



# **2015 Canal Rate Study Report**

## **Coachella Valley Water District**

February 23, 2016

February 24, 2016

Katherine Godbey  
Director of Finance, Coachella Valley Water District  
75515 Hovley Lane East  
Palm Desert, CA 92260

Dear Ms. Godbey:

Hawksley Consulting (a subsidiary of MWH Global) is pleased to provide this final Canal Rate Study Report. This report encompasses a great deal of effort from not only Hawksley consultants, but also from you and your staff. We are very thankful of the time and dedication put into the study by Coachella Valley Water District, without which we would not have been able to complete our work.

The report includes a comprehensive description of our analysis and findings with respect to the financial plan, cost-of-service, and rate design evaluation for Coachella Valley Water District canal system.

Our cost of service efforts were completed using standard cost allocation and rate setting principles published in the case of water utilities by the American Water Works Association.

The report body is meant to provide the overall information and describe the basis for our findings. The report appendix is a compilation of our significant analysis including print outs of our cost-of-service allocations, the financial planning analysis, and other supporting documents.

We look forward to your comments as we work toward completing this report.

Sincerely,



Mark Hildebrand  
Project Manager

# Executive Summary

## 2015 Canal Rate Study Report

Coachella Valley Water District (“District” or “CVWD”) engaged Hawksley Consulting (a subsidiary to MWH Global) to study the District’s canal utility finances and develop recommendations for updating the canal service rates. The rates recommended in the 2015 Canal Rate Study Report (Report) reflect the District’s cost of providing canal services to customers. This Report includes a long range financial plan, cost-of-service analysis, rate design recommendations, and culminates in a recommended five-year rate schedule for the District’s Canal rates.

**Methodology** - Hawksley used standard water utility ratemaking practices to calculate the proposed rates as promulgated by the American Water Works Association (AWWA). The basis for the proposed rate schedules follows industry-accepted cost-of-service principals and complies with all requirements as stipulated by State of California law. The proposed rates are designed to meet current and future revenue needs. This project followed three major phases: financial planning, cost of service and rate design.

The methodology used in this Report is consistent with industry standards established by AWWA’s M1 Manual<sup>1</sup>, which documents many of the standards used by professionals in the water utility rate-setting industry. The cost-of-service analysis proportionally allocates the revenue requirements for the Canal utility among the utility’s various customer classes. Following the determination of overall revenue requirements, the utility’s costs, expenses, and assets were categorized by major operating functions to determine the costs associated with each respective function. Subsequently, the functionalized costs were allocated to each respective customer class based on the service requirements of each respective customer class. This analysis included a review of volumetric flow data, number of customers, and “gate orders”. These metrics were all used to determine how to allocate costs among the various customer classes. The Report’s recommended rate structures are designed to fund the utility’s long-term projected costs of providing service while proportionally allocating costs among customers, providing a reasonable and prudent balance of revenue stability, and complying with the substantive requirements of California Constitution article XIII D, section 6 (“Article XIII D”), commonly known as Proposition 218.

**Financial Plan** - The financial plan developed as part of this Report recommends a rate adjustment schedule and debt issuance strategy that will maintain the District’s debt service coverage target and reserve targets through FY2021. The recommended rate adjustments and debt strategy are summarized in the table below.

### Recommended Rate Adjustments and Debt Issuance through FY2021<sup>2</sup>

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>Rate Adjustment</b>	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
<b>Debt Proceeds</b>	\$0M	\$12M	\$0M	\$0M	\$8M	\$0M	\$0M	\$0M
<b>Ending Balance</b>	\$28.7M	\$34.2M	\$32.3M	\$31.5M	\$37.1M	\$33.9M	\$32.5M	\$31.1M
<b>Target Reserves</b>	\$29.4M	\$30.8M	\$32.0M	\$32.9M	\$34.5M	\$35.1M	\$35.7M	\$36.6M
<b>Debt Coverage Ratio</b>	NA	12.32	7.44	7.95	6.59	5.74	5.89	6.12

<sup>1</sup> Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1

<sup>2</sup> The rate adjustments in 2022 and 2023 are assumed market adjustments that will be made at that time by the District. Legally the District can only adopt a 5-year schedule of rates.

**Cost of Service** – The Report recommends that the four existing canal customer classes be reorganized into the following groups, as explained below.

**Class 1** – “Class 1” customers consist of all canal water customers who use canal water for commercial agricultural activities—i.e., customers who use canal water for the purpose of producing an agricultural commodity for commercial purposes, including growing crops and raising animals for the commercial production and/or sale of food, fiber, fuel and other products. This customer class is designated as having priority access to the District’s Colorado River water rights.

**Class 2** – “Class 2” customers consist of all other canal water customers—i.e., customers who use canal water for: groundwater replenishment, including the District Replenishment Fund; drinking water production; landscape irrigation; recreation; and other activities, including, but not limited to, golf courses, hunting clubs, polo fields, and the District Nonpotable Water Fund. The sole difference in the cost of serving Class 1 vs. Class 2 is the cost of Quantification Settlement Agreement (QSA) water purchases. The cost of the QSA water purchases will be collected from Class 2 customers through a Water Supply Surcharge (in \$/AF).

**Construction Meters** – Previously known as Class 4, “Construction Meter” users have the same cost responsibility as Class 2 in addition to the cost of operating the construction meter program.

**Recommended Rates** - The proposed rates are designed to ensure that each customer class and each customer within each class pays its own proportionate share of the cost of providing service. The rate structure consists of a fixed Gate Reading Charge and a Volumetric Charge. The Volumetric Charge has three components (Commodity Charge, Quagga Mussel Mitigation Surcharge and Water Supply Surcharge), but a canal customer may not be subject to all three charges. The charges and the individual components are as follows:

**Commodity Charge** – The Commodity Charge pays for basic service and is charged on a volumetric dollar per acre-foot basis. The Commodity Charge is calculated by dividing the rate revenue requirement for basic service by forecasted water sales.

**Gate Reading Charge** – Scheduled Gate Orders (requested visits to open, close or otherwise modify the gate position) will be charged when customers place an order. Unscheduled Gate Orders will be charged a rate that is twice the cost of Scheduled Gate Orders.

**Quagga Mussel Mitigation Surcharge** – The Quagga surcharge is calculated by dividing the Quagga Mussel Control Program rate revenue requirement by forecasted water sales.

**Outside ID-1 Surcharge** – An Outside Improvement District 1 (ID-1) Surcharge will be charged based on property acreage and is designed to be proportionate to the ID-1 property tax that was not paid by those customers.

**Water Supply Surcharge** – The Water Supply Surcharge is charged to Class 2 customers and Construction Meters and is calculated by dividing the known QSA water purchase costs in a given year by the anticipated Class 2 and Construction Meter water sales in that year.

This Report recommends that the current pumping charge be eliminated.

The proposed rate schedule for FY2017 is as follows:

	<b>Commodity Charge</b>	+	<b>Water Supply Surcharge</b>	+	<b>Quagga Mussel Mitigation Surcharge</b>	=	<b>Total Volumetric Charge</b>	<b>Gate Charge</b>	
	\$/AF		\$/AF		\$/AF		\$/AF	\$ per read	
Class 1	\$33.48	+	\$0.00	+	\$2.65	=	\$36.13	Read Only:	NA
Class 2	\$33.48	+	\$53.99	+	\$2.65	=	\$90.12	Scheduled:	\$16.25
Construction Water	\$45.15	+	\$53.99	+	\$2.65	=	\$101.79	Unscheduled:	\$32.51
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>								<b>\$3.69</b>	

A complete schedule of proposed rates from FY2017 to FY2021 is provided in the Report.

# Coachella Valley Water District 2015 Canal Rate Study Report

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# 1. INTRODUCTION

Coachella Valley Water District (“District” or “CVWD”) engaged Hawksley Consulting (a subsidiary to MWH Global) to study the District’s canal utility finances and develop recommendations for updating the canal service rates. The rates recommended in this Canal Rate Study Report (Report) reflect the District’s cost of providing canal services to customers. This Report includes a long range financial plan, cost-of-service analysis, rate design recommendations, and culminates in a recommended five-year rate schedule for the District’s Canal rates.

## 1.1. PURPOSE OF THE REPORT

The purposes of the study performed by Hawksley for CVWD are as follows:

- 1) Project the revenue requirements and develop a cash flow analysis for a 10-year study period.
- 2) Prepare a cost-of-service allocation to customer classes including:
  - a) Calculate the revenue requirement for a test year;
  - b) Develop a recommendation for customer classifications;
  - c) Determine customer class demands;
  - d) Allocate revenue requirements;
  - e) Calculate the average unit cost by class;
- 3) Design of canal water service user rates; and
- 4) Deliver a final report covering the financial plan, cost of service allocations, and recommended canal water service user rates.

## 1.2. PROJECT METHODOLOGY

Hawksley used standard water utility ratemaking practices to calculate the proposed rates as promulgated by the American Water Works Association (AWWA). The basis for the proposed rate schedules follows industry-accepted cost-of-service principals and complies with all requirements as stipulated by State of California law. The proposed rates are designed to meet current and future revenue needs.

This project followed three major phases:

1. **Financial planning** compares the overall revenues of the District’s Canal utility to its overall revenue requirements to determine the rate adjustments needed over a multi-year period. The revenue requirements methodology used in this Report is consistent with industry standards established by AWWA’s M1 Manual<sup>3</sup>, which documents many of the standards used by professionals in the water utility rate-setting industry. The Report’s revenue requirements analysis compares the revenues of the utility to its operating and capital costs to determine the adequacy of the existing rates to recover the utility’s costs. The revenue requirements are analyzed through the development of a long-term financial plan. Based on the best information currently available, the current financial plan incorporates projected operations and maintenance costs, capital expenses, debt issuances and service, and growth assumptions to estimate annual revenues requirements.

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<sup>3</sup> Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1 (6<sup>th</sup> Edition).

2. The **Cost-of-Service** analysis proportionally allocates the revenue requirements for the Canal utility among the utility's various customer classes and the customers within each class. Following the determination of overall revenue requirements, the utility's costs, expenses, and assets were categorized by major operating functions to determine the costs associated with each respective function. Subsequently, the functionalized costs were allocated to each respective customer class based on the service requirements of each respective customer class. This analysis included a review of volumetric flow data, number of customers, and "gate orders". These metrics were all used to determine how to allocate costs among the various customer classes and, therefore, the customers within each class.
3. The final part of the analysis, **Rate Design**, determines how rate revenues will be collected from the respective customer classes in a manner that respects the results of the cost-of-service analysis while also addressing District goals and objectives for pricing. This Report's recommended rate structure is designed to fund the utility's long-term projected costs of providing service while proportionally allocating costs among customers, providing a reasonable and prudent balance of revenue stability, and complying with the substantive requirements of California Constitution article XIII D, section 6 ("Article XIII D"), commonly known as Proposition 218.

Each of these steps is described in more detail below.

### 1.3. SOURCES OF INFORMATION USED IN THE REPORT

We have reviewed a number of documents provided by CVWD during the course of our study. Where applicable, we have made a works cited notation indicating the source and date of the documents within the body of this Report.

A summary of the key information reviewed for this Report is as follows:

- Detailed line-item budgets for the Canal fund, with actuals from fiscal year 2011-12 (FY2012) through FY2015 and budget values for FY2016 through FY2020
- Customer billing data by customer class from March 2011 through December 2014
- Comprehensive Annual Financial Reports (CAFR) of the District for FY2012 through FY2014
- Canal revenue and consumption by class from FY2003 through FY2014
- Actual reserve levels at the end of FY2013, FY2014, and FY2015
- Actual capital expenses by fund for FY2011 through FY2015
- Colorado River Water Order and Canal Water Balance, 2009 – 2013
- CVWD Supplemental Water Budget, FY2014 – FY2019
- Detailed canal and general asset registry
- Capital Improvement Plans for the Canal fund for FY2016 through FY2020
- CVWD Reserve Policy
- Irrigation Pump Station Summary for 2012
- Memorandum regarding "Proposed Rates for Canal Water Service", from Steve B. Abbott of Redwine and Sherrill to CVWD Board of Directors, February 12, 2016

### 1.4. HOW TO READ THIS REPORT

The body of the Report is meant to be a summarized narrative of the technical analysis completed by Hawksley during the scope of our study. For the interested reader, the appendices provide a complete tabulation of our calculations and other materials. We reference these materials at various times in the body of the Report. The appendices are a comprehensive but not an exhaustive representation of our entire efforts.

Additional details of the financial analysis and cost-of-service methodology have been documented by virtue of the Microsoft Excel models titled “COS Model Canal final” and “Coachella Canal Water Financial Model.”

## 1.5. ACRONYMS

AF	acre-feet
AWWA	American Water Works Association
CAFR	Comprehensive Annual Financial Report
CIP	Capital Improvement Plan
CVWD	Coachella Valley Water District
DSC	Debt Service Coverage
FY	fiscal year
ID	Improvement District
IWAA	Irrigation Water Availability Assessment
MWD	Metropolitan Water District
O&M	operations and maintenance
QSA	Quantification Settlement Agreement
SWP	State Water Project

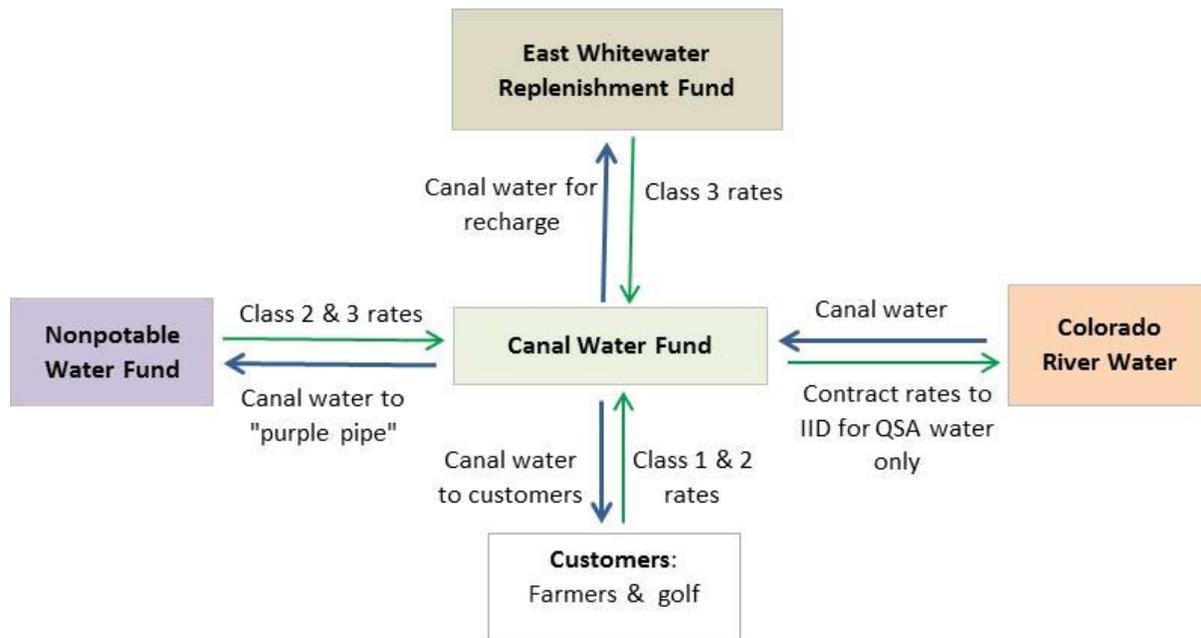
## 2. CANAL ENTERPRISE FINANCIAL PLAN

CVWD operates the canal utility as an enterprise fund. Canal water services are accounted for in a fund called the “Canal Water Fund” (referred to as “Canal Fund” at times in this Report).

### 2.1. CANAL UTILITY BACKGROUND

CVWD is a local government agency, governed by five directors elected to four-year terms by district voters. Delivering irrigation water is one of CVWD’s multiple water services. More than two-thirds of the 60,000 acres of local farmland is irrigated in part with Colorado River water delivered via the 123-mile Coachella Canal, a branch of the All-American Canal. The Coachella Canal delivers approximately 280,000 acre-feet annually of imported water for irrigation and an additional 40,000 AF, for recharging local aquifers and supplementing the recycled water system (see Figure 2-1).

**Figure 2-1 – Canal Water Fund Services and Customers**



The District is a signatory to the 2003 Quantification Settlement Agreement (QSA), which had the goal of conserving Colorado River water supplies, stabilizing CVWD water supplies, and reducing California’s demand on the Colorado River. CVWD cosigned the QSA with the Metropolitan Water District of Southern California (MWD), Imperial Irrigation District and San Diego County Water Authority. The QSA quantifies the Colorado River water allocations of California’s agricultural water contractors for 75 years and provides for the transfer of water between agencies. Under the QSA, the District has a base allocation of 330,000 AF per year. In accordance with the QSA, CVWD entered into water transfer agreements with Metropolitan Water District (MWD) and the Imperial Irrigation District (IID) that increase the District’s Colorado River supplies up to 459,000 AF in 2026.

## 2.2. CURRENT RATES AND REVENUE SOURCES

The Canal Fund's primary revenue source comes from the rates and charges assessed to canal water customers. The Canal Fund currently has four classes of customers:

**Class 1** – Primarily agricultural customers

**Class 2** - Predominantly golf courses

**Class 3** – CVWD Groundwater Replenishment program

**Class 4** - Construction meter users

### 2.2.1. CURRENT COMMODITY CHARGES

Each customer class is charged a different commodity charge for volumetric water usage, as summarized in Table 2-1.

**Table 2-1 – Schedule of Canal Commodity Charges**

	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>
<b>Commodity Charge (\$/AF)</b>	\$28.95	\$42.15	\$86.25	\$140.00

As an exception to the above, there is one customer that is located outside of the CVWD service area, which paid \$112.20 per acre foot in FY2014 for canal water usage.

In addition to the commodity charge an additional \$5 per AF Quagga Mussel Mitigation Surcharge is imposed on canal water customers to fund CVWD's Quagga Mussel Control Program.

### 2.2.2. IRRIGATION WATER AVAILABILITY ASSESSMENT

All canal water customers (both active and inactive users of water) are charged an Irrigation Water Availability Assessment (IWAA). The IWAA is based on the customer's acreage multiplied by the Class 1 commodity rate then again multiplied by 3.8. Customers are refunded their IWAA if they use canal water. The refund is in direct proportion to the amount of any charges they pay for other services, such as the Commodity Charge, the Quagga Surcharge, and the Gate Charge (see below). In the event that a customer's other canal charges meet or exceed the customer's IWAA, the IWAA is forgiven in its entirety. The IWAA is not the subject of this Report, nor was it reviewed by Hawksley.

### 2.2.3. MISCELLANEOUS CHARGES

The canal system does not operate under pressure therefore it is not technically feasible for CVWD to use typical water meters to measure the volume of canal water used by canal water customers. Each customer has an irrigation gate that can be opened for water delivery. When the gate is open it must be visited daily by a CVWD technician to document the volume of water that is being delivered. As such, a Gate Charge of \$11.50/day is charged to customers when their gate is open.

Currently a few customers that require water to be pumped to their property (most accounts receive water by gravity) are charged \$6/AF for water pumped.<sup>4</sup>

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<sup>4</sup> It is recommended in this Report to eliminate the pumping charge (see Section 4).

## 2.2.4. PROPERTY TAX REVENUE

In addition to the rate revenue described above, CVWD receives from Riverside County an allocation of the general ad valorem property taxes collected within District boundaries. The Canal Fund receives a portion of these revenues. In addition, the Canal Fund receives ad valorem property taxes collected within Improvement District No. 1 (ID-1). In 1935, the District adopted Ordinance Number 595 authorizing a tax levy for the purpose of satisfying the United States Bureau of Reclamation (USBR) repayment obligation. The tax continues today and allows for the levy to continue for operations and maintenance expenses. The District does not receive any allocation of the ad valorem property tax revenues collected from properties that are served by the District but located outside of the boundaries of ID-1 (see Section 4).

## 2.2.5. INTEREST EARNINGS

The Canal Fund receives proceeds from interest earnings on cash and investments. The enterprise has historically generated interest earnings at a rate of approximately 1.2%. For purposes of forecasting, this Report assumed a rate of return of 1.0%.

## 2.2.6. SUMMARY OF REVENUE

Table 2-2 summarizes the revenue from each respective revenue source over the past 3 years (values have been rounded). The first six lines in Table 2-2 make up the current User Charges. The commodity charge revenues from Classes 1 through 4 are based on the current commodity charges described in Table 2-1.

**Table 2-2 – Historical Canal Enterprise Revenue (rounded)**

	<b>FY 2012 Actual</b>	<b>FY 2013 Actual</b>	<b>FY 2014 Actual</b>	<b>FY 2015 Actual</b>
Commodity - Class 1	\$ 7,009,000	\$ 7,388,000	\$ 7,631,000	\$ 7,650,000
Commodity - Class 2	724,000	822,000	917,000	980,000
Commodity - Class 3	2,688,000	3,130,000	3,588,000	3,479,000
Commodity - Class 4	134,000	110,000	110,000	107,000
Availability Assessment (IWAA)	1,746,000	1,264,000	1,708,000	1,431,000
Surcharges (Quagga)	1,787,000	1,552,000	1,625,000	1,630,000
Gate Charges	1,211,000	1,221,000	1,231,000	1,040,000
Property Taxes	3,170,000	3,057,000	3,403,000	3,429,000
Property Taxes - RDA	4,343,000	2,777,000	2,829,000	2,550,000
Other Charges	338,000	380,000	331,000	1,051,000
Other Funding & Transfers*	16,025,000	75,000	295,000	874,000
Interest Earnings	360,000	444,000	300,000	354,000
<b>Total</b>	<b>\$39,535,000</b>	<b>\$22,220,000</b>	<b>\$23,968,000</b>	<b>\$24,575,000</b>

\* Transfers include events such as the elimination of the District's general fund (\$11.5 million transfer in FY2012) and a capital improvement reimbursement from San Diego County Water Authority for the Coachella Canal Lining Project (\$4.2 million in FY2012).

## 2.3. CANAL ENTERPRISE REVENUE REQUIREMENTS

The Canal Fund's normal expenses include operating and capital expenses. The annual operating expenses are budgeted annually by CVWD management and the budget is approved by the CVWD

Board of Directors. Capital expenses are limited to the cash-financing of system improvements since CVWD has historically avoided issuing debt and currently has no outstanding debt.

### 2.3.1. FINANCIAL ASSUMPTIONS

The following summarizes the general assumptions that were made when making financial forecasting projections.

**Inflation** - The trends of historical actual operational expenses were discussed with CVWD staff. The forecasted operating budgets through FY2019 were provided by CVWD staff based on anticipated changes to operational needs (such as the addition of the OASIS expansion) as well as price inflation. The final numbers are presented in Section 2.3.2.

The rate of inflation for the forecasted capital project spending (which was provided in 2014 dollars) was assumed to be 3%.

**Growth** - This Report's forecast of future sales of Canal water was based on CVWD estimations which considered the increased consumption due to the Oasis project and for golf courses that are either direct connections to the canal or connections from Mid-Valley Pipeline (MVP). Between 2015 and 2021, new connections by golf courses and the MVP are expected to increase canal water usage by 15,000 AF and the OASIS project is expected to increase canal water usage by 24,000 AF.

**Revenue Requirement Approach** – This Report utilized the “cash-needs approach” for calculating revenue requirements, which is one of several generally accepted methodologies in the industry. In the cash-needs approach, total revenue requirements are the annual expenses necessary to meet operations and maintenance costs, debt service requirements, and any cash-funded capital expenses. This approach is common for government-owned utilities since it lends itself to the actual cash flow requirements for expenses, which in turn supports the governmental budgeting process.

The overall cash-needs revenue requirement for the Canal Fund was determined based on a 10-year financial planning projection developed jointly by Hawksley and CVWD management. The financial plan, included in Appendix A and Appendix B of this Report, provides a projection of CVWD's revenue requirements, among other things.

### 2.3.2. OPERATIONS AND MAINTENANCE EXPENSES

Operations and Maintenance (O&M) expenses include all costs essential for running the utility's operations. These costs account for a large portion of the utility's total cost and can have a significant impact on rates. O&M expenses were projected based on a combination of actual historical spending, system growth, and expected inflation. The current fiscal year budget and forecast of O&M expenses are summarized in Table 2-3. A 10-year outlook (with no new rate increases) is provided in Appendix A.

The Water Purchases expense is for imported water, as per the rates established by the QSA. The QSA also stipulates the Mitigation Payments that must be paid by CVWD to fund a series of habitat and air quality restoration projects at the Salton Sea. The Mitigation Payments are based on an established payment schedule through FY2026. These mitigation costs were historically allocated at a 90:10 split between the Domestic Fund and the Canal Fund.

Starting in FY2016, the QSA Mitigation costs were borne by the District's East Whitewater and West Whitewater Replenishment Funds as directed by the Board of Directors.

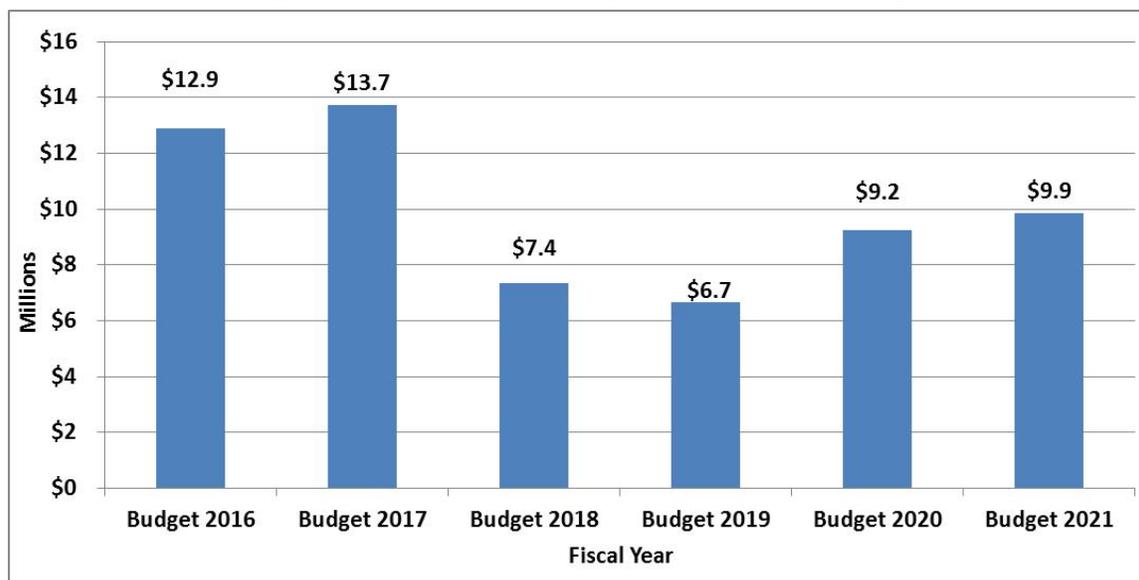
**Table 2-3 – O&M Budget Forecast**

	FY2015 Actuals	FY2016 Forecast	FY2017 Forecast	FY2018 Forecast	FY2019 Forecast	FY2020 Forecast	FY2021 Forecast
Salaries & Wages & Benefits	\$8,543,000	\$8,706,000	\$8,935,000	\$9,412,000	\$9,721,000	\$9,955,000	\$10,252,000
Supplies & Services	\$8,071,000	\$8,619,000	\$8,653,000	\$8,956,000	\$9,269,000	\$9,593,000	\$9,785,000
Utilities	\$607,000	\$732,000	\$784,000	\$837,000	\$896,000	\$959,000	\$997,000
Water Purchases	\$2,629,000	\$3,155,000	\$3,555,000	\$5,251,000	\$5,838,000	\$6,481,000	\$7,200,000
QSA Mitigation Payments	\$372,000	\$0	\$0	\$0	\$0	\$0	\$0
Payment To Other Agencies	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$38,000	\$39,000
Minor Capital Outlay	\$121,000	\$66,000	\$66,000	\$66,000	\$66,000	\$66,000	\$68,000
OPEB Trust Payments	\$1,526,000	\$0	\$0	\$0	\$0	\$0	\$0
OASIS	\$0	\$0	\$0	\$820,000	\$963,000	\$1,123,000	\$1,246,000
Property Tax PayBack	\$951,000	\$951,000	\$951,000	\$0	\$0	\$0	\$0
<b>Totals</b>	<b>\$22,858,000</b>	<b>\$22,267,000</b>	<b>\$22,982,000</b>	<b>\$25,380,000</b>	<b>\$26,791,000</b>	<b>\$28,215,000</b>	<b>\$29,587,000</b>
Increase Over Previous Year:	10.4%	-2.6%	3.2%	10.4%	5.6%	5.3%	4.9%

### 2.3.3. CANAL CAPITAL IMPROVEMENT PLAN

Capital expenses include any planned expenses for capital-related items including the debt service payment on any future debt (if applicable). The Capital Improvement Plan (CIP) provided in Appendix C includes the current year CIP budget, as well as projections through FY2021. The largest and most notable project is the Canal Fund's \$8.6 million cost-responsibility for the \$41.5 million Oasis Area Irrigation System Expansion Project, which will be completed in FY2018.

The Canal Fund spent an annual average of \$3.3 million per year on capital improvements between FY2012 and FY2014. Starting in FY2015, the 5-year average annual capital spending will be \$9.4 million (also see Figure 2-2); partially due to the OASIS project in FY2016 and FY2017 and partially due to an increase in irrigation lateral replacements.

**Figure 2-2 – Current and Projected Capital Spending**

## 2.4. TARGET AND REQUIREMENTS

The financial plan for the Canal Fund considered the following legal and policy-based financial requirements.

### 2.4.1. DEBT SERVICE COVERAGE

Debt Service Coverage (DSC) is an important indicator of a utility's indebtedness and ability to pay for debt. DSC is calculated by dividing net revenue and the annual debt service payments. At this time, CVWD doesn't have a formal DSC policy because the agency historically hasn't issued debt. This Report examines financial strategies that involve the issuance of debt. In those instances, a minimum DSC of 1.75 was assumed.

### 2.4.2. RESERVE REQUIREMENTS

Reserves are cash savings and investments that are set aside either by a legal requirement (restricted reserves) or by management directive (unrestricted reserves). The Canal Fund's unrestricted reserve (and non-restricted reserves) policies are summarized in Table 2-4.

**Table 2-4 – Canal Fund Reserve Policies**

Reserve	FY2016 Levels	Description of Reserve Policy
<b>Operating Reserve</b>	\$5.3M	Ensures continuity of service regardless of cash flow, maintained at 90 days of current year budgeted operating expenses.
<b>Rate Stabilization</b>	\$1.2K	Covers the smoothing of rates in the event of revenue losses or unanticipated costs, maintained at 10% of current year budgeted rate revenues.
<b>Capital Improvement Program (CIP)</b>	\$7.3M	Stabilizes funding for capital by accumulated "pay as you go" reserves; maintained at the average of the 5-year CIP.
<b>Emergency Reserve</b>	\$15.1M	Ensures continued service to the District's customers and service areas for events which are impossible to anticipate or budget; maintained at one percent (1.0%) of the replacement cost of fixed assets.
<b>Fleet Reserve</b>	\$500K	Going forward each enterprise will manage its own vehicle replacement program. Canal will adopt a Fleet Reserve with a target of approximately \$0.5M.

## 2.5. FINANCIAL PLAN RATE ADJUSTMENTS

Based on current cash balances, forecasted revenues and forecasted expenses we evaluated the Canal Fund's projected cash balances and cash flow. The following sections describe two scenarios: No Rate Adjustments and Recommended Rate Adjustments.

### 2.5.1. NO RATE ADJUSTMENTS SCENARIO

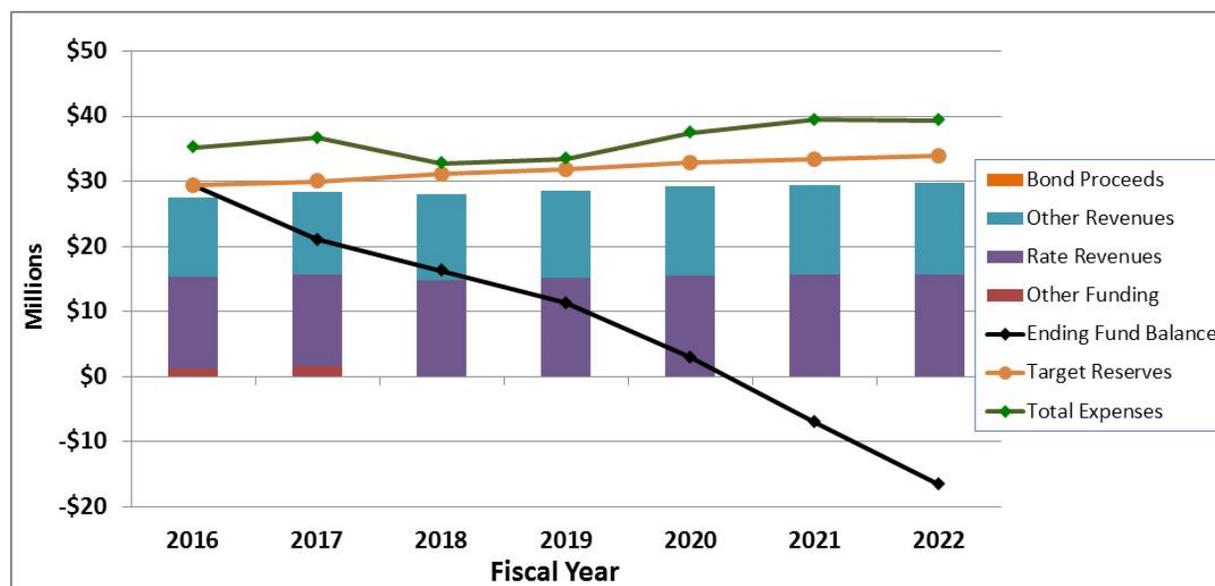
As shown in Table 2-5, in the absence of an adjustment to User Charges (and assuming that no debt is issued), the reserve balances are already below their targets in FY2016 and cash is expected to be entirely depleted by FY2022. The DSC value is "not applicable" since the Canal Fund has no existing debt and this scenario assumes no new debt. The results of this scenario are shown in more detail in Appendix A.

Figure 2-3 provides a graphical illustration of the same, showing the total expenses, total sources of revenue, reserve targets, and reserve balance. The primary drivers for the depletion of reserves are increases in capital spending and market inflation pressure in operation costs.

**Table 2-5 – Canal Enterprise Fund Balance Forecast, No Rate Adjustments**

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>Rate Adjustment</b>	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
<b>Debt Proceeds</b>	\$0M	\$0M						
<b>Ending Balance</b>	\$28.7M	\$20.3M	\$15.5M	\$10.5M	\$2.2M	-\$7.8M	-\$17.3M	-\$28.3M
<b>Target Reserves</b>	\$29.4M	\$30.0M	\$31.1M	\$31.8M	\$32.9M	\$33.4M	\$33.9M	\$34.8M
<b>Debt Coverage Ratio</b>	NA	NA						

**Figure 2-3 – Enterprise Totals and Fund Balance, No Rate Adjustments**



### 2.5.2. RECOMMENDED RATE ADJUSTMENT SCENARIO

The financial plan developed as part of this Report recommends a rate adjustment schedule and debt issuance strategy that will maintain the District's DSC target and reserve targets through FY2021. The recommended rate adjustments and debt strategy are summarized in Table 2-6. A detailed proforma of the financial plan is provided in Appendix A.

Figure 2-4 provides a graphical illustration of the same, showing the total expenses, total source of revenue, reserve targets, and reserve balance. This figure demonstrates that the combination of debt issuance and rate adjustments allow the District to meet its reserve and DSC targets.

From a financial strategy perspective the debt strategy is recommended because a cash-only approach would require a series of large rate increases in the short-term (in order to remain solvent) and then result in long-term over-collection of revenue unless the rates were subsequently decreased.

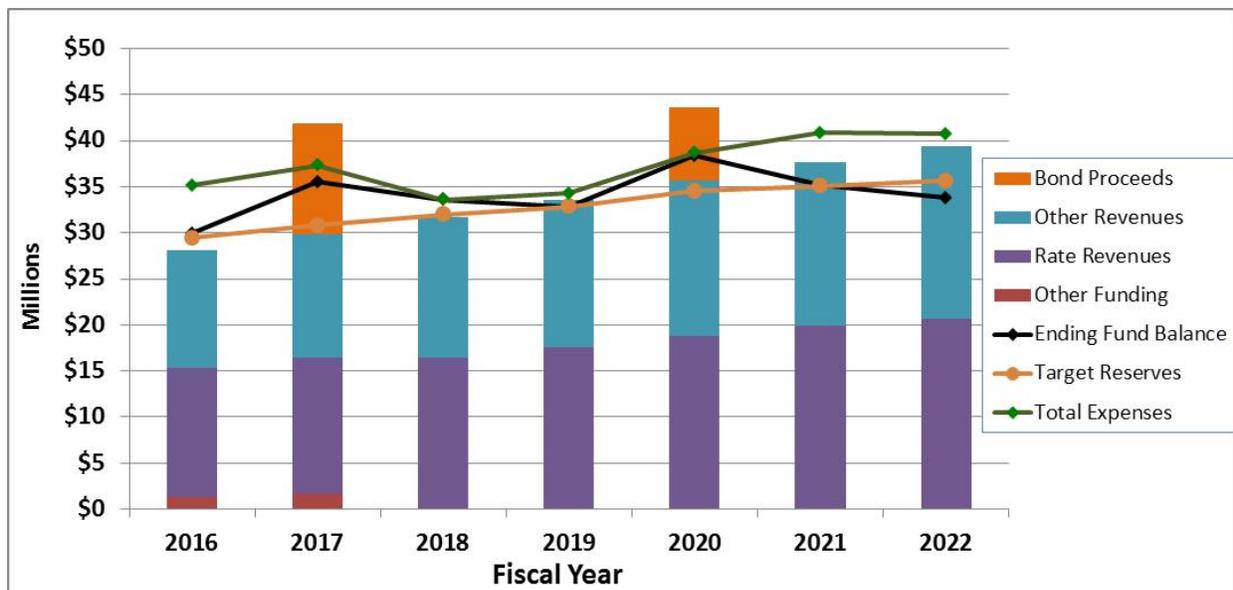
In reviewing the proforma and Table 2-6, the reader will notice a projected rate increase of 3% continues on an annual basis after FY2021. The scope of this financial plan is limited to making rate

recommendations through FY2021. It is assumed that CVWD will under-take another rate study by FY2021 (or sooner) in order to adopt the necessary rates for FY2021. The current recommended strategy is a long-term strategy, meaning that additional debt will likely be the best option for CVWD at that time.

**Table 2-6 – Recommended Rate Adjustments and Debt Strategy through FY2021<sup>5</sup>**

	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
<b>Rate Adjustment</b>	0.0%	5.0%	5.0%	5.0%	5.0%	5.0%	3.0%	3.0%
<b>Debt Proceeds</b>	\$0M	\$12M	\$0M	\$0M	\$8M	\$0M	\$0M	\$0M
<b>Ending Balance</b>	\$28.7M	\$34.2M	\$32.3M	\$31.5M	\$37.1M	\$33.9M	\$32.5M	\$31.1M
<b>Target Reserves</b>	\$29.4M	\$30.8M	\$32.0M	\$32.9M	\$34.5M	\$35.1M	\$35.7M	\$36.6M
<b>Debt Coverage Ratio</b>	NA	12.32	7.44	7.95	6.59	5.74	5.89	6.12

**Figure 2-4 - Enterprise Totals and Fund Balance, Recommended Rate Adjustments**



Appendix B provides a proforma that summarizes the proposed annual revenue adjustments and debt strategy over the 5-year study period (FY2017 to FY2021) as well as the forecasted rate revenue through FY2025.

<sup>5</sup> The rate adjustments in 2022 and 2023 are assumed market adjustments that will be made at that time by the District.

## 3. COST-OF-SERVICE ANALYSIS

In calculating the cost of providing canal water service, Hawksley has followed generally accepted practices in allocating costs, consistent with guiding principles published by the American Water Works Association in its *M1 Manual, Principles of Water Rates, Fees, and Charges*.

### 3.1. SYSTEM FUNCTIONS

The costs of providing water services are driven by customer demands. The American Water Works Association (AWWA) describes two generally accepted methods for allocating costs (also known as cost causation) based on customer demands: the “base extra-capacity method” and the “commodity demand method”. For this Report, Hawksley used a method similar to the base extra-capacity. Costs were allocated to the following system functions:

**Base Operation Costs:** The base operation costs are a “catch all” for costs that are incurred by all customers and tend to vary with the total quantity of water used. Base operation costs are apportioned to customers based on water consumption.

**Customer Costs:** Customer costs are fixed costs incurred by CVWD in serving all customers without regard for the amount of water used (such costs are incurred whether the utility provides any water or no water). In this case, Customer Costs included the costs of billing, customer accounting, and general administrative costs.

**Supply Costs:** The District owns over 300,000 AF per year of Colorado River water rights that were acquired when the All-American Canal was built. The District’s Supply Costs consist entirely of the cost of water purchased pursuant to the QSA water purchase agreement (see Section 2.3.1), which is a “take or pay” agreement (meaning that the Canal fund pays for the predetermined quantity of water whether it uses the water or not). A schedule of QSA water purchase costs (see Table 2-3 and Appendices A & B) has been established through 2027.

**Pumping Costs:** Pumping costs include infrastructure costs, maintenance, and considerable energy costs. This Report recommends eliminating this charge and incorporating these costs in the Base Operations Costs.

**Gate Reading Costs:** Each canal customer has an irrigation gate which must be manually opened in order to deliver water. The District doesn’t have metering technology (most meters require water to be under pressure) therefore District operators must visit each gate at least once per day while it is open to read the flow rates. As such, the costs associated with gate reading include staff time and vehicle use.

**Quagga Mussel Program Costs:** The District complies with a Quagga Mussel Control Program which incurs staff time and chemicals. Quagga Mussel Control Program costs are apportioned to customers based on water consumption. Such costs technically could be combined with the Base Operation Costs, but are accounted for separately in order to demonstrate the cost of the program.

**Construction Meter Costs:** The District provides a construction meter program, whereby canal pumps can be leased in order to provide temporary water service to construction sites. The costs associated with the program are largely associated with the administration of the program and maintenance of the equipment.

While typically included in the base extra-capacity method, we did not quantify the costs incurred as a result of meeting customer demands that were in excess of the average daily demands. The relevant costs associated with higher demands were largely captured by the Gate Reading Costs (see above). This was excluded because this was not a cost driver that would differentiate any of the canal customers.

## 3.2. CUSTOMER CLASSES

It is recommended that the four existing canal customer classes (see Section 2.2) be reorganized into the following groups, as explained below.

**Class 1** – As per CVWD, “Class 1” customers consist of all canal water customers who use canal water for commercial agricultural activities—i.e., customers who use canal water for the purpose of producing an agricultural commodity for commercial purposes, including growing crops and raising animals for the commercial production and/or sale of food, fiber, fuel and other products. This customer class is designated as having priority access to the District’s Colorado River water rights (300,000 AF per year). Since Class 1 canal water customers currently use less than 300,000 AF per year, those customers are not responsible for any Water Supply costs. In the event that Class 1 canal water customers begin to consume water at a rate that exceeds 300,000 AF per year, they will pay an equitable portion of the water purchase costs.

**Class 2** – “Class 2” customers consist of all other canal water customers—i.e., customers who use canal water for: groundwater replenishment, including the District Replenishment Fund; drinking water production; landscape irrigation; recreation; and other activities, including, but not limited to, golf courses, hunting clubs, polo fields, and the District Nonpotable Water Fund. The sole difference between the costs of serving Class 1 vs. Class 2 is the cost of the QSA water purchases. The cost of the QSA water purchases will be collected from Class 2 and Construction Meter customers through a Water Supply Surcharge (in \$/AF), which is calculated by dividing the QSA water purchase costs in a given year by the anticipated Class 2 water sales in that year (AF).

**Construction Meters** – Previously known as Class 4, “Construction Meter” users have the same cost responsibility as Class 2, less administrative costs such as billing, but in addition to the cost of operating the construction meter program.

Table 3-1 provides a summary of size and water consumption of each customer classification<sup>6</sup>.

**Table 3-1 – Assumed Customer Units by Class (with projected Oasis volumes)**

Customer Class	Account Count	Approximate Acreage	Gate Reads*	Annual Consumption (AF)
<b>Class 1</b>	1,420	59,234	149,432	287,494
<b>Class 2</b>	56	2,336	17,036	62,282
<b>Construction Water</b>	NA	NA	751	724
<b>Totals</b>	<b>1,476</b>	<b>61,570</b>	<b>167,219</b>	<b>350,500</b>
<b>Averages</b>		<b>41.7</b>		<b>237.5</b>

\* Includes scheduled requests, non-scheduled requests, and non-requested visits

<sup>6</sup> The Class 1 customer count includes the 50 new accounts that are expected to join in by build-out as a result of the OASIS expansion project (Assessment District 34).

### 3.3. COST ALLOCATIONS

Costs are allocated to each respective customer class within the context of two primary cost drivers: the cost of infrastructure upkeep (“plant-in-service”) and the daily cost of operating and maintaining the system.

#### 3.3.1. ALLOCATION OF PLANT-IN-SERVICE

There are four system functions described in Section 3.1 that are associated with canal infrastructure: general canal infrastructure (common to all users), quagga mussel infrastructure (specific to the requirements of the Quagga Mussel Control Program), gate reading infrastructure (for monitoring water usage), and pumping infrastructure. Table 3-2 summarizes the net book value<sup>7</sup> of the plant-in-service associated with these four categories.

The allocation of net plant-in-service values to the system functions was then used to represent the average level of capital investment made in each functional area over time. As such, rather than looking at the actual mix of capital projects that occurred during FY2015 (the “test year” used for this analysis<sup>8</sup>), the total cash-capital needs (capital budget less change in fund balance) for FY2015 was allocated to each respective system function by multiplying the cash-capital needs by the percentage in Table 3-2.

**Table 3-2 – Allocation of Net-Plant-in-Service to Customer Demand Categories**

<b>Functionalized Asset</b>	<b>Allocation of Net-Plant-in-Service</b>		<b>Allocation of FY 2015 Cash-Capital Needs</b>
General Canal Infrastructure	\$34,399,326	85.2%	\$2,027,495
Quagga Infrastructure	\$757,825	1.9%	\$44,666
Gate Reading Infrastructure	\$1,084,436	2.7%	\$63,917
Pumping Infrastructure	\$4,119,557	10.2%	\$242,807
<b>Total</b>	<b>\$40,361,144</b>		<b>\$2,378,884</b>

Table 3-3 summarizes the allocation of plant-in-service to each respective customer class based on each class’ respective water demand profiles. These values ultimately determine each respective customer class’ relative cost-responsibility for future repair and replacement capital spending.

**Table 3-3 – Allocation of Plant-in-Service to Customer Classes**

<b>Customer Class</b>	<b>Net Book Value</b>	<b>Percent Allocation</b>
Class 1 & 2	\$40,283,655	99.8%
Construction Water	\$77,489	0.2%
<b>Total</b>	<b>\$40,361,144</b>	

<sup>7</sup> The values in this table include the estimated capital costs for the OASIS expansion project.

<sup>8</sup> Note regarding the test year of FY2015: Given that it was known that the OASIS development would join the system in FY2018, the anticipated water consumption at OASIS in 2022 was included in the cost-of-service analysis (the year which represents relative “build out” and the final year of this study period).

### 3.3.2. ALLOCATION OF OPERATION AND MAINTENANCE

The system functions described in Section 3.1 each have associated operation and maintenance costs. Each of the Canal Fund's O&M budget line items have been assigned, in whole or in part, to a system function. For example, "All American O&M" costs have been assigned in whole to Base Operations Costs, while "Billing Outsourcing" costs have been allocated to Customer Costs. Table 3-4 summarizes the operating budget costs associated with each system function and summarizes the allocation of O&M costs to each respective customer class (based on their respective service demand profiles).

For example, the Base Operation Costs and Quagga Mussel Program Costs are apportioned to customers based on water consumption (see Section 3.1). In this case Class 1 makes up 82% of water consumption in the test year, while Class 2 makes up 17.8%, for a total of 99.8%. The remaining water is used by Construction Meters. This split of Base Operations Costs between Class 1 & 2 and Construction Meters is reflected in Table 3-4. Similarly, Gate Reading Costs are allocated among customer classes based on the total number of gate reads during the test year (see Table 3-1). Supply Costs are split between Class 2 and Construction Water based on the relative amount of water consumption between those two customer classes (98.9% to 1.1%).

The values presented in Table 3-4 ultimately determine each respective customer class' relative cost-responsibility for future O&M costs.

**Table 3-4 – Allocation of FY2015 O&M Costs to System Functions and Customer Classes<sup>9</sup>**

System Function	Class 1 & 2	Class 2 Only	Construction Water	Functional Allocation	
				Percent	Costs
Base Operation Costs	\$13,416,315	\$0	\$27,770	58.3%	\$13,444,085
Customer Costs	\$2,929,772	\$0	\$0	12.7%	\$2,929,772
Supply Costs	\$0	\$2,598,404	\$30,205	11.4%	\$2,628,609
Pumping Costs	\$1,290,313	\$0	\$0	5.6%	\$1,290,313
Gate Reading Costs	\$1,203,740	\$0	\$5,427	5.2%	\$1,209,167
Quagga Program	\$1,529,744	\$0	\$3,166	6.6%	\$1,532,910
Construction Meters	\$0	\$0	\$23,591	0.1%	\$23,591
<b>Total</b>	<b>\$20,369,883</b>	<b>\$2,598,404</b>	<b>\$90,160</b>		<b>Total: \$23,058,447</b>
Percent	88.3%	11.3%	0.4%		

### 3.4. TOTAL REVENUE REQUIREMENTS BY CUSTOMER CLASS

The total revenue requirements were organized into cost groups for each customer class as summarized in Table 3-5 and Table 3-6. The "Basic Service Costs" category is made up of Base Operation Costs, Customer Costs, Pumping Costs, and Supply Costs. The Basic Service Costs for the Construction Meter customer class include the cost of the Construction Meter Program, but does not include the cost of water

<sup>9</sup> The total of this table (\$23,058,447) is not equal to the total value of Table 2.3 (\$22,858,000) due to the fact that it doesn't include the Property Tax Payback but does include an approximation for the future operating costs for OASIS (costs which didn't exist during the test year). These representative OASIS costs (approximately the costs forecasted for FY2020) have been included in order to reflect the material change in operating costs that will occur when the OASIS operations begin.

supply. The remaining cost (Quagga Mussel Control Program and Gate Reading) groups align with the remaining functional groups described in Section 3.1.

The revenue requirements in Table 3-5 and Table 3-6 show two cost categories (O&M and capital) and then the credit conferred by non-rate revenue. Non-rate revenue is primarily comprised of ad valorem property tax revenue, but also includes miscellaneous charges and investment interest income. Non-rate revenue is credited to each customer class proportionally to the costs that are allocated to each respective customer class (i.e. their overall service demand profiles). At the bottom of each of the following tables are the net revenue requirements by function.

**Table 3-5 – Class 1 & 2 FY2015 Revenue Requirements by Cost Category**

	Basic Service Costs	Gate Reading Costs	Quagga Program Costs	Total
Operations & Maintenance Costs <sup>10</sup>	\$17,636,400	\$1,203,740	\$1,529,744	<b>\$20,369,883</b>
Capital Costs <sup>11</sup>	\$2,266,113	\$63,630	\$44,574	<b>\$2,374,317</b>
Non-Rate Revenue	(\$8,748,249)	\$0	(\$691,999)	<b>(\$9,440,248)</b>
<b>Rate Revenue Requirement</b>	<b>\$11,154,264</b>	<b>\$1,267,369</b>	<b>\$882,319</b>	<b>\$13,303,952</b>

**Table 3-6 – Construction Meters FY2015 Revenue Requirements by Cost Category**

	Basic Service Costs	Gate (meter) Reading Costs	Quagga Program Costs	Total
Operations & Maintenance Costs <sup>12</sup>	\$51,361	\$5,427	\$3,166	<b>\$59,955</b>
Capital Costs <sup>13</sup>	\$4,188	\$287	\$92	<b>\$4,567</b>
Non-Rate Revenue	(\$24,417)	\$0	(\$1,432)	<b>(\$25,849)</b>
<b>Rate Revenue Requirement</b>	<b>\$31,132</b>	<b>\$5,714</b>	<b>\$1,826</b>	<b>\$38,673</b>

<sup>10</sup> Costs taken from Table 3-4, with exception of water supply costs which aren't included in this table.

<sup>11</sup> The total value in this row plus the total in the Capital Cost row of Table 3-6 is equal to the total Cash-Capital Needs listed in Table 3-2

<sup>12</sup> Costs taken from Table 3-4, with exception of water supply costs which aren't included in this table.

<sup>13</sup> The total value in this row plus the total in the Capital Cost row of Table 3-5 is equal to the total Cash-Capital Needs listed in Table 3-2

## 4. PROPOSED CANAL RATE STRUCTURE

After completion of the cost-of-service analysis, the rate design phase determines how those identified costs will be collected from the individual accounts within the customer classes. The following explains how the recommended rates were designed in a manner such that they comply with the cost-of-service results and address District pricing objectives. The recommended rates are designed such that each customer class pays its own proportionate share of the cost of providing service.

As previously described, this Report proposes new customer classes consisting of Class 1, Class 2, and Construction Meters. The proposed rates are as follows:

**Commodity Charge** – The Commodity Charge pays for basic service and is charged on a volumetric basis. The Commodity Charge is calculated by dividing the rate revenue requirement for basic service (see Section 3.4) by forecasted water sales (in AF). For example the total Basic Service Costs for Class 1 and Class 2 in Table 3-5 (\$11,154,264) divided by the total water consumption for Class 1 and 2 (349,776 AF) plus the 5% rate increase for FY2017 equals \$33.48 / AF (see proposed FY2017 rate schedule in Appendix C).

**Water Supply Surcharge** – The Water Supply Surcharge is charged to Class 2 customers and Construction Meters and is calculated by dividing the known QSA water purchase costs in a given year by the anticipated Class 2 and Construction Meter water sales in that year. For example, in FY2017 the QSA water purchase costs are schedule to be \$3,555,000 and the water sales to Class 2 and Construction Meters is forecasted to be 65,846 AF, yielding \$53.99 / AF.

**Gate Reading Charge** – The design of the current Gate Reading Charge has had the unintended consequence of encouraging users to request frequent gate modifications, which has increased the cost of providing the service. As such, this Report recommends the following adjustments to this charge. Simple gate reads (required daily when the gate is open) will not be charged. Scheduled Gate Orders (requested visits to open, close or otherwise modify the gate position) will be charged when customers place an order. The number of such Scheduled Gate Orders that occurred in FY2015 is summarized in Table 4-1. Per CVWD, unscheduled Gate Orders will be charged a rate that is twice the cost of Scheduled Gate Orders. The Gate Reading Charges were thus calculated by dividing the rate revenue requirement of the Gate Reading services (see Section 3.4) by the number of gate orders rendered in 2015. Gate Reading Charges are not applicable to Construction Meter rates.

**Table 4-1 – Number of Gate Orders (FY2015)**

Type of Gate Order	2015 Count
Scheduled Gate Orders	73,662
Unscheduled Gate Orders	4,289

For example, the total Gate Reading Costs in the test year (see Table 3-5 and Table 3-6) equals \$1,273,083 and the total number of equivalent Scheduled Gate Orders equals 82,240 (see Table 4-1, note that Unscheduled Gate Orders count for two Scheduled Gate Orders) yields \$15.48 per Scheduled Gate Order (\$16.25 after the 5% rate increase, as shown in the FY2017 rate schedule shown in Appendix C).

**Quagga Mussel Mitigation Surcharge** – The Quagga Mussel Mitigation Surcharge is calculated by dividing the Quagga Mussel program rate revenue requirement (see Section 3.4) by forecasted water sales (in AF).

**Outside ID-1 Surcharge** – As discussed in Section 2.2.4, the District does not receive any allocation of the ad valorem property tax revenues collected from properties that are served by the District but located outside of the boundaries of ID-1. Customers whose properties are located outside of ID-1 are referred to in this Report as “Outside Customers.” In FY2015, the ID-1 ad valorem property tax revenue for the Canal Fund was budgeted to be \$2,605,200. This revenue is treated as “non-rate revenue” and is used to defray the rates charged to customers served within ID-1. Since the cost to serve Outside Customers is not defrayed by the ID-1 ad valorem property tax revenue, an Outside ID-1 Surcharge will be imposed on them. The Outside ID-1 Surcharge is charged based on property acreage and is designed to recover costs that are not otherwise funded by non-rate revenue. The surcharge is calculated by dividing the ID-1 property tax revenue (\$2,605,200 in FY2015) by the total acres within ID-1 receiving Canal service (61,170 acres), yielding \$3.55 per month for the test year. The Outside ID-1 Surcharge will not be adjusted by the rate adjustments recommended in Section 2.5.2, but rather will be adjusted annually by the projected change in the ID-1 property tax revenue. The projected annual increases from FY2017 to FY2021 are 4%, 2%, 2%, 2% and 2% respectively). Outside ID-1 Surcharges are not applicable to Construction Meter rates.

**Pumping Charge** – This Report recommends that the current pumping charge be eliminated and that all customers bear the cost of pumping.

These proposed changes to the canal water service rate structure are consistent with the recommendations expressed in a report issued by the District’s Water Advisory Committee entitled: *An Evaluation of Coachella Valley Water District’s Irrigation Water Pricing Structure* (August 26, 2013).

The proposed rate schedules for FY2017 through FY2021 have been provided in Appendix D.

## 5. CONCLUSION

This Report used methodologies that are aligned with industry standard practices for rate setting as promulgated by AWWA and all applicable law, including Proposition 218. The District's Canal service rates have multiple components, each of which reflect the cost of providing the associated service. These proposed changes to the canal water service rate structure are consistent with the recommendations expressed in a report issued by the District's Water Advisory Committee entitled: An Evaluation of Coachella Valley Water District's Irrigation Water Pricing Structure (August 26, 2013).

## Appendix A- Canal 10-Year Financial Projection (no rate increases)

	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
<b>Proposed Canal Rate Revenue Increase</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>
<b>Revenues</b>										
Rate Revenue After Adjustments	\$ 15,590,320	\$ 16,751,089	\$ 14,079,042	\$ 14,860,878	\$ 15,124,818	\$ 15,483,385	\$ 15,618,166	\$ 15,737,002	\$ 15,831,739	\$ 15,937,819
Water Supply Surcharge	0	0	2,747,094	3,231,045	3,377,065	3,637,815	3,704,567	3,771,319	3,816,585	3,883,337
Other Charges (excludes Gate Charge)	1,051,390	379,911	337,925	384,925	414,925	445,925	445,925	445,925	445,925	445,925
Property Taxes	5,978,981	8,929,000	9,190,000	9,302,000	9,416,000	9,533,000	9,723,660	9,918,133	10,116,496	10,318,826
Other Funding	1,602,444	1,300,000	1,700,000	-	-	-	-	-	-	-
Investment Income	354,466	357,000	243,784	178,199	129,584	63,479	(27,481)	(124,886)	(227,248)	(343,708)
<b>Total Revenues</b>	<b>\$24,577,601</b>	<b>\$ 27,717,000</b>	<b>\$ 28,297,844</b>	<b>\$ 27,957,047</b>	<b>\$ 28,462,392</b>	<b>\$ 29,163,604</b>	<b>\$ 29,464,838</b>	<b>\$ 29,747,494</b>	<b>\$ 29,983,498</b>	<b>\$ 30,242,199</b>
<b>Operating Expenses</b>										
Salaries, Wages, and Benefits (less labor transfer to Capital budget)	8,542,550	\$ 9,062,000	\$ 9,334,000	\$ 9,615,000	\$ 9,904,000	\$ 10,201,000	\$ 10,507,030	\$ 10,822,241	\$ 11,146,908	\$ 11,481,315
	0	(356,000)	(399,000)	(203,000)	(183,050)	(246,290)	(255,420)	(207,950)	(207,950)	(207,950)
Supplies & Services	8,070,806	8,619,000	8,653,000	8,956,000	9,269,000	9,593,000	9,784,860	9,980,557	10,180,168	10,383,772
OASIS O&M	0	0	0	820,140	963,005	1,122,958	1,245,735	1,366,384	1,407,375	1,449,596
Utilities	607,425	732,000	784,000	837,000	896,000	959,000	997,360	1,037,254	1,078,745	1,121,894
Water Purchases	2,628,609	3,155,000	3,555,000	5,251,000	5,838,000	6,481,000	7,200,000	7,949,000	8,728,000	9,537,000
QSA Mitigation Payments	372,093	0	0	0	0	0	0	0	0	0
Payment To Other Agencies	37,500	38,000	38,000	38,000	38,000	38,000	38,966	39,957	41,033	42,078
Minor Capital Outlay	121,469	66,000	66,000	66,000	66,000	66,000	67,980	70,019	72,120	74,284
Property Tax PayBack	951,000	951,000	951,000	-	-	-	-	-	-	-
OPEB Trust Payments	1,526,000	-	-	-	-	-	-	-	-	-
<b>Total Operating Expenses</b>	<b>\$ 22,857,452</b>	<b>\$ 22,267,000</b>	<b>\$ 22,982,000</b>	<b>\$ 25,380,140</b>	<b>\$ 26,790,955</b>	<b>\$ 28,214,668</b>	<b>\$ 29,586,511</b>	<b>\$ 31,057,463</b>	<b>\$ 32,446,399</b>	<b>\$ 33,881,990</b>
<b>Net Revenues</b>	<b>\$ 1,720,149</b>	<b>\$ 5,450,000</b>	<b>\$ 5,315,844</b>	<b>\$ 2,576,907</b>	<b>\$ 1,671,437</b>	<b>\$ 948,936</b>	<b>\$ (121,673)</b>	<b>\$ (1,309,969)</b>	<b>\$ (2,462,902)</b>	<b>\$ (3,639,791)</b>
<b>Debt Service</b>										
Debt Service Payments - (future)	-	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
<b>Total Debt Service</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
<b>Debt Service Coverage*</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
Capital Spending	\$ 4,112,194	\$ 12,888,088	\$ 13,723,020	\$ 7,352,376	\$ 6,667,470	\$ 9,240,067	\$ 9,870,059	\$ 8,276,764	\$ 8,525,067	\$ 8,780,819
Bond Proceeds (includes debt service reserve)	-	-	-	-	-	-	-	-	-	-
Cash-Funded Capital	4,112,194	12,888,088	13,723,020	7,352,376	6,667,470	9,240,067	9,870,059	8,276,764	8,525,067	8,780,819
<b>Total Revenue Requirements</b>	<b>\$ 26,969,646</b>	<b>\$ 35,155,088</b>	<b>\$ 36,705,020</b>	<b>\$ 32,732,516</b>	<b>\$ 33,458,425</b>	<b>\$ 37,454,735</b>	<b>\$ 39,456,570</b>	<b>\$ 39,334,227</b>	<b>\$ 40,971,467</b>	<b>\$ 42,662,809</b>
<b>Revenues Over (Under) Expenses</b>	<b>(\$2,392,045)</b>	<b>(\$7,438,088)</b>	<b>(\$8,407,175)</b>	<b>(\$4,775,470)</b>	<b>(\$4,996,033)</b>	<b>(\$8,291,131)</b>	<b>(\$9,991,733)</b>	<b>(\$9,586,734)</b>	<b>(\$10,987,969)</b>	<b>(\$12,420,610)</b>
Beginning Balance	38,534,000	\$ 36,141,955	\$ 28,703,867	\$ 20,296,692	\$ 15,521,222	\$ 10,525,189	\$ 2,234,058	\$ (7,757,675)	\$ (17,344,408)	\$ (28,332,377)
<b>Ending Balance</b>	<b>\$ 36,141,955</b>	<b>\$ 28,703,867</b>	<b>\$ 20,296,692</b>	<b>\$ 15,521,223</b>	<b>\$ 10,525,189</b>	<b>\$ 2,234,058</b>	<b>\$ (7,757,674)</b>	<b>\$ (17,344,408)</b>	<b>\$ (28,332,377)</b>	<b>\$ (40,752,988)</b>
Reserve Target	28,904,257	29,417,652	29,965,135	31,078,691	31,835,079	32,884,789	33,350,176	33,858,960	34,756,300	35,682,535
<b>Over/(Under) Reserve Target</b>	<b>\$7,237,698</b>	<b>(\$713,785)</b>	<b>(\$9,668,443)</b>	<b>(\$15,557,468)</b>	<b>(\$21,309,890)</b>	<b>(\$30,650,731)</b>	<b>(\$41,107,850)</b>	<b>(\$51,203,368)</b>	<b>(\$63,088,677)</b>	<b>(\$76,435,523)</b>
Debt Service Coverage	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

## Appendix B – Canal 10-Year Financial Plan (proposed rate increases)

	FY2015	FY2016	FY2017	FY2018	FY2019	FY2020	FY2021	FY2022	FY2023	FY2024
<b>Proposed Canal Rate Revenue Increase</b>	<b>0.0%</b>	<b>0.0%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>5.0%</b>	<b>3.0%</b>	<b>3.0%</b>	<b>3.0%</b>
<b>Revenues</b>										
Rate Revenue After Adjustments	\$ 15,590,320	\$ 16,751,089	\$ 14,782,994	\$ 16,384,118	\$ 17,508,867	\$ 18,820,152	\$ 19,933,178	\$ 20,687,391	\$ 21,436,288	\$ 22,227,318
Water Supply Surcharge	0	0	3,555,000	5,251,000	5,838,000	6,481,000	7,200,000	7,949,000	8,728,000	9,537,000
Other Charges (excludes Gate Charge)	1,051,390	379,911	337,925	384,925	414,925	445,925	445,925	445,925	445,925	445,925
Property Taxes	5,978,981	8,929,000	9,190,000	9,302,000	9,416,000	9,533,000	9,723,660	9,918,133	10,116,496	10,318,826
Other Funding	1,602,444	1,300,000	1,700,000	-	-	-	-	-	-	-
Investment Income	354,466	357,000	313,136	331,098	317,523	341,189	352,916	329,957	316,314	303,534
<b>Total Revenues</b>	<b>\$24,577,601</b>	<b>\$ 27,717,000</b>	<b>\$ 29,879,055</b>	<b>\$ 31,653,141</b>	<b>\$ 33,495,315</b>	<b>\$ 35,621,266</b>	<b>\$ 37,655,678</b>	<b>\$ 39,330,406</b>	<b>\$ 41,043,022</b>	<b>\$ 42,832,603</b>
<b>Operating Expenses</b>										
Salaries, Wages, and Benefits (less labor transfer to Capital budget)	8,542,550	\$ 9,062,000	\$ 9,334,000	\$ 9,615,000	\$ 9,904,000	\$ 10,201,000	\$ 10,507,030	\$ 10,822,241	\$ 11,146,908	\$ 11,481,315
Supplies & Services	0	(356,000)	(399,000)	(203,000)	(183,050)	(246,290)	(255,420)	(207,950)	(207,950)	(207,950)
OASIS O&M	8,070,806	8,619,000	8,653,000	8,956,000	9,269,000	9,593,000	9,784,860	9,980,557	10,180,168	10,383,772
Utilities	0	0	0	820,140	963,005	1,122,958	1,245,735	1,366,384	1,407,375	1,449,596
Water Purchases	607,425	732,000	784,000	837,000	896,000	959,000	997,360	1,037,254	1,078,745	1,121,894
QSA Mitigation Payments	2,628,609	3,155,000	3,555,000	5,251,000	5,838,000	6,481,000	7,200,000	7,949,000	8,728,000	9,537,000
Payment To Other Agencies	372,093	0	0	0	0	0	0	0	0	0
Minor Capital Outlay	37,500	38,000	38,000	38,000	38,000	38,000	38,966	39,957	41,033	42,078
Property Tax PayBack	121,469	66,000	66,000	66,000	66,000	66,000	67,980	70,019	72,120	74,284
OPEB Trust Payments	951,000	951,000	951,000	-	-	-	-	-	-	-
<b>Total Operating Expenses</b>	<b>\$ 22,857,452</b>	<b>\$ 22,267,000</b>	<b>\$ 22,982,000</b>	<b>\$ 25,380,140</b>	<b>\$ 26,790,955</b>	<b>\$ 28,214,668</b>	<b>\$ 29,586,511</b>	<b>\$ 31,057,463</b>	<b>\$ 32,446,399</b>	<b>\$ 33,881,990</b>
<b>Net Revenues</b>	<b>\$ 1,720,149</b>	<b>\$ 5,450,000</b>	<b>\$ 6,897,055</b>	<b>\$ 6,273,001</b>	<b>\$ 6,704,361</b>	<b>\$ 7,406,598</b>	<b>\$ 8,069,167</b>	<b>\$ 8,272,944</b>	<b>\$ 8,596,623</b>	<b>\$ 8,950,614</b>
<b>Debt Service</b>										
Debt Service Payments - (future)	-	\$ -	\$ 422,000	\$ 843,000	\$ 843,000	\$ 1,124,000	\$ 1,405,000	\$ 1,405,000	\$ 1,405,000	\$ 1,405,000
<b>Total Debt Service</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 422,000</b>	<b>\$ 843,000</b>	<b>\$ 843,000</b>	<b>\$ 1,124,000</b>	<b>\$ 1,405,000</b>	<b>\$ 1,405,000</b>	<b>\$ 1,405,000</b>	<b>\$ 1,405,000</b>
<b>Debt Service Coverage*</b>	<b>N/A</b>	<b>N/A</b>	<b>12.32</b>	<b>7.44</b>	<b>7.95</b>	<b>6.59</b>	<b>5.74</b>	<b>5.89</b>	<b>6.12</b>	<b>6.37</b>
Capital Spending	\$ 4,112,194	\$ 12,888,088	\$ 13,723,020	\$ 7,352,376	\$ 6,667,470	\$ 9,240,067	\$ 9,870,059	\$ 8,276,764	\$ 8,525,067	\$ 8,780,819
Bond Proceeds (includes debt service reserve)	-	-	12,780,617	-	-	8,520,411	-	-	-	-
Cash-Funded Capital	4,112,194	12,888,088	942,402	7,352,376	6,667,470	719,656	9,870,059	8,276,764	8,525,067	8,780,819
<b>Total Revenue Requirements</b>	<b>\$ 26,969,646</b>	<b>\$ 35,155,088</b>	<b>\$ 24,346,402</b>	<b>\$ 33,575,516</b>	<b>\$ 34,301,425</b>	<b>\$ 30,058,324</b>	<b>\$ 40,861,570</b>	<b>\$ 40,739,227</b>	<b>\$ 42,376,467</b>	<b>\$ 44,067,809</b>
<b>Revenues Over (Under) Expenses</b>	<b>(\$2,392,045)</b>	<b>(\$7,438,088)</b>	<b>\$5,532,653</b>	<b>(\$1,922,376)</b>	<b>(\$806,110)</b>	<b>\$5,562,942</b>	<b>(\$3,205,892)</b>	<b>(\$1,408,821)</b>	<b>(\$1,333,445)</b>	<b>(\$1,235,206)</b>
Beginning Balance	38,534,000	\$ 36,141,955	\$ 28,703,867	\$ 34,236,520	\$ 32,314,144	\$ 31,508,035	\$ 37,070,977	\$ 33,865,085	\$ 32,456,264	\$ 31,122,820
<b>Ending Balance</b>	<b>\$ 36,141,955</b>	<b>\$ 28,703,867</b>	<b>\$ 34,236,520</b>	<b>\$ 32,314,144</b>	<b>\$ 31,508,034</b>	<b>\$ 37,070,977</b>	<b>\$ 33,865,085</b>	<b>\$ 32,456,264</b>	<b>\$ 31,122,819</b>	<b>\$ 29,887,614</b>
Reserve Target	28,904,257	29,417,652	30,816,148	32,011,632	32,854,101	34,519,495	35,082,705	35,655,028	36,617,784	37,612,514
<b>Over/(Under) Reserve Target</b>	<b>\$7,237,698</b>	<b>(\$713,785)</b>	<b>\$3,420,372</b>	<b>\$302,512</b>	<b>(\$1,346,067)</b>	<b>\$2,551,482</b>	<b>(\$1,217,621)</b>	<b>(\$3,198,764)</b>	<b>(\$5,494,964)</b>	<b>(\$7,724,900)</b>
Debt Service Coverage	NA	NA	12.32	7.44	7.95	6.59	5.74	5.89	6.12	6.37

## Appendix C – Capital Improvement Plan Current and Forecasted Spending

	FY2016 Budget	FY2017 Budget	FY2018 Forecast	FY2019 Forecast	FY2020 Forecast	FY2021 Forecast
<b>CIB ALLOCATION</b>						
Share of General District CIB Allocation	\$319,000	\$2,294,000	\$2,063,000	\$359,000	\$247,000	-
<b>CANAL</b>						
Canal Telemetry Replacement Project	300,000	-	-	-	-	-
Quagga Mussel Control Program	335,000	-	-	-	-	-
CCLP - Mid Canal Lining Replacement Project	300,000	1,700,000	-	-	-	-
Bureau of Land Management Land Grant - Cactus City	15,000	25,000	-	-	-	-
Canal Generator Replacement Program	200,000	175,000	-	-	-	-
Lower Canal Lining Replacement Program	-	300,000	300,000	-	300,000	-
Upper Canal Lining Replacement Program	-	-	200,000	200,000	200,000	-
Check Structure at MP 120.8 Replacement Project	-	-	68,000	432,000	-	-
Lower Canal Radial Gate Improvement Program	-	-	-	200,000	300,000	-
<b>IRRIGATION</b>						
Oasis Area Irrigation System Expansion Project (40%)	4,300,000	4,300,000	-	-	-	-
Irrigation Lateral 117.8 Relocation	20,000	-	-	-	-	-
Irrigation Lateral 114.3 Replacement Project	375,000	-	-	-	-	-
Irrigation Lateral 100.9 Replacement Project	260,000	-	-	-	-	-
Irrigation Lateral 99.8 Replacement Project	227,000	-	-	-	-	-
Irrigation Lateral 99.8-0.51 Replacement	2,500,000	2,693,000	2,692,000	-	-	-
Irrigation Lateral 119.64-2.6 Replacement Project	-	80,000	325,000	-	-	-
Irrigation Lateral 123.45-1.3-2.2 Replacement Project	-	65,000	685,000	-	-	-
Irrigation Lateral 123.45-1.3-2.8 Replacement Project	-	65,000	-	230,000	-	-
Irrigation Lateral 119.64-4.6 Replacement Project	-	36,000	-	-	1,464,000	-
Irrigation Lateral 123.45-6.0 Replacement Project	-	235,000	-	-	-	2,620,000
Irrigation Lateral 102.3 Replacement Project Phase I	-	-	80,000	1,245,000	-	-
Irrigation Lateral 102.3 Replacement Project Phase II	-	-	150,000	1,150,000	-	-
Irrigation Lateral 119.64-4.1 Replacement Project	-	-	200,000	1,610,000	1,610,000	-
Irrigation Lateral 123.45-5.4 Replacement Project	-	-	-	110,000	1,805,000	-
Irrigation Lateral 119.64-7.5 Baffle Stand and Meter Replacement	-	-	-	60,000	1,090,000	-
Irrigation Lateral 88.6 Replacement Project	-	-	-	100,000	615,000	-
Irrigation Lateral 108.2 Replacement Project	-	-	-	-	125,000	1,500,000
<b>DRAINAGE</b>						
Durbrow Drain Pipeline Replacement	2,625,000	-	-	-	-	-
Drain Pipeline Replacement - Harrison and Airport	100,000	1,330,000	-	-	-	-
Avenue 62 Drain Pipeline Replacement Project	-	-	-	-	105,000	2,581,000
Avenue 59 Drain Pipeline Replacement Project	-	-	-	-	95,000	1,235,000
<b>MOTORPOOL</b>						
Vehicle Replacement	1,012,000	25,000	167,000	406,000	254,000	578,000
<b>TOTALS</b>	<b>\$12,888,000</b>	<b>\$13,323,000</b>	<b>\$6,930,000</b>	<b>\$6,102,000</b>	<b>\$8,210,000</b>	<b>\$8,514,000</b>
<b>TOTALS WITH INFLATION</b>	<b>\$12,888,088</b>	<b>\$13,723,020</b>	<b>\$7,352,376</b>	<b>\$6,667,470</b>	<b>\$9,240,067</b>	<b>\$9,870,059</b>

## Appendix D – Proposed Canal Rate Schedule

The following rates increases are based on the following:

- 1) The Water Supply Surcharge increases based on the scheduled QSA Water Purchases for the respective years;
- 2) The Outside ID-1 Surcharge increases by the anticipated increase in property tax revenue for the respective years (2% per year after FY2017); and
- 3) All other charges increase by the 5% rate increase proposed in Section 2.

### Proposed FY2017 Rate Schedule

	Commodity Charge		Water Supply Surcharge		Quagga Mussel Mitigation Surcharge		Total Volumetric Charge		Gate Charge	
	\$/AF		\$/AF		\$/AF		\$/AF		\$ per read	
Class 1	\$33.48	+	\$0.00	+	\$2.65	=	\$36.13		Read Only:	NA
Class 2	\$33.48	+	\$53.99	+	\$2.65	=	\$90.12		Scheduled:	\$16.25
Construction Water	\$45.15	+	\$53.99	+	\$2.65	=	\$101.79		Unscheduled:	\$32.51
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>									<b>\$3.69</b>	

### Proposed FY2018 Rate Schedule

	Commodity Charge		Water Supply Surcharge		Quagga Mussel Mitigation Surcharge		Total Volumetric Charge		Gate Charge	
	\$/AF		\$/AF		\$/AF		\$/AF		\$ per read	
Class 1	\$35.15	+	\$0.00	+	\$2.78	=	\$37.93		Read Only:	NA
Class 2	\$35.15	+	\$67.80	+	\$2.78	=	\$105.73		Scheduled:	\$17.07
Construction Water	\$47.41	+	\$67.80	+	\$2.78	=	\$117.99		Unscheduled:	\$34.13
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>									<b>\$3.76</b>	

### Proposed FY2019 Rate Schedule

	Commodity Charge		Water Supply Surcharge		Quagga Mussel Mitigation Surcharge		Total Volumetric Charge		Gate Charge	
	\$/AF		\$/AF		\$/AF		\$/AF		\$ per read	
Class 1	\$36.91	+	\$0.00	+	\$2.92	=	\$39.83		Read Only:	NA
Class 2	\$36.91	+	\$72.12	+	\$2.92	=	\$111.95		Scheduled:	\$17.92
Construction Water	\$49.78	+	\$72.12	+	\$2.92	=	\$124.82		Unscheduled:	\$35.84
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>									<b>\$3.84</b>	

### Proposed FY2020 Rate Schedule

	Commodity Charge		Water Supply Surcharge		Quagga Mussel Mitigation Surcharge		Total Volumetric Charge		Gate Charge	
	\$/AF		\$/AF		\$/AF		\$/AF		\$ per read	
Class 1	\$38.76	+	\$0.00	+	\$3.07	=	\$41.83		Read Only:	NA
Class 2	\$38.76	+	\$74.33	+	\$3.07	=	\$116.16		Scheduled:	\$18.82
Construction Water	\$52.27	+	\$74.33	+	\$3.07	=	\$129.67		Unscheduled:	\$37.63
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>									<b>\$3.92</b>	

### Proposed FY2021 Rate Schedule

	Commodity Charge		Water Supply Surcharge		Quagga Mussel Mitigation Surcharge		Total Volumetric Charge		Gate Charge	
	\$/AF		\$/AF		\$/AF		\$/AF		\$ per read	
Class 1	\$40.70	+	\$0.00	+	\$3.22	=	\$43.92		Read Only:	NA
Class 2	\$40.70	+	\$81.08	+	\$3.22	=	\$125.00		Scheduled:	\$19.76
Construction Water	\$54.88	+	\$81.08	+	\$3.22	=	\$139.18		Unscheduled:	\$39.51
<b>Outside ID-1 Surcharge (\$/acre/month) =</b>									<b>\$4.00</b>	