATION:	
	REGIONAL TREATMENT PLANT	$0
	CANYON LAKE TREATMENT PLANT	$109,514
	HORSETHIEF TREATMENT PLANT	$81,078
	TOTAL TREATMENT PLANT ALLOCATION:	***$190,592***
	TRANSFERS TO RESERVES	
	TRANSFERS (FROM) WATER FUND for O&M	*-$493,200*
130-00-87822	TRANSFERS TO OPERATING	$0
130-00-87825	TRANSFERS TO RATE STABILIZATION	$0
130-00-87330	TRANSFERS TO REPLACEMENT FUND	$72,101
	TRANSFERS TO FUND 561 for FUTURE RW PROJECTS	*$55,814*
	TRANSFERS TO FUND 561 for RW DEBT SERVICE	*$164,960*
	TOTAL TRANSFERS TO RESERVES	***-$200,325***
	TOTAL COSTS:	***$1,271,606***

10.3 Appendix 3 – Asset List Allocation

Recycled	Water	Functional Categories	Power	Water Supply	Base - Fixed	Max Day	Max Hour	B&CS	Meter Service	Conservation	RW Funding	Revenue Offsets	Fire	General	Total
$0	$20,231,317	**Source of Supply**	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	8%	0%	100%
$6,017,113	$0	**RW Supply**	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**Water Reliability**	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	100%
$0	$0	**Power**	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**Base**	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**Billing & CS**	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%
$0	$24,942,972	**Meter Service**	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	16%	39%	100%
$0	$0	**Conservation**	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	100%
$0	$27,586,691	**Treatment**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$27,749	$0	**RW Treatment**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$25,040,747	**Pumping**	0%	0%	46%	46%	0%	0%	0%	0%	0%	0%	8%	0%	100%
$0	$0	**RW Pumping**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$20,453,671	**Reservoir**	0%	0%	46%	46%	0%	0%	0%	0%	0%	0%	8%	0%	100%
$0	$0	**RW Storage**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**Fire**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	100%
$0	$0	**Transmission**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$250,513,524	**Distribution**	0%	0%	26%	26%	41%	0%	0%	0%	0%	0%	8%	0%	100%
$0	$0	**RW Transmission**	0%	0%	50%	50%	0%	0%	0%	0%	0%	0%	0%	0%	100%
$6,977,016	$0	**RW Distribution**	0%	0%	28%	28%	44%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**T&D**	0%	0%	32%	32%	31%	0%	0%	0%	0%	0%	6%	0%	100%
$0	$0	**RW T&D**	0%	0%	33%	33%	33%	0%	0%	0%	0%	0%	0%	0%	100%
$0	$0	**Revenue Offsets**	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	100%
$0	$6,437,648	**General**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
$0	$87,297	**Land**	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%
$0	$90,515	**Well**	0%	0%	92%	0%	0%	0%	0%	0%	0%	0%	8%	0%	100%
$13,021,878	**$375,384,383**	**Total Water Asset by Cos**	**$0**	**$0**	**$117,436,986**	**$98,740,901**	**$102,432,196**	**$0**	**$11,127,754**	**$0**	**$0**	**$0**	**$29,348,822**	**$16,297,724**	**$375,384,383**
	Water Capital Cost Allocation Factors		0%	0%	31%	26%	27%	0%	3%	0%	0%	0%	8%	4%	
	$13,021,878	**Total RW Asset by Cost C**	**$0**	**$0**	**$7,969,048**	**$1,951,934**	**$3,100,896**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$13,021,878**
	RW Capital Cost Allocation Factors		0%	0%	61%	15%	24%	0%	0%	0%	0%	0%	0%	0%	

10.4 Appendix 4 – Cost Allocation Factors used in the Study

	Peaking Factors	Base - Fixed	Max Day	Max Hour
Base	1.00	100%		
Max Day	2.00	50%	50%	
Max Hour	3.60	28%	28%	44%

Sources: Peaking Factors by Email by Margie Armstrong 3/4/2014

Cost Categories	Power	Water Supply	Base - Fixed	Max Day	Max Hour	B&CS	Meter Service	Conservation	RW Funding	RW Future Capital Costs	Revenue Offsets	Fire	General	Total
Source of Supply			92.0%									8.0%		100%
RW Supply			100.0%											100%
Variable Water		100.0%												100%
Water Reliability									100.0%					100%
Power	100.0%													100%
Base			100.0%											100%
Peaking Day			50.0%	50.0%										100%
Billing & CS						100.0%								100%
Meter Service							44.6%					16.2%	39%	100%
Conservation								100.0%						100%
Treatment			50.0%	50.0%	0.0%									100%
RW Treatment			50.0%	50.0%	0.0%									100%
Pumping			46.0%	46.0%	0.0%							8.0%		100%
RW Pumping			50.0%	50.0%	0.0%									100%
Storage			46.0%	46.0%	0.0%							8.0%		100%
RW Storage			50.0%	50.0%	0.0%									100%
Fire												100.0%		100%
Transmission			50.0%	50.0%	0.0%									100%
Distribution			25.6%	25.6%	40.9%							8.0%		100%
RW Transmission			50.0%	50.0%	0.0%									100%
RW Distribution			27.8%	27.8%	44.4%									100%
T&D			31.7%	31.7%	30.7%	0.0%	0.0%	0.0%			0.0%	6.0%	0%	100%
RW T&D			33.3%	33.3%	33.3%									100%
Revenue Offsets											100.0%			100%
General						0.0%							100.0%	100%
Public Fire			27.8%	27.8%	44.4%							0.0%		100%
W Future Capital Costs										100.0%				100%
Current Debt Service									100.0%					100%
RW Capital Cost	0.0%	0.0%	61.2%	15.0%	23.8%	0.0%	0.0%	0.0%			0.0%	0.0%	0%	100%
Water Capital Cost	0.0%	0.0%	31.3%	26.3%	27.3%	0.0%	3.0%	0.0%			0.0%	7.8%	4%	100%

10.5 Appendix 5 – Potable Revenue Requirements and Allocations to Cost Categories

DESCRIPTIONS	FY 2016	Power	Water Supply	Base - Fixed	Max Day	Max Hour	B&CS	Meter Service	Conservation	RW Funding	RW Future Capital Costs	Revenue Offsets	Fire	General
REVENUE REQUIREMENTS														
O&M EXPENSES	$42,713,588	$3,303,100	$18,924,872	$5,127,601	$2,319,800	$990,609	$1,132,589	$371,459	$583,446	$0	$0	$0	$496,947	$9,463,164
NON-OPERATING EXPENSES	$173,227	$0	$0	$35,280	$29,663	$30,772	$0	$3,343	$0	$0	$0	$0	$8,817	$65,351
DEBT SERVICE	$1,226,733	$0	$0	$383,777	$322,679	$334,742	$0	$36,365	$0	$0	$0	$0	$95,910	$53,260
TRANSFERS TO / (FROM) OTHER FUNDS	-$253,000	$0	$0	$99,172	$83,384	$86,501	$0	$9,397	$0	$0	$0	$0	$24,784	-$556,237
ER TO RESERVES EXCESS POWER SURCHARGE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
RESERVE FUNDING (O&M / RATE STAB)	-$453,120	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$453,120
TRANSFER TO REPLACEMENT FUND	$5,881,837	$0	$0	$1,840,101	$1,547,155	$1,604,993	$0	$174,359	$0	$0	$0	$0	$459,862	$255,366
ANSFERS TO FUND 561 for RW DEBT SERVICE	$603,476	$0	$0	$0	$0	$0	$0	$0	$0	$603,476	$0	$0	$0	$0
SFERS TO FUND 561 for FUTURE RW PROJECTS	$204,186	$0	$0	$0	$0	$0	$0	$0	$0	$0	$204,186	$0	$0	$0
TRANSFER TO RW FUND	$493,200	$0	$0	$0	$0	$0	$0	$0	$0	$493,200	$0	$0	$0	$0
LESS REVENUE OFFSETS														
SERVICE REVENUES	-$1,493,185	$0	$0	-$373,748	-$169,089	-$72,205	-$82,554	-$27,075	-$42,527	$0	$0	$0	-$36,222	-$689,764
NEW WATER SERVICE METER CONNECTION	-$327,500	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$327,500
NON-OPERATING REVENUES	-$155,913	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$155,913	$0	$0
NET REVENUE REQUIREMENT FROM RATES	**$48,613,529**	**$3,303,100**	**$18,924,872**	**$7,112,183**	**$4,133,593**	**$2,975,413**	**$1,050,035**	**$567,847**	**$540,919**	**$1,096,676**	**$204,186**	**-$155,913**	**$1,050,098**	**$7,810,520**
General Cost Allocation	$7,810,520	$0	$0	$3,507,140	$2,038,346	$1,467,228	$517,791	$280,015	$0	$0	$0	$0		-$7,810,520
Public Fire Cost Allocation	$694,588	$0	$0	$192,941	$192,941	$308,706	$0	$0	$0	$0	$0	$0	-$694,588	
ADJUSTED REV REQ FROM RATES	**$48,613,529**	**$3,303,100**	**$18,924,872**	**$10,812,264**	**$6,364,880**	**$4,751,346**	**$1,567,826**	**$847,863**	**$540,919**	**$1,096,676**	**$204,186**	**-$155,913**	**$355,510**	**$0**

10.6 Appendix 6 – RW Revenue Requirements and Allocations to Cost Categories

DESCRIPTIONS	FY 2016	Power	Water Supply	Base - Fixed	Max Day	Max Hour	B&CS	Meter Service	Conservation	RW Funding	RW Future Capital Costs	Revenue Offsets	Fire	General
REVENUE REQUIREMENTS														
TOTAL RW O&M EXPENSES	$1,281,338	$0	$763,856	$269,689	$43,455	$10,034	$0	$0	$0	$0	$0	$0	$0	$194,304
TREATMENT PLANT ALLOCATION	$190,592	$0	$0	$116,637	$28,569	$45,386	$0	$0	$0	$0	$0	$0	$0	$0
RESERVE FUNDING	$72,101	$0	$0	$44,124	$10,808	$17,169	$0	$0	$0	$0	$0	$0	$0	$0
RANSFERS FROM WATER FUND FOR RW O&M	-$493,200	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$493,200	$0	$0
SFERS TO FUND 561 for FUTURE RW PROJECTS	$55,814	$0	$0	$0	$0	$0	$0	$0	$0	$0	$55,814	$0	$0	$0
RANSFERS TO FUND 561 for RW DEBT SERVICE	$164,960	$0	$0	$0	$0	$0	$0	$0	$0	$164,960	$0	$0	$0	$0
LESS REVENUE OFFSETS														
SERVICE REVENUES	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
NON-OPERATING REVENUES	-$4,160	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	-$4,160	$0	$0
NET REVENUE REQUIREMENT FROM RATES	**$1,267,446**	**$0**	**$763,856**	**$430,451**	**$82,832**	**$72,589**	**$0**	**$0**	**$0**	**$164,960**	**$55,814**	**-$497,360**	**$0**	**$194,304**
General Cost Allocation	$194,304	$0	$0	$142,759	$27,471	$24,074	$0	$0	$0	$0	$0			-$194,304
ADJUSTED REV REQ FROM RATES	**$1,267,446**	**$0**	**$763,856**	**$573,209**	**$110,303**	**$96,663**	**$0**	**$0**	**$0**	**$164,960**	**$55,814**	**-$497,360**	**$0**	**$0**

10.7 Appendix 7 – Peaking Factor Analysis

	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Annual	Jul-14
Residential	**559,495**	**522,285**	**464,398**	**526,636**	**756,256**	**813,920**	**877,821**	**801,738**	**793,203**	**773,958**	**554,153**	**471,642**	**7,915,505**	877,821
Low Volume Use	361,340	335,957	346,118	324,650	390,354	370,960	400,067	395,369	368,591	390,815	329,637	345,476	**4,359,334**	400,067
Conservation Base Use	107,702	122,131	97,386	170,068	296,645	365,565	397,376	344,826	332,218	234,167	138,531	73,681	**2,680,296**	397,376
Inefficient Use	20,326	19,924	6,741	11,484	25,825	35,520	36,670	27,970	38,898	38,941	26,902	13,943	**303,144**	36,670
Excessive Use	14,925	12,373	3,794	5,912	14,049	17,003	17,943	12,758	20,687	27,993	17,840	9,614	**174,891**	17,943
Wasteful Use	55,202	31,900	10,359	14,522	29,383	24,872	25,765	20,815	32,809	82,042	41,243	28,928	**397,840**	25,765
Irrigation	**97,098**	**108,052**	**71,191**	**101,177**	**215,391**	**210,719**	**245,731**	**231,861**	**221,179**	**200,549**	**124,380**	**73,967**	**1,901,295**	245,731
Low Volume Use	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0
Conservation Base Use	53,692	62,905	60,265	82,243	144,568	161,619	183,473	177,301	151,187	108,140	65,291	40,833	**1,291,517**	183,473
Inefficient Use	9,813	11,157	4,411	6,650	17,264	21,879	26,411	23,812	26,659	23,474	13,854	7,190	**192,574**	26,411
Excessive Use	7,145	8,393	2,066	4,165	10,178	11,689	15,103	12,894	16,529	18,945	10,678	5,655	**123,440**	15,103
Wasteful Use	26,448	25,597	4,449	8,119	43,381	15,532	20,744	17,854	26,804	49,990	34,557	20,289	**293,764**	20,744
Commercial	**42,907**	**41,832**	**38,861**	**40,474**	**58,333**	**63,387**	**60,508**	**59,166**	**58,798**	**57,469**	**49,996**	**44,905**	**616,636**	60,508
Institutional	**42,907**	**41,832**	**38,861**	**40,474**	**58,333**	**63,387**	**60,508**	**59,166**	**58,798**	**57,469**	**49,996**	**44,905**	**616,636**	60,508
Hydrant	**4,704**	**5,233**	**3,239**	**4,419**	**8,798**	**7,411**	**6,170**	**7,148**	**17,930**	**14,856**	**21,247**	**14,356**	**115,511**	6,170
Inter-Agency	**15,448**	**15,123**	**13,989**	**13,520**	**12,044**	**9,222**	**9,518**	**10,113**	**8,926**	**11,173**	**12,132**	**14,688**	**145,896**	9,518
Total	**859,657**	**842,409**	**701,730**	**827,877**	**1,324,546**	**1,378,765**	**1,505,987**	**1,401,053**	**1,380,013**	**1,316,023**	**936,284**	**738,430**	**13,212,774**	1,505,987

Peaking Factors	Peak Month	Min Month	Max / Min
Residential	877,821	464,398	190%
Irrigation	245,731	71,191	345%
Commercial	63,387	38,861	165%
Institutional	63,387	38,861	165%
Hydrant	21,247	3,239	655%
Inter-Agency	15,448	8,926	175%

	Cumulative Max Month Usage				Peaking Ratios			
Peaking Analysis	Residential	Irrigation	Inter-Agency	Recycled Water	Residential	Irrigation	Inter-Agency	Recycled Water
Indoor Use	400,067	0			0.50	-	-	-
Efficient Outdoor Use	797,443	183,473	9,000	38,457	1.00	1.00	1.00	1.00
Inefficient Use	834,113	209,884	12,000	46,148	1.05	1.14	1.33	1.20
Excessive Use	852,056	224,987	15,448	51,917	2.17	2.57	1.72	1.35
Wasteful Use	877,821	245,731						