

Final Report

2014 Cost-of-Service Rates and Fees Study

For:
Pinery Water and Wastewater District

December 2014



December 31, 2014

Heather Beasley
Manager
Pinery Water and Wastewater District
5242 Old Schoolhouse Road
Parker, CO 80134



On behalf of MWH Global, I'd like to thank the Pinery Water and Wastewater District for the opportunity to complete its 2014 water and wastewater cost-of-service rates and fees study. In this study, we completed some important tasks and objectives. Namely, we have evaluated an approach to improve the equity of costs allocated to the District's different customer classes, alternative rate structures and effect on customers have been reviewed, and forecasts of future revenues required have been estimated.

The process of determining the cost of service for each customer class in the District contains its share of complexity and specificity. The tables containing the bulk of our analytical work are included in the Appendices of the report. We discuss the major points and findings in the body of the report and provide several summary tables and exhibits meant to assist the reader(s) in understanding the study results without having to digest the volume of work in the Appendix. The Executive Summary is meant to present the main findings as succinctly as possible.

We hope you will find the report and its organization to be accessible yet thorough. Thank you again for the opportunity to be of service to the District.

Sincerely,

Carol Malesky

Principal Financial Consultant



Table of Content

Executive Summary	5
Approach	5
Summary of Proposed Tap Fees and Rate Design Options	5
Tap Fees	8
Tap Fee Methodology.....	8
Equity Buy-In Method Calculations	9
System Capacities and Demands.....	11
Incremental Cost Method Calculations	11
Proposed Tap Fees	12
Assessment Schedule	13
Water and Wastewater Financial Plans	14
Long-Term Financial Plans	14
Financial Planning Assumptions	14
Revenue Requirements	15
Required Rate Revenues and Proposed Rate Revenue Increases.....	18
Cost-of-Service Study and Rate Design	19
Cost-of-Service Analysis and Rate Design Summary	19
Cost-of-Service Steps.....	19
Rate Design Alternatives	23
Summary	26
Appendix A – Tap Fee Calculations	
Appendix B – Financial Planning	
Appendix C – Cost of Service	
Appendix D – Rate Design	



List of Tables and Figures

Table 1: Summary of Net System Assets as of December 31, 2013	9
Table 2: Summary of District System Capacities - Existing	11
Table 3: Tap Fee Using Equity Buy-In Approach	11
Table 4: Summary of Total Growth-Related CIP and Capacities	12
Table 5: Comparison of Current Tap and Proposed Tap Fees	12
Table 6: Proposed 2015 Tap Fee Assessment Schedules	13
Table 7: Summary of Proposed Water and Wastewater System Revenue Required from Rates	14
Table 8: Key Assumptions for Forecasting Water and Wastewater Revenues and Expenses	14
Table 9: Projected Water and Wastewater System O&M Expenses (Million \$)	15
Table 10: Projected Water and Wastewater System Capital Improvement Expenditures (Million \$)	16
Table 11: Projected Water and Wastewater System Annual Debt Service (Million \$)	17
Table 12: Projected Water and Wastewater System Sources and Uses of Funds (Million \$)	17
Table 13: Projected Water and Wastewater System Fund Balances and Reserve Targets (Million \$)	18
Table 14: Summary of Water and Wastewater Class Cost of Service 2015 Results	19
Table 15: Water and Wastewater System 2015 Revenue Requirements	20
Table 16: Summary of Water System Units of Service 2015	21
Table 17: Summary of Wastewater System Units of Service 2015	22
Table 18: Summary of Water System COS by Class 2015	22
Table 19: Summary of Wastewater System COS by Class 2015	22
Table 20: Water Rate Design for 2015 – Existing Rate Structure with 2015 COS	24
Table 21: Summary of 2015 Irrigation Customers Rates	24
Table 22: Summary of Rate Structure for Wastewater	25
Table 23: Summary of Miscellaneous Fees	25
Table 24: Options for Proposed Tap Fees for 2015	26
Table 25: Proposed Water Rates Design for 2015	26
Table 26: Proposed Wastewater Rate Design for 2015	27



Executive Summary

In May 2014, the Pinery Water and Wastewater District (District) authorized MWH Global (MWH) to complete a cost-of-service rates and fees study (Study).

This study evaluates tap fees for water and wastewater; projects annual revenue requirements in separate financial plans for water and wastewater; calculates rates based on costs of service and determines the true costs of serving the District's customers; and evaluates alternative rate structures: the current water rate structure is calculated with fewer volumetric tiers and alternative wastewater rate structures such as a uniform volume rate compared with a single flat charge are presented.

The primary objective of this study was to provide different rate design options to the Pinery Board of Directors that would recover annual revenue requirements by customer class based on costs of service.

Approach

MWH used standard ratemaking practices to calculate the proposed rates and tap fees as recommended by the American Water Works Association (AWWA) and Water Environment Federation (WEF). The AWWA and WEF guidelines include the following steps:

1. Calculate costs of growth to be recovered from new connections. Three accepted approaches for calculating tap fees are equity buy-in, incremental cost, and a hybrid of the two approaches. Costs recovered through tap fees in Colorado are defined in the Colorado Revised Statutes (CRS) 29-20. The procedure used to calculate the District's tap fees is outlined in **Section 1: Tap Fees** of this report.
2. Determine the revenue requirements for a specified annual period referred to as a test year. Revenue requirements are defined as the amount of money the water and wastewater systems must recover from the rates charged to customers in order to meet the funds' operating and capital expenditures anticipated for the test year. The revenue requirements are described in more detail in **Section 2: Water and Wastewater Financial Plans** of this report.
3. Allocate revenue requirements to customer classes. Following standard procedures, the revenue requirements are allocated to specific customer classes based on how the various classes actually use the water and wastewater systems. Customer classes and demand characteristics of each class and allocation of revenue requirements to those classes are described in **Section 3: COS and Rate Design** of the report.
4. Determine rates for service. Rates are based on allocated costs of service for each customer class, meaning that the rate options for a given class reflect the cost of serving that class. In this study, MWH provides one alternative rate structure for water rates and two for wastewater rates. For the water system, various scenarios phasing in cost-of-service rates are presented. The evaluated rate structures and customer bill impacts are presented in **Section 3: COS and Rate Design** of the report.

Summary of Proposed Tap Fees and Rate Design Options

Currently the District assesses new customers water and wastewater tap fees that vary by water meter size or single family equivalent (SFE). MWH proposes the Board adopt tap fees calculated in this study that are based on most current fixed asset values and capital improvement program (CIP) project costs. Water tap fees are proposed to increase, while a decrease in wastewater tap fees is proposed. For purposes of this Study, projections assume wastewater tap fees at \$6,500 per SFE.

To meet the revenue requirements for 2015, a rate increase for both water and wastewater is necessary based on sustaining existing operations and projecting expected changes to these operations as a result of system growth and proposed capital facilities. In the process of evaluating the costs of service by customer class, MWH not only reviewed the current rate structure while adjusting the rates to recover total costs of service, but also offered a new rate structure in comparison with the existing rate structure for the District with fewer tiers. Table A presents a comparison between the District's current tap fees and the proposed fees. Table B presents a summary of proposed water and wastewater system revenue required from rates over a 10-year period. Tables C-1 through C-3 summarize the proposed 2015 water rates



(no change on the rate structure) and Table C-4 compares summarizes the 2015 wastewater rates with three rates structure options.

TABLE A: Comparison of Current and Proposed Tap Fees

Description	2014 Existing Tap Fee for ¾" Water Meter	Proposed 2015 Tap Fee for ¾" Water Meter
Water Tap Fee	\$24,518	\$29,553
Wastewater Tap Fee	\$8,589	\$6,500
Total	\$33,107	\$36,053

TABLE B: Summary of Proposed Water and Wastewater System Revenue Required from Rates

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
Rate Revenues (Million \$)	\$4.44	\$4.66	\$4.89	\$5.15	\$5.44	\$5.74	\$6.23	\$6.73	\$7.29	\$7.76
Rate Revenue Change	4%	4%	4%	4%	4%	4%	6.5%	6.5%	6.5%	6.5%
Wastewater System										
Rate Revenues (Million \$)	\$2.02	\$2.11	\$2.20	\$2.31	\$2.43	\$2.55	\$2.67	\$2.80	\$2.92	\$3.06
Rate Revenue Change	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

TABLE C-1: Proposed Water Rate Design for 2015 - Residential

Residential	Existing Rates		2015 Rates	
	Threshold (Kgal)	Rate	Threshold (Kgal)	Rate
Base	n/a	\$27.05	n/a	\$27.76
Tier 1	3	\$2.16	3	\$2.21
Tier 2	20	\$3.13	20	\$3.21
Tier 3	30	\$3.94	30	\$4.04
Tier 4	50	\$5.13	50	\$5.26
Tier 5	60	\$7.01	60	\$7.18
Tier 6	>60	\$14.07	>60	\$14.42



TABLE C-2: Proposed Water Rate Design for 2015 - Commercial

Commercial	Existing Rates		2015 Rates	
	1" Threshold (Kgal)	Rate	1" Threshold (Kgal)	Rate
Base	n/a	\$43.72	n/a	\$45.85
Tier 1 - 5 kgal	6	\$2.16	6	\$2.16
Tier 2 - 10 kgal	40	\$3.13	40	\$3.13
Tier 3 - 20 kgal	60	\$3.94	60	\$3.94
Tier 4 - >20 kgal	100	\$5.13	100	\$5.13
Tier 5 – n/a	>100	\$7.01	>100	\$7.01

TABLE C-3: Proposed Water Rate Design for 2015 – Irrigation and Golf Courses

	Existing Rates		2015 Rates	
	Base	Usage (Kgal)	Base	Usage (Kgal)
Large Irrigation	\$27.05	\$2.62	\$27.76	\$3.01
Pradera & CO GC	\$27.05	\$2.18	\$27.76	\$2.51
Pinery GC	\$27.05	\$2.42	\$27.76	\$2.76

TABLE C-4: Proposed Wastewater Rate Design Options for 2015

	Existing Rates	2015 Rates	Uniform Volume Rates	Flat Charge
Residential				
<3 kgal	\$27.84	\$29.02	\$6.35	\$39.68
>3 kgal	\$40.90	\$42.64	\$6.35	\$39.68
Volume per kgal	-	-	\$6.50	n/a
Commercial 1"				
Service Charge	\$84.08	\$56.98	\$12.66	\$111.70
Volume per kgal	\$4.27	\$2.53	\$6.50	n/a



Section 1

Tap Fees

Task 1 of MWH's rate study scope for Pinery Water and Wastewater District (District) is the tap fee analysis. Tap fees are one-time charges to new connections that recover a proportionate share of investments in capacity to serve new customers. This section outlines the tap fee methodology used and proposed water and wastewater tap fees for consideration by the District's Board of Directors. Additional detail can be found in Appendix A.

For tap fees, the primary policy the Board considered is that "growth pays for the costs of growth." Such a policy confirms that existing customers do not subsidize future customers, as well as prevents the subsidization of existing customers by future customers.

In addition to being based on District goals for establishing tap fees grounded in growth-pays-for-growth policy, tap fees are developed in compliance with CRS 29-20-104.5, Colorado's impact fee law. A local government may recover the costs of development provided that the fees assessed are:

1. Legislatively adopted
2. Applicable to a broad class of property
3. Set to recover the cost impacts on capital facilities caused by new development

Tap Fee Methodology

The American Water Works Association (AWWA) and Water Environment Federation (WEF) publish recommended industry guidelines for calculating tap fees. The two organizations describe three general approaches:

- Equity buy-in method
- Incremental cost method
- Combined or hybrid method that includes elements of both of the above

Equity Buy-In Method

Equity buy-in derives a fee based on the amount of money invested in the existing plant in service. Under the equity buy-in method, new customers pay a proportional amount that is equivalent to what the existing customers have already paid for the plant in service (system facilities). The equity buy-in method is most applicable in instances where the system has sufficient capacity to provide service to existing customers and to foreseeable new connections.

Major steps involved in the equity buy-in method are:

1. Determine available capacity in existing facilities
2. Calculate the value of that existing capacity either at its original cost (OC), book value (BV), replacement cost (RC), or replacement cost less depreciation (RCLD)
3. Adjust the value of capacity for outstanding debt and/or contributed assets
4. Calculate unit cost for capacity

When followed properly, this process results in a fee for each equivalent unit that reimburses the District for its past investments in facilities that are available now to provide capacity to new connections.

Incremental Cost Method

The incremental cost method is based on costs the District expects to incur in order to provide additional capacity for new customers. New customers pay a proportionate share of future capital improvement program (CIP) costs to expand the utility system. The incremental cost approach applies best when the existing system is not capable of providing service for new connections, and new infrastructure and natural resources are needed in order to expand the system.



The major steps involved in the incremental-cost method are:

1. Determine proportion of proposed CIP that is allocated for growth/expansion
2. Determine total capacity that the projects will add to the system in terms of equivalent units
3. Calculate unit costs for the new facilities

Results of the above process produce a fee for each equivalent unit that recovers planned investments in growth-related capital projects.

Combined/Hybrid Method

In many cases, new customers will use both the existing (or, reserve) capacity and will also require new capacity. The combined method takes both the equity buy-in and incremental cost methods into consideration to derive a single proportional fee that averages the costs of existing and proposed capacity over all new connections.

Methodology Used for District's Proposed Tap Fees

The combined method was followed in calculating water tap fees and both the combined method and the equity buy-in method was used to calculate the potential wastewater tap fees for the District. Analysis and discussion regarding the water and wastewater systems show reserve capacity in the existing systems as well as substantial future costs for water system expansion to serve new customers. The tap fee analysis calculates a range of defensible tap fees based on the District's costs and capacity.

Equity Buy-In Method Calculations

Assumptions used to calculate the buy-in component of tap fees include asset valuations, system capacities, and capacity demands.

Valuing System Assets

Using the District's fixed asset inventory and Engineering News Record (ENR) construction cost indices, replacement cost were calculated. This step is important in the equity buy-in component of the tap fees because it determines the system value that recovers a certain proportion of the District's investment in its current system. The District's tap fees are proposed following the RC approach to account for inflation of assets to today's dollars.

Debt Service and Contributed Capital

To avoid double-charging new customers for debt service paid in monthly user charges, outstanding debt is subtracted from fixed asset values. In addition, assets contributed by developers or others are subtracted from fixed asset values. This represents a full buy-in to the water resources facilities.

Contributed capital, or infrastructure and water rights turned over to the District by developers, are excluded from the facilities values based on District Staff analysis. Contributions made by outside-District customers for capacity in the District's wastewater treatment plant expansion were also excluded from the asset value.

The table below presents a summary of the net system assets as of December 31, 2013 for each system.

Table 1: Summary of Net System Assets as of December 31, 2013

Description	Replacement Cost - Water System	Replacement Cost -Wastewater System
Total Asset Value	\$102,042,437	\$74,084,816
Less:		
Developer Contributed Assets	21,082,443	24,756,706
Dev. Contributions for WWTP Expansion	3,182,385	5,000,000
Outstanding Principal on Debt		6,460,000
Net Asset Value	\$77,777,609	\$37,868,109





System Capacities and Demands

Capacities for the District's existing and future systems facilities were calculated based on District Staff assumptions. Demands on the systems are based on engineering analyses of required capacity per SFE. These demands are related to water produced rather than actual billed consumption. The required gallons per day per SFE are derived from Master Plan requirements of 413 gpd times the system-wide peaking factor of 2.8. Wastewater capacity per SFE is based on billing data and peak flows at the treatment plant. The following table summarizes the existing system capacities.

Table 2: Summary of District System Capacities - Existing

Description	Water System	Wastewater System
Existing System Capacity (GPD)	9,500,000	2,000,000
Capacity Reserved for Intergovernmental Agreements (GPD)	n/a	600,000
Net System Capacity for Customers (GPD)	9,500,000	1,400,000
Required Capacity for 1 SFE (GPD)	1,156	240
Existing Capacity (SFEs)	8,215	5,833

Equity Buy-In Calculation

Given the net asset value and current system capacities, the equity buy-in fee calculation using asset replacement costs results in the following:

Table 3: Tap Fee Using Equity Buy-In Approach

Description	Water System	Wastewater System
Net Asset Value	\$77,777,609	\$37,868,109
Existing Capacity (SFEs)	8,215	5,833
Buy-In Tap Fee per SFE	\$9,500	\$6,500

Incremental Cost Method Calculations

Information used to calculate the incremental cost component of the tap fees is presented below.

Capital Improvement Program (CIP)

CIPs for each system were obtained from District Staff. Discussions of the proportion of each capital project required to serve new customers resulted in the specific growth-related costs to be recovered through tap fees.

System Capacities

District Staff prepared CIPs following capacity requirements and capacities of planned system facilities. The water system CIP consists of water supply, storage, and pump station and pipeline projects. The wastewater system CIP consists of a wastewater treatment plant expansion in the end year of the planning period.

Costs and capacities are summarized below.

**Table 4: Summary of Total Growth-Related CIP and Capacities**

Description	Value
Water System	
Water Supply	\$28,485,625
Additional Capacity Provided (SFEs)	1,708
Water Storage	\$9,350,000
Additional Capacity Provided (SFEs)	2,632
Pump Stations/Pipelines	\$2,592,500
Additional Capacity Provided (SFEs)	977
Total Growth-Related Cost – Water System	\$40,428,125
Wastewater System	
Wastewater Treatment	\$6,000,000
Additional Capacity Provided (SFEs)	4,167
Total Growth-Related Cost – Wastewater System	\$6,000,000

Carrying Costs of Capital

Financial carrying costs in the context of tap fees occur when the District is expending capital for expansion of its systems while incrementally recovering those up-front expenditures over time. Expenditures are front-loaded and the recovery of the fees takes place over a long period of time; therefore, there is a time value of money called carrying costs that normally occurs. Tap fees collected from new customers partially offset the capital projects planned for construction, but full recovery of those CIP costs cannot be expected to occur until all of the planned units (i.e. customers) have connected to the system and paid their fee. Therefore, carrying costs occur due to the difference between cash outflow and cash inflow over time. If cash outflow exceeds cash inflow, then carrying costs accrue to the District making cash payments (i.e. out flows) for projects.

MWH factored in the carrying costs of the District's planned CIP and calculated the amount to be added to the tap fee that would make the District whole through build-out. The proposed tap fees presented next include the carrying cost component for each system.

Proposed Tap Fees

Combining the equity buy-in and incremental cost components of the tap fees results in the following schedule of tap fees proposed for implementation in 2015. A comparison between the District's current tap fees and the proposed fees using the hybrid method for water and buy-in method for wastewater is shown below.

Table 5: Comparison of Current Tap and Proposed Tap Fees

Description	2014 Existing Tap Fee for ¾" Water Meter	Proposed 2015 Tap Fee for ¾" Water Meter
Water Tap Fee	\$24,518	\$29,553
Wastewater Tap Fee	\$8,589	\$6,500
Total	\$33,107	\$36,053



Assessment Schedule

The District's current tap fee assessment schedule is based on a set of meter equivalency ratios. The schedule of tap fees following the proposed tap fees and existing meter ratios is presented for the Board's consideration.

Table 6: Proposed 2015 Tap Fee Assessment Schedules

Meter Size	SFE Ratios	Water Tap Fees	Wastewater Tap Fees (Equity Buy-In)	Total Fee (Water Hybrid and Wastewater Equity Buy-In)
3/4"	1.0	\$29,553	\$6,500	\$36,053
1"	2.0	\$59,106	\$13,000	\$72,106
1 1/2"	4.0	\$118,212	\$26,000	\$144,212
2"	7.0	\$206,871	\$45,000	\$252,371
3"	16.0	\$472,848	\$104,000	\$576,848



Section 2

Water and Wastewater Financial Plans

Long-Term Financial Plans

Task 2 of MWH's rate study scope for the District provides long-term financial planning tools for the District's water and wastewater systems. The 10-year tools include total operating and capital requirements that each utility needs to recover from revenue sources based on sustaining existing operations and projecting expected changes to these operations as a result of system growth and proposed capital facilities. The tools are comprehensive cash-flow analyses incorporating financial goals that are maintained by the District. This report summarizes the assumptions and calculations supporting rate revenue increases over a 10-year period proposed for consideration by the Board. Please refer to Appendix B for more information.

Throughout the financial planning tasks, MWH worked with District Staff to refine budget inputs, assumptions, and analyzing alternative funding scenarios. Revenue requirements for 2015 are used to evaluate the costs of service by customer class and calculate alternative rate structures, reported in Section 3. Future projections are dependent on tap fee revenues and growth, and are subject to change.

A summary of proposed changes to revenues recovered from rates is presented below.

Table 7: Summary of Proposed Water and Wastewater System Revenue Required from Rates

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
Rate Revenues (Million \$)	\$4.45	\$4.66	\$4.89	\$5.15	\$5.44	\$5.74	\$6.23	\$6.73	\$7.29	\$7.89
Rate Revenue Change	4%	4%	4%	4%	4%	4%	6.5%	6.5%	6.5%	6.5%
Wastewater System										
Rate Revenues (Million \$)	\$2.02	\$2.11	\$2.20	\$2.31	\$2.43	\$2.55	\$2.67	\$2.80	\$2.92	\$3.06
Rate Revenue Change	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%

Financial Planning Assumptions

Estimating future revenues and expenses requires various assumptions to be applied in the financial plans. The following table summarizes the key forecasting assumptions used in the analysis.

Table 8: Key Assumptions for Forecasting Water and Wastewater Revenues and Expenses

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water & Wastewater Systems										
Avg. Customer Growth (SFEs)	0.35%	0.34%	0.34%	0.91%	0.90%	0.90%	0.89%	0.55%	0.55%	0.54%
O&M Cost Inflation Factors	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%	2.25%
Capital Cost Inflation Factors	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%	2.90%
Fund Balance Interest Rate	0.23%	0.50%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%

Additional assumptions were included throughout the financial planning period.



1. The 10-year capital improvement plan (CIP) was derived from District Staff documents that projected project costs over the planning period. Annual inflationary factors were applied to project costs.
2. Typical projections of rate revenues for future years are based on revenue under existing rates for the current year. Conservative growth in taps was assumed before proposed rate revenue increases.
3. Water tap fees are assumed at the proposed 2015 level developed in this Study of \$29,553 per SFE. Wastewater tap fees were set at the hybrid calculated level of \$4,500. MWH recommends that the Board increase these fees annually by capital inflation estimates.
4. Debt issues are projected for the water system in 2020 and alternate years thereafter. With the understanding that the District would likely seek additional lower-cost Colorado Water Conservation Board (CWCB) loans, for forecasting purposes, assumptions include 1.0% cost of issuance, no debt reserve requirement, 30-year repayment terms at 4.0% interest per year. These amounts are estimates provided by MWH for planning purposes and do not represent any decisions made by the Board or District.

Revenue Requirements

Revenue requirements for the District's water and wastewater systems are the total operating and capital expenditures (including debt service requirements, funding of reserve accounts and cash funding of capital expenditures) that must be recovered from the revenues provided from its rate and fee structure to adequately protect, operate, maintain and develop the water and wastewater systems. Determining the revenue requirements for what is called the test year is important because the calculated rates need to recover the revenue requirements in the appropriate year. For this analysis, the first test year for which rates will be developed is 2015. The financial planning analysis projects revenue requirements for multiple test years. For each year in the analysis, subsequent tables present components of the revenue requirements.

Operating Expenses

Operating expenses include the expected operating and maintenance expenses for operations, plus non-operating expenses that are shared between the water and wastewater systems. The District's operating budget is organized by operating expenses specific to each utility and non-operating expenses such as accounting, administration, billing, insurance, and other expenses. Expenses were escalated by applying the general inflation estimates provided previously in Assumptions. It is important to note that some costs escalate partially due to growth in addition to the escalation factor used. O&M expenses are summarized below. Water expenses show annual WISE O&M costs separately. These include the take-or-pay subscription amounts, operational reserves, and other related expenses.

Table 9: Projected Water and Wastewater System O&M Expenses (Million \$)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
General O&M	\$3.26	\$3.36	\$3.45	\$3.55	\$3.65	\$3.79	\$3.88	\$4.00	\$4.10	\$4.25
WISE O&M	\$0.11	\$0.19	\$0.55	\$0.68	\$0.83	\$1.09	\$1.45	\$1.48	\$1.51	\$1.54
Total Water O&M	\$3.37	\$3.55	\$4.00	\$4.23	\$4.48	\$4.87	\$5.33	\$5.48	\$5.61	\$5.79
Wastewater System										
Total WW O&M	\$1.31	\$1.34	\$1.37	\$1.41	\$1.44	\$1.47	\$1.51	\$1.54	\$1.58	\$1.62

Capital Improvement Expenditures

Capital improvement expenditures include any planned expenditures for infrastructure-related items. The capital improvement plan provided by the District was included in the financial plans through 2024. As mentioned previously, inflation for CIP projects was applied to the projects for future projections. Water system CIP includes water supply projects associated with WISE, CCPWA, and local water supply projects which are shown separately in the table below. A portion of the capital improvements each year is funded by rate revenues for system improvements and tap fees for growth-related capital. The proportion for growth-related system improvement is identified in the table.

As the table shows, significant project expenditures are expected for water supply projects. The wastewater system has



sufficient capacity until late in the planning period, where an expansion of treatment plant capacity is projected to be needed in 2024.

Table 10: Projected Water and Wastewater System Capital Improvement Expenditures (Million \$)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
General Capital	\$6.67	\$3.82	\$0.94	\$1.13	\$1.16	\$2.68	\$2.76	\$3.47	\$3.57	\$1.01
Water Supply	\$6.24	\$1.14	\$0.55	\$2.07	\$3.23	\$5.19	\$5.67	\$2.86	\$4.69	\$4.86
Total Water Capital	\$12.91	\$4.96	\$1.49	\$3.20	\$4.39	\$7.87	\$8.43	\$6.33	\$8.26	\$5.87
Percent System Improvement	55%	29%	22%	37%	58%	78%	77%	70%	69%	61%
Wastewater System										
Total WW Capital	\$0.35	\$0.31	\$0.70	\$0.16	\$0.17	\$0.17	\$0.18	\$0.18	\$0.19	\$8.18
Percent System Improvement	0%	0%	0%	0%	0%	0%	0%	0%	0%	100.0%

Debt Service and Coverage Requirements

Outstanding Debt

The District currently is obligated to repay a series of Colorado Water Resources and Power Development Authority (CWRPDA) loans for the water system and a Revenue Note for the wastewater system. Loan repayment on CWCB loans will begin in 2015, issued for WISE expenditures. The District also expects to borrow additional CWRPDA funds for a pump station replacement which is expected to begin repayment in 2016.

Proposed Debt

MWH is currently projecting needs for future debt issues for each system. The proceeds needed are projected after considering fund balances, debt service coverage ratios, and rate revenues. In general, debt issues have been delayed to later in the planning period. In the water system, the District expects to fund future water supply projects with CWCB loans. Proceeds from proposed debt issues in water fund projects not covered by cash from user rates and tap fees. The wastewater system projections include a bond issue for the wastewater treatment plant expansion, currently included in the projections for 2024.

Coverage Requirements

Assumptions on the District's rate covenants for outstanding debt are that revenue available for debt service on water and wastewater bonds and CWRPDA loans must be greater than or equal to 125% of total debt service each year. CWRPDA loans and the Wells Fargo Note actually require a minimum coverage of 110% of maximum annual debt service. MWH assumes a more conservative minimum of 125%. Revenue available for debt service in this calculation is equal to gross revenues including tap fees. Operating expenses are then subtracted from gross revenues to determine revenue available for debt service. The financial plan meets this coverage requirement, even when the calculation is done within each system with the exception of 2022 and 2023. In these two years, debt service coverage drops below 125% in the water fund when considering water revenues and debt only. When combined with wastewater revenues and debt, the coverage minimum is achieved.

Existing and proposed annual debt service results are presented below.

**Table 11: Projected Water and Wastewater System Annual Debt Service (Million \$)**

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
Existing Debt	\$0.84	\$1.06	\$1.31	\$1.44	\$1.49	\$1.60	\$1.75	\$1.92	\$2.01	\$2.04
Proposed Debt	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.14	\$0.27	\$0.55	\$0.84	\$1.08
Total Water Debt	\$0.84	\$1.06	\$1.31	\$1.44	\$1.49	\$1.74	\$2.02	\$2.47	\$2.85	\$3.12
Wastewater System										
Existing Debt	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.34
Proposed Debt	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.19
Total WW Debt	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.81	\$0.53

Sources and Uses of Funds

Part of determining revenue requirements involves balancing the sources of funds for each system and the uses of funds for each system. Sources of funds include rate revenues, operating revenues such as groundwater protection fees, tap fees, and bond and loan proceeds. Beginning fund balances and interest income are also sources of funds.

Uses of funds include O&M expenses, debt service payments, cash funded capital improvements, and transfers to other funds. Additions to fund balances are also a use of funds. In years where sources of funds are greater than the uses of funds, fund balances are increasing. In years where uses of funds are greater than sources of funds, fund balances are being drawn down, typically for capital improvements.

The net difference between sources and uses of funds each year represents the change in fund balances. Each year, the goal is to balance the need for rate revenue increases and debt issues with sources and uses of funds. The table below shows the annual sources and uses, including additions to and subtractions from fund balances.

As discussed with District staff, MWH prepared separate financial plans that included assumptions on fund balances in the water system versus the wastewater system. The water and wastewater systems are one enterprise fund of the District; therefore to balance rate revenue needs in one fund, transfers of fund balances were projected if needed. Transfers of funds from the wastewater system to the water system are included for 2015 and between 2018 and 2023.

Table 12: Projected Water and Wastewater System Sources and Uses of Funds (Million \$)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
Sources	\$14.50	\$10.46	\$6.42	\$9.61	\$10.64	\$16.41	\$12.50	\$19.33	\$11.92	\$19.84
Uses	\$17.12	\$9.58	\$6.80	\$8.87	\$10.37	\$14.53	\$15.79	\$14.37	\$16.71	\$14.86
Change in Fund Balance	(\$2.62)	\$0.89	(\$0.39)	\$0.74	\$0.27	\$1.88	(\$3.29)	\$4.95	(\$4.79)	\$4.98
Wastewater System										
Sources	\$0.11	\$2.60	\$2.57	\$2.22	\$2.42	\$2.45	\$2.50	\$2.54	\$1.60	\$10.12
Uses	\$2.48	\$2.46	\$2.89	\$2.38	\$2.42	\$2.45	\$2.50	\$2.53	\$2.58	\$10.40
Change in Fund Balance	(\$2.37)	\$0.14	(\$0.32)	(\$0.16)	\$0.00	\$0.00	(\$0.00)	\$0.01	(\$0.98)	(\$0.27)



Fund Balances

The District's water and wastewater system projected cash and investment balances and its annual unrestricted cash flow was needed to determine the amount of existing fund balance was available for uses of funds. Fund balances include the operating and capital funds for the water system and wastewater system.

By policy, the District Board established specific fund reserves. Fund reserves ensure the District maintains healthy fund balances to address unexpected drops in revenues due to weather or emergency capital improvement needs. Reserves restrict the use of fund balances each year.

The following table presents the projected year-end fund balances versus the target reserves.

Table 13: Projected Water and Wastewater System Fund Balances and Reserve Targets (Million \$)

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Water System										
Ending Balance	\$2.46	\$3.35	\$2.96	\$3.69	\$3.97	\$5.84	\$2.56	\$7.51	\$2.72	\$7.70
Target	\$2.29	\$2.32	\$2.35	\$2.39	\$2.43	\$2.49	\$2.56	\$2.64	\$2.72	\$2.81
Externally Restricted										
Wells Fargo - 2010 Debt Service Reserve	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04	\$1.04
Internally Restricted										
Groundwater Protection	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22	\$0.22
Rate Stabilization Fund	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
Medical Benefits Reserve	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03
Water Project Fee Reserve	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
CWCB Loan Debt Reserve	\$0.01	\$0.03	\$0.07	\$0.11	\$0.15	\$0.20	\$0.27	\$0.35	\$0.44	\$0.53
Wastewater System										
Ending Balance	\$2.12	\$2.26	\$1.94	\$1.78	\$1.78	\$1.78	\$1.78	\$1.78	\$0.08	\$0.53
Target	\$1.78	\$1.78	\$1.78	\$1.78	\$1.78	\$1.78	\$1.78	\$1.78	\$0.53	\$0.53
Externally Restricted										
Operation Reserve for CWRPDA 2002 Loan	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$1.25	\$0.00	\$0.00
Internally Restricted										
Rate Stabilization Fund	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50	\$0.50
Medical Benefits Reserve	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03	\$0.03

Required Rate Revenues and Proposed Rate Revenue Increases

As presented in Table 1, required rate revenues are projected to increase by 4% for the water and wastewater systems from 2015 through 2020 given the projections presented in this technical memorandum. This forecast forms the basis for determining whether any adjustments need to be made to the actual user rates as the total revenue requirements change from year to year. Depending on the rate structure, a 4% increase in rate revenues does not necessarily mean a customer's bill will increase by 4%. The next section in this report includes an evaluation of the proposed revenue requirements under existing and alternative rate structures for each of the District's customer classes.



Section 3

Cost-of-Service Study and Rate Design

Cost-of-Service Analysis and Rate Design Summary

Following the determination of revenue requirements for 2015 in the long-term financial planning models, the next tasks to complete MWH's rate study scope for the District comprise the cost-of-service (COS) analysis and alternative rate structure review. This section outlines the steps completed in the COS analysis and presents the rates resulting from small changes to the District's rate structures proposed to better achieve its goals.

The COS analysis was completed by following generally accepted utility ratemaking methodologies as described by the AWWA and WEF. Costs to serve each class of customers were calculated in the COS analysis. MWH's rate design model was used to calculate rates that recover those costs. In addition, impacts to representative customers' bills were calculated to show the effect of alternative rate designs on current bills.

A summary of results for 2015 compared with revenue estimated under existing 2014 rates with 2013 accounts and usage is presented below for water and wastewater costs of service. Of particular note is the contract/wholesale customer of the wastewater system; wholesale rates are based on the contract between the user and District. More detail for the COS analysis can be found in Appendix C.

Table 14: Summary of Water and Wastewater Class Cost of Service 2015 Results

Customer Class	Class Cost of Service	Revenues Under Existing Rates	Difference - Existing from COS	% Difference
Water				
Residential	\$3,519,423	\$3,479,749	(\$39,674)	(1.14%)
Commercial	86,121	102,075	15,954	15.63%
Large Irrigation	275,462	175,536	(99,926)	(56.93%)
Pinery Golf Irrigation	193,895	143,976	(49,919)	(34.67%)
CGC & Pradera Golf Irrigation	371,482	247,559	(123,923)	(50.06%)
Total Water	\$4,446,382	\$4,148,895	(297,487)	(7.17%)
Wastewater				
Residential	\$1,911,108	\$1,833,337	(\$77,771)	(4.24%)
Commercial	64,340	98,125	33,785	34.43%
Contract/ Wholesale	36,171	50,786	14,615	28.78%
Total Wastewater	\$2,011,619	\$1,982,248	(\$29,371)	(1.48%)

Cost-of-Service Steps

The following steps were used to prepare the COS analysis:

1. Determine the revenue requirements for a specified annual period referred to as a test year. Revenue requirements are defined as the amount of money the water and wastewater utility must recover from the rates charged to customers in order to meet all of the funds' operating and capital expenditures anticipated for the test year. The revenue requirements were described in more detail in the financial planning section. For purposes of evaluating alternative rates and rate structures, 2015 is set as the test year.
2. Allocate the revenue requirements to customer classes. Following cost allocation guidelines, revenue requirements are allocated to specific customer classes based on how various classes actually use the systems. Demand characteristics of customer classes and allocations of costs to customer classes are summarized below.



- Determine rates for service. Rates are based on the allocated costs of service for each customer class, meaning that recommended rates for a given class reflect the cost of serving that class. In this study, MWH prepared different rate structures for the water and wastewater systems.

Revenue Requirements

Revenue requirements for District's water and wastewater systems include total operating and capital expenditures (including debt service requirements, funding of reserve accounts and cash funding of capital expenditures) that must be recovered from the revenues provided from its rate and fee structure. Revenue requirements for 2015 are summarized below. Non-rate revenues include miscellaneous fees and charges that reduce the revenue required from rates. These revenues include groundwater protection fees, ready-to-serve charges, miscellaneous fees, tap fees, other internal transfers, and interest earnings. The total user-charge requirement is the amount allocated to District's customer classes in the COS analysis.

Table 15: Water and Wastewater System 2015 Revenue Requirements

	Water System	Wastewater System
Operating and Maintenance Expenses	\$3,370,673	\$1,314,628
Annual Debt Service - Outstanding Debt	\$837,110	\$812,193
Annual Debt-Service - Projected Issues	\$0	\$0
Capital Projects	\$12,909,263	\$353,483
Bond Issuance Costs	\$0	\$0
Adjustments to Working Capital	\$0	\$0
Change in Fund Balance	(\$2,458,650)	\$190,819
Total Revenue Requirement	\$14,658,396	\$2,671,122
(Less) Non-User Charge Revenue		
Wholesale/Contract Revenues	\$0	\$0
Other Revenues	\$731,841	\$0
Projected Debt Proceeds	\$5,432,374	\$0
Total Other Capital Inflows	\$3,531,608	\$474,875
Total Development Fees	\$457,926	\$99,938
Interest/Investment Earnings	\$58,265	\$84,691
Total User-Charge Requirement	\$4,446,382	\$2,011,619



Customer Demand Characteristics

Water System

COS ratemaking is a process of allocating utility system user-charge revenue requirements to customers based on demands on the system. Individual customer demands can vary depending on the nature of the water use at the location where service is provided. For example, water demand for a family residing in a typical single-family home is different than the water demand for a large commercial customer. Ratemaking guidelines suggest grouping customers with similar demands into classes. Rates are then developed for each customer class with each individual customer paying the class' average allocated cost of service for each unit of specific usage.

The District's water customer classes include:

- Residential
- Commercial
- Large Irrigation
- Golf Course Irrigation

Costs in a water system are incurred as a result of customer demands. Customer demands are measured on various levels based on the notion of cost causation, which means the District incurs a cost of providing service as a result of a particular kind of demand. AWWA describes two generally accepted methods for allocating costs: the base extra-capacity method, and the commodity demand method. MWH followed the base extra-capacity method for characterizing the District's customer demands and allocation of system costs. Categories of usage and costs include:

- Base or average day demands
- Extra-capacity demands including usage greater than average day demands
- Customer representing the number of accounts
- Meter representing equivalent meters or Single Family Equivalent (SFEs)

Using 2013 billing data, MWH projected units of service for customer demands in 2015. Units of service are summarized below. One thousand gallons is represented as kgals.

Table 16: Summary of Water System Units of Service 2015

Customer Class	# of Customer Accounts	# of SFEs	Total Annual Usage (Kgal)	Max-Day Usage (Kgal)	Max-Hr. Usage (Kgal)
Residential	4,164	4,164	610,767	3,610	5,600
Commercial	28	70	21,102	123	190
Large Irrigation	51	92	60,680	528	820
Pinery Golf Irrigation	1	29	59,360	451	451
CGC & Pradera Golf Irrigation	8	75	112,666	856	856
Totals	4,252	4,430	864,575	5,569	7,918

Wastewater System

Wastewater usage characteristics by customer class are used to allocate the user-charge revenue requirements to the District's customers. Industry guidelines promote two primary approaches to recovering wastewater costs: the quantity-quality approach and the surcharge approach. Under the quantity-quality approach, each class' waste is measured and rates are based on the amount of pollutants discharged to the system. With the surcharge approach, all customers are assumed to contribute average domestic strength waste. Those monitored users discharging above a certain limit are



assessed a high strength surcharge. As the District does not have monitored industrial customers and its flow is primarily of domestic strength, no strength parameters are necessary in its rate design. The District serves contract customers outside its boundaries; therefore, the units of service summarized in the table below represent treatment flow and collection system flow. It is determined that the contract customers' flow uses the District's main collection system and is therefore included in the units of service for collection. In addition, the Equivalent Bills category represents the number of SFEs billed annually rather than the number of bills sent annually. A commercial customer may represent 4 single family equivalents, and would therefore receive 12 actual bills per year representing 48 SFE bills.

Table 17: Summary of Wastewater System Units of Service 2015

Customer Class	Flow (Kgal)	Equivalent Bills (SFEs)	Collection Flows (Kgal)
Residential	577,481	48,300	577,481
Commercial	20,214	1,152	20,214
Contract/ Wholesale	9,291	12	9,291
Totals	606,986	49,464	606,986

Allocated Costs of Service by Class

In a multi-step process, the total user-charge revenue requirement was allocated to each customer class in terms of each class' water demands, wastewater usage, and other service requirements. First, District Staff allocated costs to system components and functions. Then MWH applied standard cost allocation procedures which included allocation of costs by functions to customer classes. The following tables summarize the allocation of costs to customer classes. Totals for each class are used to compare 2015 COS by class with revenue under existing rates to determine the equity of the current rates by class.

Table 18: Summary of Water System COS by Class 2015

Customer Class	Base	Max-Day	Max-Hour	Customer	Meter	Total
Residential	\$1,449,650	\$333,927	\$324,158	\$979,024	\$432,663	\$3,519,423
Commercial	50,085	11,171	11,009	6,583	7,273	86,121
Large Irrigation	144,023	62,429	47,440	11,991	9,579	275,462
Golf Course Irrigation	408,302	144,195	0	2,116	10,764	193,895
GRAND TOTALS	2,052,062	\$551,721	\$382,607	\$999,714	\$460,278	\$4,446,382

Table 19: Summary of Wastewater System COS by Class 2015

Customer Class	Flow	Customer	Collection Flow	Total
Residential	\$783,132	\$305,675	\$822,302	\$1,911,108
Commercial	\$28,266	\$7,291	\$28,784	\$64,340
Contract/ Wholesale	\$22,865	\$76	\$13,230	\$36,171
GRAND TOTALS	\$834,262	\$313,041	\$864,315	\$2,011,619



Rate Design Alternatives

A major objective of this study was to evaluate alternative rate structures that recover costs to serve the District's customers and achieve conservation, equity, and simplicity goals.

The District's existing water rate structure is commonly referred to as an inclining block structure. Inclining block structures are characterized by unit charges for water usage that increase as the total volume of water usage increases. Generally, rates for water usage increase at a threshold that creates one price applicable for water usage up to that point, called a block or tier of usage, and another, higher, price for water usage above the threshold. The existing residential rates include six tiers (5 tiers for commercial customers) and also feature a monthly service charge per SFE charged to customers each month regardless of the amount of water consumed. The monthly charge is typical of most water rate structures used by water utilities, including the inclining block structure.

With District input and feedback, MWH evaluated a new water rate structure that consists of fewer tiers for residential customers and commercial customers. Proposed changes to irrigation and golf course rates to meet costs of service were considered to be a significant impact that should be phased in over a number of years. Rate alternatives evaluated, therefore, were the following:

1. Existing water rate structure
 - a. COS rates
 - b. 2-year phase-in of COS rates
 - c. 3-year phase-in of COS rates
 - d. 4-year phase-in of COS rates
2. Reduced tiers for residential and commercial customers
 - a. COS rates
 - b. 2-year phase-in of COS rates
 - c. 3-year phase-in of COS rates

Wastewater rate structure alternatives were developed to improve equity among residential users and simplify the current rate structure for all customers. The alternatives include:

1. Existing wastewater rate structure with 2015 COS rates
2. Monthly service charge with uniform volume rate calculated for average winter quarter water consumption
3. Monthly flat charge

The section below summarizes the rate structure findings based on Board direction. More detail on the rate design can be found in Appendix D. The average bill impact for a typical residential customer given the preferred rate structures is presented in Appendix D to this report.

Rationale for Alternative Rate Structures

There are three important considerations that need to be addressed when designing rates:

1. Equity among different classes of customers (interclass);
2. Equity inside each class related to different customers in the class (intraclass); and,
3. Revenue stability of the utility as it pertains to the rate design.

The alternatives evaluated by MWH were expected to recover the customer class revenue requirements with no material surplus or shortage, meaning that the rates are not expected to produce any measurable subsidies from one class to another class. Inclining block rates are by their nature more risky than any uniform rate structure because the inclining block structure depends on a certain amount of consumption at higher volumes in order to recover the full class revenue requirement. In a water conserving environment, it is expected that customers would indeed conserve water, especially discretionary uses of water, thus reducing the total volume used and, depending on the rate design, reducing the total revenues earned. An estimate of water conservation was considered in the rate design process and rates were calculated to recover the full 2015 costs of service.



Board direction resulted in the following water and wastewater rates for 2015:

1. Water rates
 - a. Existing rate structure with 2015 COS rates for residential customers
 - b. Existing rate structure and existing rates with 2015 monthly service charge for commercial customers
 - c. No change in large irrigators and golf courses rate structure with 15% increase in volume rate and 2015 monthly service charge.
2. Wastewater rates
 - a. Flat monthly charge for all customers
 - b. Commercial charge varies by meter size

Tables below summarize the Board-selected rate structures and rates.

Table 20: Water Rate Design for 2015 – Existing Rate Structure with 2015 COS

Residential	Existing Rates		2015 Rates	
	Threshold (Kgal)	Rate	Threshold (Kgal)	Rate
Base	n/a	\$27.05	n/a	\$27.76
Tier 1	3	\$2.16	3	\$2.21
Tier 2	20	\$3.13	20	\$3.21
Tier 3	30	\$3.94	30	\$4.04
Tier 4	50	\$5.13	50	\$5.26
Tier 5	60	\$7.01	60	\$7.18
Tier 6	>60	\$14.07	>60	\$14.42

Commercial	Existing Rates		2015 Rates	
	1" Threshold (Kgal)	Rate	1" Threshold (Kgal)	Rate
Base	n/a	\$43.72	n/a	\$45.85
Tier 1 - 5 kgal	6	\$2.16	6	\$2.16
Tier 2 - 10 kgal	40	\$3.13	40	\$3.13
Tier 3 - 20 kgal	60	\$3.94	60	\$3.94
Tier 4 - >20 kgal	100	\$5.13	100	\$5.13
Tier 5 – n/a	>100	\$7.01	>100	\$7.01

Given the rates for 2015 for the District, an increase in both base rates and volumetric rates for Irrigation is also proposed while maintaining the existing rate structure. The table below summarizes the proposed change which represents a 15% increase in volume rates for 2015, a negotiated increase between the District and the Golf Course Irrigators. MWH recommends reviewing usage and costs of service in 2015 to calculate rates for 2016 and annually thereafter to ensure these customers are paying an equitable share of costs.

Table 21: Summary of 2015 Irrigation Customers Rates

	Existing Rates		2015 Rates	
	Base	Usage (Kgal)	Base	Usage (Kgal)
Large Irrigation	\$27.05	\$2.62	\$27.76	\$3.01
Pradera & CO GC	\$27.05	\$2.18	\$27.76	\$2.51
Pinery GC	\$27.05	\$2.42	\$27.76	\$2.76

**Table 22: Summary of Rate Structure for Wastewater**

	Existing Rates	2015 Rates	Uniform Volume Rates	Flat Charge
Residential				
<3 kgal	\$27.84	\$29.02	\$6.35	\$39.68
>3 kgal	\$40.90	\$42.64	\$6.35	\$39.68
Volume per kgal	-	-	\$6.50	n/a
Commercial 1"				
Service Charge	\$84.08	\$56.98	\$12.66	\$111.70
Volume per kgal	\$4.27	\$2.53	\$6.50	n/a

Miscellaneous Fees

The District assesses other fees to cover stand-by customers, bulk water customers, groundwater protection, and miscellaneous fees for administrative services. MWH recommends the following actions:

Table 23: Summary of Miscellaneous Fees

Fee	Current Fee	Optional Revisions to 2015 Various Fees	Notes
Ready-to-Serve (monthly)			
Water and Sewer	\$16.67	\$17.34	Based on rate revenue increase for 2015
Water Only	\$9.00	\$9.36	Based on rate revenue increase for 2015
Bulk Water (monthly)			
Monthly meter rental	\$150	\$176.23	Consistent with 3" Commercial meter monthly service charge
Volume per kgal	\$5.82	\$6.50	Consistent with customer class cost of service
Groundwater Protection (per bill)	\$2.37	\$2.37	Based on no change in cost of service
Other Fees (late payments, transfers, shutoff, turn on, etc.)	varies	n/a	TBD based on study of costs of service



Section 4

Summary

Based on the analysis of the District's costs and user characteristics in this 2014 Cost-of-Service Rates and Fees Study, MWH proposes adjustments in the District's tap fees and user rates. Proposed tap fees include an increase for water per SFE and a decrease for wastewater per SFE.

Using the 10-year financial planning tools which include total operating and capital requirements that each utility needs to recover from revenue sources, required rate revenues are projected to increase by for both the water and wastewater systems from 2015 through 2024. In the process of evaluating the costs of service by customer class, MWH designed alternative rate structures for the Board's consideration. Based on Board direction, the water rate structure will not change and rates will be updated for 2015. For the wastewater system, MWH designed alternative rate structures for the Board's consideration and Board preference is to assess a monthly flat charge to each customer.

In general, MWH recommends the District continues to monitor its costs and revenues to ensure adopted rates and fees continue to meet the goals and objectives established by the Board.

Table 24: Options for Proposed Tap Fees for 2015

Description	2014 Existing Tap Fee for ¾" Water Meter	Proposed 2015 Tap Fee for ¾" Water Meter using Hybrid for both water and wastewater	Proposed 2015 Tap Fee for ¾" Water Meter using Hybrid for water and Equity Buy-In for wastewater
Water Tap Fee	\$24,518	\$29,553	\$29,553
Wastewater Tap Fee	\$8,589	\$4,500	\$6,500
Total	\$33,107	\$34,053	\$36,053

Table 25: Proposed Water Rates Design for 2015

Residential	Existing Rates		2015 Rates	
	Threshold (Kgal)	Rate	Threshold (Kgal)	Rate
Base	n/a	\$27.05	n/a	\$27.76
Tier 1	3	\$2.16	3	\$2.21
Tier 2	20	\$3.13	20	\$3.21
Tier 3	30	\$3.94	30	\$4.04
Tier 4	50	\$5.13	50	\$5.26
Tier 5	60	\$7.01	60	\$7.18
Tier 6	>60	\$14.07	>60	\$14.42



Commercial	Existing Rates		2015 Rates	
	1" Threshold (Kgal)	Rate	1" Threshold (Kgal)	Rate
Base	n/a	\$43.72	n/a	\$45.85
Tier 1 - 5 kgal	6	\$2.16	6	\$2.16
Tier 2 - 10 kgal	40	\$3.13	40	\$3.13
Tier 3 - 20 kgal	60	\$3.94	60	\$3.94
Tier 4 - >20 kgal	100	\$5.13	100	\$5.13
Tier 5 - n/a	>100	\$7.01	>100	\$7.01

	Existing Rates		2015 Rates	
	Base	Usage (Kgal)	Base	Usage (Kgal)
Large Irrigation	\$27.05	\$2.62	\$27.76	\$3.01
Pradera & CO GC	\$27.05	\$2.18	\$27.76	\$2.51
Pinery GC	\$27.05	\$2.42	\$27.76	\$2.76

MWH also presented a new rate structure for wastewater by using winter quarter average water consumption to estimate flow collected and treated by the District's wastewater system. By request from the Board, a flat charge per month per SFE was also calculated to recover the rate revenues needed for the wastewater system. These options are presented below.

Table 26: Proposed Wastewater Rate Design for 2015

	Existing Rates	Uniform Volume Rates	Flat Charge
Residential			
<3 kgal	\$27.84	\$6.35	\$39.68
>3 kgal	\$40.90	\$6.35	\$39.68
Volume per kgal	-	\$6.50	n/a
Commercial 1"			
Service Charge	\$84.08	\$12.66	\$111.70
Volume per kgal	\$4.27	\$6.50	n/a