

PAJARO VALLEY WATER MANAGEMENT AGENCY

PROPOSITION 218

SERVICE CHARGE REPORT

January 2015

FINAL

PAJARO VALLEY WATER MANAGEMENT AGENCY

Proposition 218 Service Charge Report

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Executive Summary

Purpose

This Proposition 218 Service Charge Report (“Report”) updates augmentation and delivered water charges for supplemental water and delivered water services provided by the Pajaro Valley Water Management Agency (“Agency”). When the current charges were adopted by the Board in 2010, the Board also decided to reevaluate the rates after 5 years to ensure that the Agency garnered public support of a Basin Management Plan to bring the groundwater basin into balance, to incorporate changes due to the update of the Agency Basin Management Plan, and to address other changes and changed circumstances.

With the completion of the BMP Update, approved in April 2014, the primary purpose of this cost-of-service analysis is to provide a rational basis for distributing the service costs (Administration, Operations, Metering, Planning, and Capital) to each customer class in proportion to the demands they place on the system and consistent with the cost of service and proportionality requirements of Article XIII D, Section 6 of the California Constitution (referred to in this Report as “Proposition 218”).

In addition, the Report provides the supporting documentation required by Proposition 218 and related legal provisions. The Report and analysis build off the Agency’s 2010 Service Charge Report and subsequent legal opinions and court decisions that provide a foundation for the augmentation and delivered water charges that fund the Agency’s services.

Background

The Agency is a state-chartered water management district, formed in 1984 by the Pajaro Valley Water Management Agency Act (“Agency Act”)¹ to efficiently and effectively manage existing and supplemental water supplies in the Pajaro Basin. Section 102 of the Agency Act sets forth the following water resource management objectives:

- a) Local groundwater resources should be managed toward the avoidance and eventual prevention of conditions of long-term overdraft, land subsidence, and water quality degradation.
- b) Local economies should be built and sustained on reliable, long-term supplies and not long-term overdraft as a source of water supply.
- c) Water management programs should include reasonable measures to prevent further increases in the amount of long-term overdraft and to accomplish continuing reduction in

¹ Stats. 1984, ch. 257, § 1 et seq., p. 798 et seq., Deering’s Wat.--Uncod. Acts (2008) Act 760, p. 681.

long-term overdraft, realizing that an immediate reduction in long-term overdraft may cause severe economic loss and hardship.

- d) Conservation and economically efficient management of water resources are necessary to meet the needs of agriculture, industry, and urban communities. Economic efficiency requires that water users pay their full proportionate share of the costs of developing and delivering water. Property taxes shall not be used for payment of these costs. Agricultural uses shall have priority over other uses under this act within the constraints of state law.
- e) Water conservation programs appropriately include the ability of a water management agency to recognize existing beneficial uses, and to acquire, buy, and transfer water and water rights in the furtherance of its purposes.
- f) The purpose of this Agency is to efficiently and economically manage existing and supplemental water supplies in order to prevent further increase in, and to accomplish continuing reduction of, long-term overdraft and to provide and insure sufficient water supplies for present and anticipated needs within the boundaries of the Agency.
- g) It is anticipated that long-term overdraft problems may not be solved unless supplemental water supplies are provided. The water management agency should, in an efficient and economically feasible manner, utilize supplemental water and available underground storage and should manage the groundwater supplies to meet the future needs of the basin.

Basin Management Plan

The Agency pursues its state law objectives, guided by a Basin Management Plan (BMP) and pursuant to California's AB 3030 Groundwater Management Act. Originally adopted in 1993, the BMP was revised in 2002 and updated in 2014 ("BMP Update"). The BMP Update was the product of a two-year process, advised by an Ad-Hoc BMP Committee consisting of three Agency representatives and 18 representatives of diverse customer and community interests. The Agency Board adopted the BMP Update in April 2014, following a two-year process to complete and certify an accompanying Environmental Impact Report as required by California law and administrative regulation. The BMP Update recommends the following projects and programs to supplement existing facilities and services:

- **Conservation:** reduce annual irrigation water use by 5,000 AFY by the end of 2023.
- **Increased Recycled Water Storage:** construct up to 2 million gallons of storage at the RWF to increase recycled water deliveries by approximately 750 AFY during the peak irrigation season.
- **Harkins Slough Recharge Facilities Upgrades:** install new shallow extraction wells at the Agency's recharge basin, upgrade the pump station, and filters at the slough diversion to improve system operation and recharge percolation rates, and construct a new recharge basin.

- **College Lake with Inland Pipeline to CDS:** during the summer months, send water from College Lake through a new pipeline to (a) the Recycled Water Facility (RWF) storage tank to supply the Coastal Distribution System (CDS) or (b) directly to the CDS, with provisions to supply inland users along the new water main pipeline. The water from College Lake can replace potable water currently used for blending and water from the Agency's blend wells in the coastal zone
- **Watsonville Slough with Recharge Basins:** divert water from the Watsonville Slough to surficial aquifers during winter high flows from December to May.
- **Murphy Crossing with Recharge Basins:** divert water from the Pajaro River between December and May to recharge the basin in the vicinity of Murphy Crossing.

Property-Related Services

The Agency's investments in integrated water infrastructure and associated water management programs are intended to protect and enhance the quantity and quality of groundwater resources in the Pajaro Basin by increasing supplemental water supply and water conservation and reducing groundwater pumping. With the completion of several water projects and the planned addition of projects described in the BMP Update, the Agency provides two types of water service:

1) supplemental water service; and 2) delivered water service. The supplemental water service is funded by the Agency augmentation charge and the delivered water service is funded by the Agency delivered water charge.

Supplemental Water Service

The Agency provides supplemental water service to groundwater users throughout the Pajaro Basin. Supplemental water services includes the purchase/acquisition, capture, storage, and distribution of supplemental water through existing facilities, as well as the implementation of projects identified in the Agency's updated BMP to reduce groundwater overdraft and retard seawater intrusion. Existing facilities include the Watsonville RWF, supplemental wells for blending, the Harkins Slough Project, and the CDS. These facilities, and the projects identified in the BMP Update, are intended to advance the following Agency objectives for the benefit of all groundwater users in the Basin.

- Protect and maintain the ability of property owners basin-wide to continue ongoing groundwater extraction;
- Secure the basin water supply;
- Retard seawater intrusion;
- Reduce overdraft;
- Promote water conservation; and,

- Avoid harsher and stricter groundwater pumping limits that could be imposed by the Agency, State Water Resource Control Board, or court adjudication and order, and thereby protect and preserve the ability of all groundwater pumpers throughout the groundwater basin to continue relying on groundwater resources without regulatory limits.

Supplemental water service includes (a) the design, construction, operation, maintenance, management, repair, replacement and improvement of the existing and planned projects and facilities and water meters, (b) ongoing debt service related to the design and construction of the projects and facilities, (c) groundwater modeling, water quality monitoring, water resources and groundwater basin planning and management, including periodic updates of the Agency's BMP, as appropriate to evaluate the effectiveness of the existing projects, determine improvements and enhancements, and identify future supplemental water projects that will further reduce groundwater overdraft and retard seawater intrusion, and (d) activities and actions to implement the groundwater management program as described in the BMP Update.

Delivered Water Service

In addition to the supplemental water services provided basin-wide, the Agency also provides delivered water supplies to property owners within the Delivered Water Zone ("DWZ"), which is served by the CDS. The delivered water is produced by Agency facilities that are constructed and operated to protect the groundwater basin from overdraft and seawater intrusion. Delivered water service includes the design, construction, operation, maintenance, management, repair and replacement of existing facilities, and other facilities identified in the BMP Update that provide irrigation water to delivered water service customers. Existing facilities include the Watsonville RWF, supplemental wells, the Harkins Slough Project, CDS, turnouts, turnout meters, and other facilities that provide for the delivery of water through the CDS at pressure appropriate for irrigation.

The DWZ delineates those water users who are able to receive delivered water directly from the Agency (*Figure ES-1*). The delivery and use of delivered water in the DWZ improves the amount and quality of the groundwater underlying the properties in the DWZ. Because of this, properties in the DWZ will be subject to a higher augmentation charge to reflect the higher level of services provided through the immediate availability of delivered water and the improved underlying groundwater.

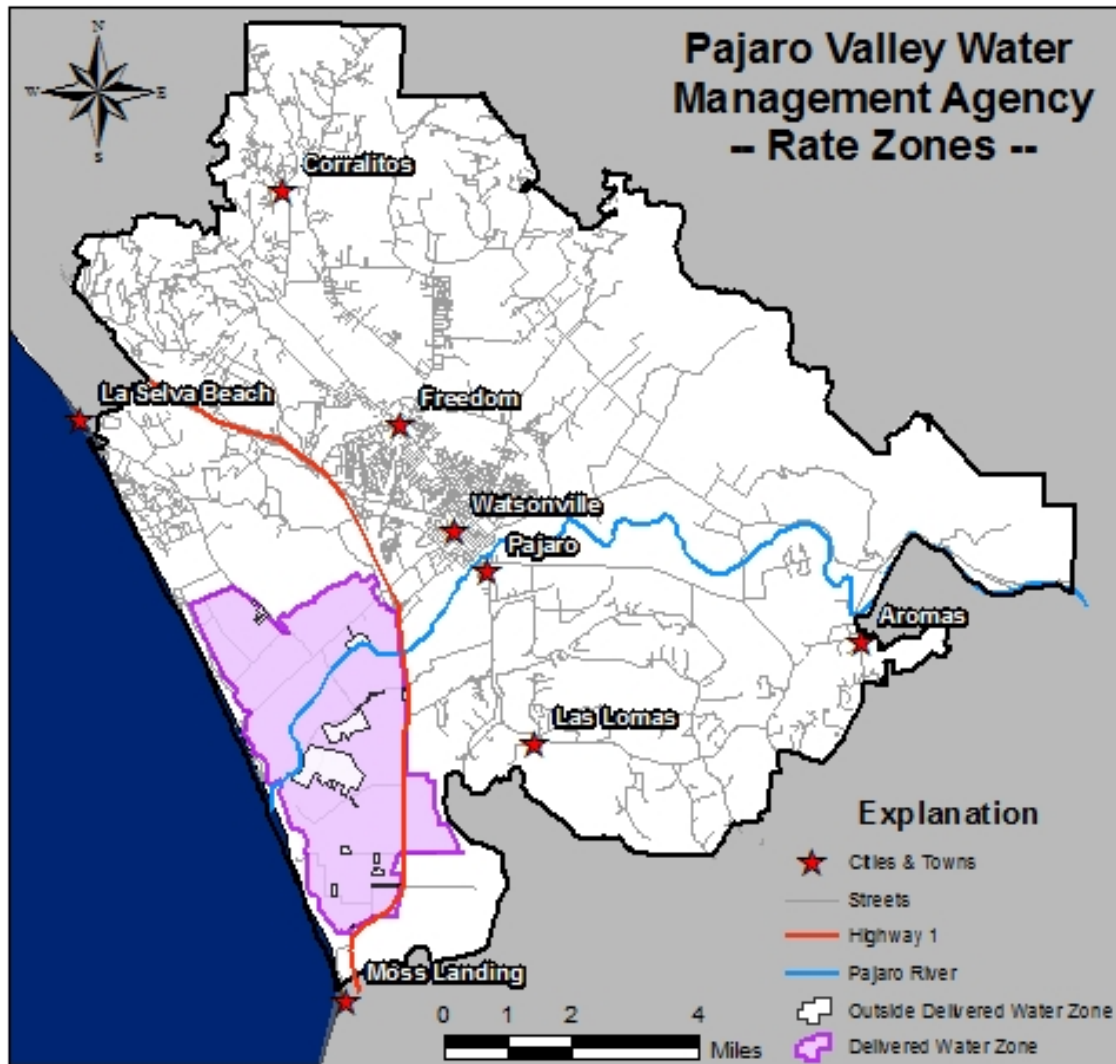


Figure ES-1 Agency Rate Zones

Water User Categories

The Agency recovers the capital, operating and other costs of providing supplemental and delivered water services by imposing service charges on users and beneficiaries based on the following user categories:

1. **Metered Water Users - Inside the DWZ.** Includes owners of municipal, industrial, agricultural, and other wells with meters located within the DWZ. These owners and their tenants have turnouts to the CDS and access to the Agency's supplemental water supply. Well owners and delivered water users in this category are subject to an augmentation charge and delivered water charge.

2. **Metered Water Users - Outside the DWZ.** Includes owners of municipal, industrial, agricultural and other wells with meters located outside of the DWZ. Water consumption² by all municipal water users is metered. Water users in this category are subject to an augmentation charge.
3. **Delivered Water Users.** Includes property owners and tenants located within the DWZ who receive recycled water produced at the Watsonville RWF, blended with well water and Harkins Slough water, and distributed through the CDS. All consumption of delivered water is metered. Water users in this category are subject to a delivered water charge.
4. **Unmetered Water Users.** Includes owners of rural residential water wells without meters. Water users in this category are subject to an augmentation charge. Rural water users that are not metered are currently billed based on an estimated use of 0.59 AF of groundwater per residence served per year. Larger residential wells, producing at least 10 AF per year or more, and wells serving 15 or more connections, are metered and are charged for their consumption as metered water users.

Table ES-1 presents the forecasted average consumption and account data for all of the Agency's water customers for the 10-year service period from FY 2016 to FY 2025. This 10-year Service Charge Study forecasts consumption, accounting for water demand trends, as well as the shift in consumption in the DWZ from groundwater extraction to delivered water usage. This timeframe also aligns with the proposed implementation of the Phase 1 BMP projects and conservation program.

Table ES-1 Forecasted Average 10-Year Consumption and Account Data Proposition 218 Service Charge Report Pajaro Valley Water Management Agency				
	Outside DWZ		Inside DWZ	
	Consumption (AF/year)	Number of Accounts	Consumption (AF/year)	Number of Accounts
Metered Water Users ⁽¹⁾	42,170	824	4,010	79
Unmetered Water Users ⁽¹⁾	910	1,113	---	---
Delivered Water Users	---	---	6,000	59
Total	43,080	1,957	10,010	138
Notes:				
(1) Excludes water users, located east of the San Andreas Fault, who are not hydrologically connected to the Pajaro Basin.				

² This report uses "consumption" to refer to both water extracted by groundwater wells (for purposes of the augmentation charge) as well as Agency recycled water delivered to customers from the CDS (for purposes of the delivered water charge).

Summary of Rate-Setting Process

The Agency's rate-setting process is designed to produce sufficient revenue to pay for current and projected service costs over the next five fiscal years, from FY 2015/16 through FY 2019/20, and do so in a manner that satisfies Proposition 218, Article X(2) of the California Constitution, the Agency Act and related legal requirements.

In California, water rates must adhere to the cost of service requirements imposed by Proposition 218 of the State Constitution. Proposition 218 requires that property-related fees and charges, including water and wastewater rates, do not exceed the proportional cost of providing the service. Article X (2) of the State Constitution establishes the need to preserve the State's water supplies and discourages the wasteful or unreasonable use of water by encouraging conservation.

The cost of service allocations and corresponding rates in this Report were developed using guidelines set forth in the Agency Act, the Agency's 2010 Service Charge Report, and detailed information provided by the Agency. In addition to Articles X(2) and XIII D of the California Constitution, the rates presented in this report adhere to industry standards for utility rate setting established by the American Water Works Association (AWWA) M1 Manual of Principles of Water Rates, Fees, and Charges.

As with the 2010 rate-setting process, the Agency convened an Ad-Hoc Funding Committee ("AHFC") to help inform and guide the development of the 2014 rate-setting process. The fifteen member committee (see Table 5-1) composed of a Pajaro Valley Stakeholders focused primarily on rate design methodology, rate payer impacts, and other key issues. Following fourteen meetings to complete its review of rate alternatives, the AHFC concluded its work with four recommendations. These are as follows:

1. Continue using the Agency's existing uniform rate structure for the 2015 rate setting process.
2. Advise the Agency Board that within 18 months the Agency shall have a formal plan, including staff allocation, such that next time a committee is formed to assess rates, technical questions regarding tiered rates can be addressed.
3. While revenue adjustments are necessary to continue operations and funding of the BMP, rates increases should be minimized and smoothed over the proposed 5-year period of rate increases.
4. Carefully evaluate the proper costs allocation to the augmentation charge inside the DWZ consistent with the levels of service in the different user classes.

Figure ES-2 illustrates the Agency's methodology for conducting a cost of service study and rate-setting process that meets these requirements:

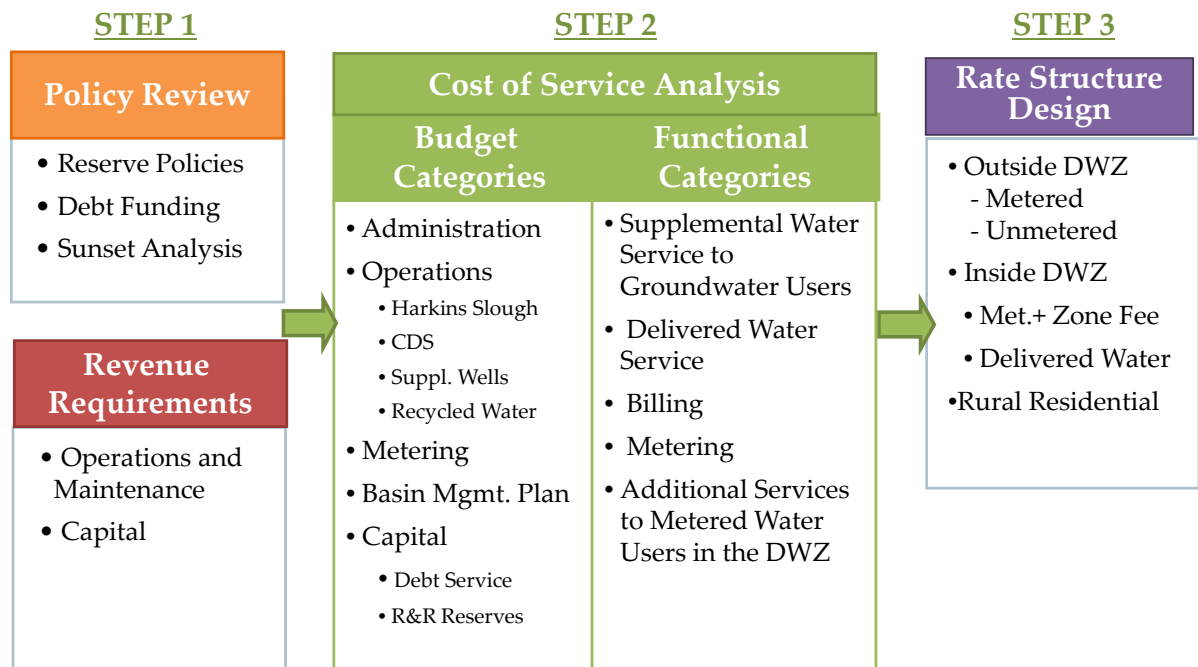


Figure ES-2 Cost of Service Rate Development Methodology

At the heart of the methodology is a functional cost analysis that allocates capital, operating and maintenance costs (“revenue requirements”) of providing Agency services to functional cost categories that reflect the different service levels attributable to the water user groups (i.e., metered, unmetered, and delivered water). The Agency identified the following five functional cost categories for this Report:

1. Supplemental water service to groundwater users,
2. Delivered water service,
3. Billing,
4. Metering, and
5. Additional services to metered water users in the DWZ.

The purpose of identifying the specific functions is to provide a rational basis for distributing the costs of augmentation and delivered water services to each customer class in proportion to the types and levels of services received and the demands they make on these services.

Revenue Requirements

The Agency built its five-year service charge analysis through development of a 10-year financial plan. The financial plan used the FY 2014/15 preliminary budget as a baseline for projecting revenue requirements. The projections reflect inflationary factors as well as anticipated changes in

staffing and operations. The Agency budget includes expenses associated with general Agency management as well as those associated with supplemental water and delivered water services.

Table ES-2 summarizes the revenues, expenditures, and forecasted cash flows for the five-year period from FY 2015/16 through FY 2019/20. As presented, the projected revenue before increases produces cash flow deficiencies throughout the study period unable to fully fund operations. With the proposed revenue increase, the Agency is able to fully fund operations. However, the cash flows are not sufficient to fully fund rate-funded capital expenditures. Rather than funding these expenditures solely through increasing rates, the Agency, in consultation with its Ad-Hoc Funding Committee, proposed to fund a portion of capital expenditures through a combination of reductions in Agency cash reserves and a 5% annual increase in rate revenues. Given the existing levels of available reserves, this approach minimizes the need to increase rates without putting the Agency in financial hardship. Specifically, existing reserves are forecasted to fund the BMP projects ELA costs (engineering, legal, and acquisition costs). Debt is expected to fund the BMP construction costs.

Table ES-2 Revenues Requirements for FY 2015/16 through FY 2019/20 Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues					
Rate Revenues (prior to rate increases)	\$10,999,072	\$10,889,603	\$10,775,684	\$10,633,319	\$10,471,769
Management Fees	383,206	383,206	383,206	383,206	383,206
Other Revenues	110,543	113,140	115,208	117,324	118,584
Total Revenues	\$11,492,821	\$11,385,949	\$11,274,098	\$11,133,849	\$10,973,559
Expenditures					
Personnel	\$1,841,689	\$2,025,689	\$2,219,072	\$2,285,645	\$2,354,214
Maintenance & Equipment	4,720,653	4,911,870	5,060,547	5,213,931	5,372,175
Debt Service	4,334,521	4,563,521	5,069,462	5,069,462	5,069,462
Additional BMP O&M	73,763	77,138	187,449	194,353	201,529
Total Operating Expenditures	\$10,970,626	\$11,578,218	\$12,536,531	\$12,763,392	\$12,997,381
Annual Rate Increases					
Cash Flow (Before Rate Increases)	\$522,195	(\$192,269)	(\$1,262,432)	(\$1,629,542)	(\$2,023,822)
Recommended Revenue Increase	6%	6%	6%	6%	6%
Revenue from Increase	660,403	1,346,826	2,066,306	2,844,607	3,672,636
Cash Flow (After Rate Increases)	1,182,598	1,154,557	803,873	1,215,065	1,648,815
Less Rate Funded Capital Projects	(\$2,495,725)	(\$1,936,578)	(\$1,936,578)	(\$1,936,578)	(\$1,936,578)
Amount to be Reserve Funded ¹	(\$1,313,127)	(\$782,021)	(\$1,132,705)	(\$721,513)	(\$287,763)
1. Although cash flows are sufficient to cover operations, it is forecasted that the Agency will use available reserves to fund forecasted rate-funded capital. The AHFC recommended the use of reserves as it minimizes the need for additional or larger revenue increases.					

Rates and Charges

Table ES-3 summarizes the current and projected cost of service rates, and the resulting percentage changes for the Agency's augmentation and delivered water charges. The proposed FY 2015/16 rates represent the first of five proposed annual adjustments to partially recover the Agency's anticipated revenue requirements through FY 2019/20. As illustrated in Table ES-3, the proposed rate increases will fully fund operating and maintenance costs and debt service obligations during the next five fiscal years. Additionally, some annual revenues will be used along with the Agency's cash reserves to fund projected capital expenditures during this period.

Table ES-3 Proposed FY 2015/16 Rate Adjustments Proposition 218 Service Charge Report Pajaro Valley Water Management Agency			
User Group	FY 2014/15 Rate (\$/AF)	FY 2015/16 Rate ^{1,2} (\$/AF)	5-yr Avg Increase (FY 2016-2020) ^{3,5,6}
Augmentation Charge, Metered Users - Outside DWZ	\$179	\$191	6.6%
Augmentation Charge, Metered Users - Inside DWZ	\$215	235	9.5%
Augmentation Charge, Unmetered ⁴ (Rural Residential)	\$172	183	6.0%
Delivered Water Charge	\$338	348	3.0%
Notes: (1) Rate to be implemented July 1, 2015. Calculated cost of service rates are similar to those previously enacted by the Agency in 2010. (2) Cost of service rates presented above includes a forecasted 1% annual conservation. (3) Average increase over the forecasted 5-year period (FY 2016 to FY 2020). Specific increases may vary slightly year to year due to rounding. (4) Unmetered water users are to be charged based on an updated estimated consumption of 0.5 AF for each parcel connected to an unmetered well. (5) The aggregate increase in rates is 6% in order to generate the 5% increase in revenues set by the Agency to balance revenue requirements, resources, and drawdown of cash reserves. (6) Rates calculations are based on a planned conservation improvement of 500 AF annually, benchmarked from FY 2014/15 usage.			

Introduction & Background

Purpose

The purpose of this cost of service study is to establish rates for supplemental and delivered water services that adequately fund Agency operations, maintenance, capital, and ongoing basin management planning needs; equitably recover service costs from users; and conform to all constitutional and legal requirements for water rate setting. The constitutional and legal requirements are of particular concern given the recent history of legal challenges brought against the Agency. While time consuming and costly, the legal challenges have helped clarify the conditions for successfully setting fair and lawful rates, and helped focus Agency and stakeholder attention on the core requirements of the rate-setting process.

Specifically, Proposition 218 (Cal. Const., Article XIII D, Sec. 6) requires existing, new, or increased fees and charges to comply with the following requirements:

1. Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
2. Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
3. The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of service attributable to the parcel.
4. No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question.
5. No fee or charge may be imposed for general governmental services.

Cost of Service and Rate Development Methodology

The Agency addressed each Proposition 218 requirement by employing a cost of service and rate development methodology based on principles established by the American Water Works Association, and commonly used by municipal water utilities throughout California and the United States. Figure 1-1 presents a summary of the cost of service rate development methodology.

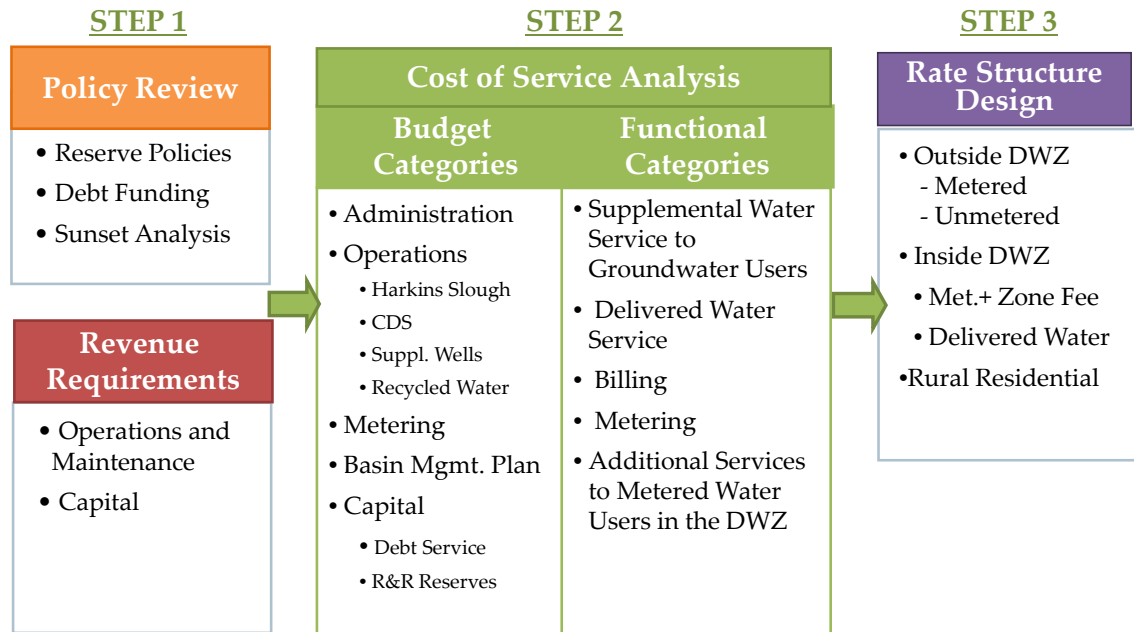


Figure 1-1 Cost of Service Rate Development Methodology

Background

The Agency is a state-chartered water management district formed in 1984 to efficiently and effectively manage existing and supplemental water supplies in the Pajaro Basin. The Basin is located along the Central California coast and runs from the Coastal Range to Monterey Bay. Figure 1-2 presents an Agency boundary map as well as the communities located in the Pajaro Valley.

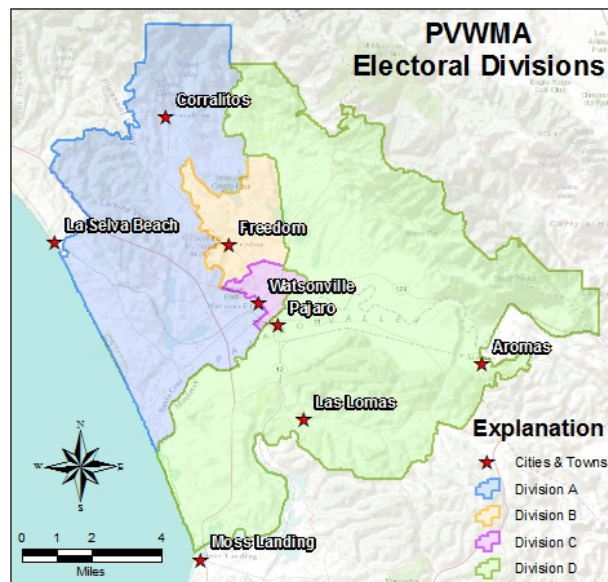


Figure 1-2 Pajaro Valley Water Management Agency's Service Area

Approximately 80 percent of the Pajaro Basin groundwater is used for agricultural production. Historic groundwater use has led to serious overdraft conditions in the Pajaro Basin. Overdraft depletes the groundwater supply by extracting more water than is replenished or recharged. The continued overdraft has resulted in seawater intrusion. As groundwater is drawn below sea level, seawater flows into the aquifer rendering the groundwater too saline for agricultural or domestic use.

Over the past five years, the total water consumption in the Pajaro Basin has averaged approximately 55,500 acre-feet (AF). As shown in the *Figure 1-3*, water demands are volatile and reveal a close correlation with rainfall. In addition, following completion of the Watsonville RWF in 2009, continued increases in delivered water deliveries have been achieved.

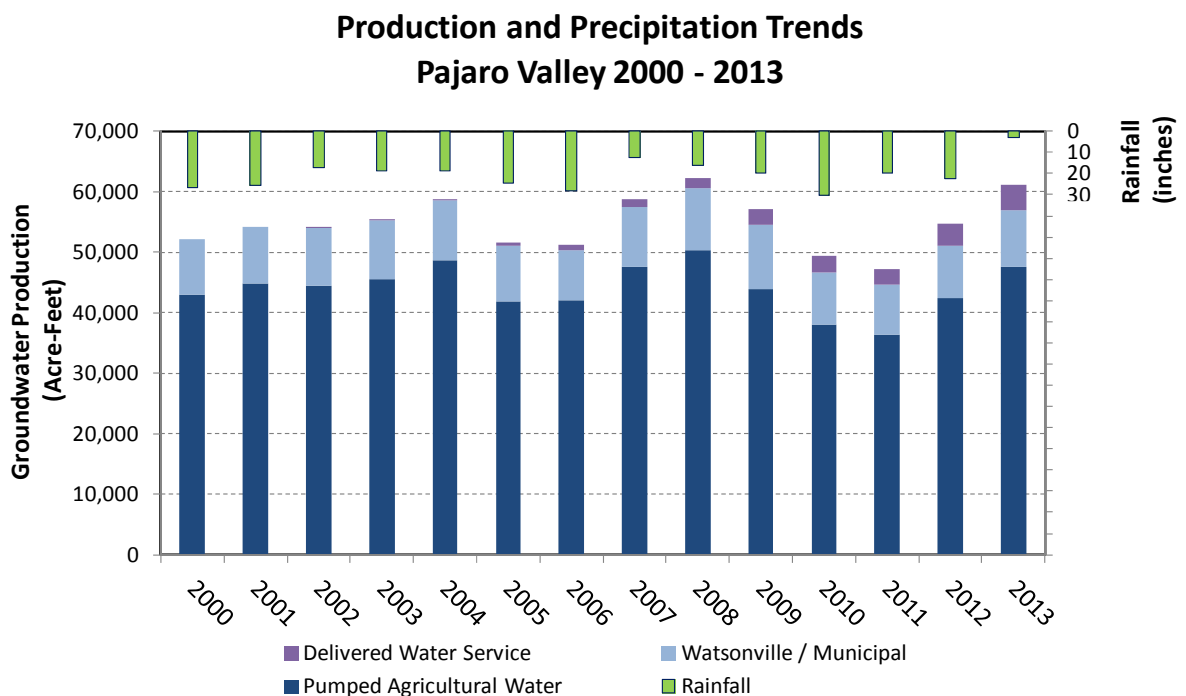


Figure 1-3 Pajaro Valley Water Consumption and Precipitation Trends

The Agency's Act³, adopted in 1983, recognizes the significant economic, social, and environmental impacts caused by groundwater overdraft and charges the Agency to "prevent further increase in, and to accomplish continuing reduction of, long-term overdraft and to provide and insure sufficient water supplies for present and anticipated needs within the boundaries of the Agency."

³ Stats. 1984, ch. 257, § 1 et seq., p. 798 et seq., Deering's Wat.--Uncod. Acts (2008) Act 760, p. 681.

The Act establishes the following objectives for advancing this mission:

1. Manage local groundwater resources to avoid and prevent long-term overdraft, land subsidence, and water quality degradation.
2. Build and sustain local economies by providing a reliable long-term water supply that does not depend on overdraft.
3. Prevent further increases in the amount of long-term overdraft realizing that an immediate reduction in long-term overdraft may cause severe economic loss and hardship.
4. Meet the needs of agriculture, industry, and urban communities with conservation and economic efficiency and require that water users pay their full proportionate share of the costs of developing and delivering water.
5. Promote water conservation programs appropriately and acquire, buy, and transfer water and water rights in the furtherance of its purposes.

If the recent and past levels of groundwater pumping continue unimpeded and without supplemental water or other controls or restrictions, then seawater will continue to move landward and overdraft conditions will worsen. Agency modeling shows that, in this scenario, intruding seawater eventually will adversely affect the water quality throughout much of the groundwater basin. Agency studies have shown that the most effective way to address this problem is to replace groundwater pumping near the coast with supplemental water deliveries in order to raise the groundwater level in that area and thereby limit further seawater intrusion by creating a hydrostatic barrier along the coast. Accordingly, the Agency has determined that coastal groundwater pumping reductions are more effective at preventing seawater intrusion and improving the sustainable yield of the entire basin than are basin-wide pumping reductions. The supplemental water program therefore has focused on delivering supplemental water near the coast. Delivering water at this location enables the coastal pumpers to utilize the supplemental water and reduce groundwater pumping, develops the hydrostatic barrier, enhances groundwater recharge along the coast, and maximizes the basin-wide protection of groundwater supply and quality. Additional planned water projects discussed below will focus on overall groundwater basin recharge.

The Agency has the authority to control overdraft by adopting an ordinance to regulate and limit groundwater pumping and/or commence a groundwater rights adjudication to regulate and limit pumping (Agency Act §§ 711, 1106.) The Agency has decided not to pursue these actions at this time in favor of programs and supplemental water projects authorized by its BMP. The success of the BMP depends on the ability of the Agency to adequately fund long-term investments in supplemental water projects, water management infrastructure, utility operations and maintenance, planning and monitoring activities, and water management and conservation programs.

Recent levels of consumption have resulted in groundwater levels below sea level across much of the basin. Table 1-1 summarizes the historical overdraft and the estimated consumption for agricultural and non-agricultural water uses for the ensuing year. As shown in the table, the Pajaro Basin overdraft is expected to continue.

Table 1-1 Historical and Estimated Groundwater Use in the Pajaro Basin Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Estimated annual overdraft ¹ for the current water year ²	33,870 AF
Estimated annual overdraft for the ensuing water year	30,000 AF
Average annual overdraft for the immediate past 10 water years	20,400 AF
Estimated accumulated overdraft ³ as of the last day of the preceding water year (estimated since 1964)	632,440 AF
Estimated accumulated overdraft as of the last day of the current water year (estimated since 1964)	666,310 AF
Total production of water from groundwater supplies for the preceding water year	58,870 AF
Estimated amount of agricultural water to be withdrawn for the ensuing water year	50,000 AF
Amount of non-agricultural water to be drawn for the ensuing water year	8,900 AF
Estimated amount of water necessary for surface distribution for the ensuing water year	7,100 AF/year
Amount of water necessary for the replenishment of the ground water supplies	18,100 AF/year
Amount of water the district is obligated by contract to purchase	0 AF
Notes: (1) Defined as the amount by which the production of water from groundwater exceeds the natural replenishment of the groundwater supplies in the water year. The Pajaro Valley Hydrologic Model report (Hanson et al, 2014) provides estimates of long-term average annual overdraft (12,500 AF over the period 1964 - 2009), as well as a range of groundwater inflows and outflows. Model data were used in conjunction with measured production to populate the table. The values are estimates and subject to change pending further improvements to the understanding of the hydrologic system. All values were rounded to the nearest ten acre-feet. (2) Defined as October 1 of one calendar year to September 30 of the following calendar year. (3) Defined as the total amount of water necessary to be replaced in the intake areas of the groundwater basin to prevent the landward movement of salt water into the fresh groundwater.	

Historical Rates and Legal Challenges

The delivered water charge and augmentation charge were last adjusted in 2010, utilizing Proposition 218 procedures and standards. Working with the Agency and a previous Ad Hoc Funding Committee, Carollo assisted the Agency through a multi-phase rate setting process to develop updated and compliant charges. Based on identified property characteristics, augmentation charges were divided into three charges: 1) metered wells; 2) unmetered wells, and 3) wells in the DWZ. Also, the Agency adopted a separate rate for delivered water service.

Prior to the adoption of the 2010 rate structure, the Agency mailed hearing notices to affected property owners inviting public testimony and providing an opportunity to protest the proposed charges in accordance with Proposition 218 requirements. The proposed charges did not receive a majority protest. In addition, the Agency conducted an all-mail election on the augmentation charge, mailing ballots to property owners subject to the proposed charge. The Agency weighted the votes it received according to each property owner's anticipated financial obligation as measured by average groundwater use over the preceding five years. Based on this weighted voting method, the augmentation charge was approved.

Challengers filed a lawsuit against the Agency, challenging both procedural and substantive aspects of the augmentation charge rate structure, in 2010. In October 2013, the California Sixth District Court of Appeal returned a decision that contained the following findings in favor of the Agency and its rate structure based on a review of the Agency Act Proposition 218:

1. The water service provided by the Agency is a service that is immediately available to all properties within the Pajaro Basin;
2. Augmentation charge revenue may pay for Agency activities required to prepare or implement the groundwater BMP for the common benefit of all users in the Pajaro Basin;
3. The Agency's supplemental water service is a type of water service and therefore not subject to voter approval;
4. The Agency did not need to give public notification to tenants who may be potentially liable for paying the augmentation charge;
5. The cost of service analysis and rate-setting methodology did not include unauthorized revenue requirements, the resulting service charges were not excessive given the provision of services, and the Agency was not using the resulting rate revenue for unlawful purposes;
6. Payment of debt service, administrative and overhead costs are appropriate costs of the water service funded by the augmentation charge; and
7. The Agency's user class augmentation charge rate analysis is consistent with Prop. 218.

These court findings establish a clear and unambiguous legal foundation for the Agency's current rate structure and a legal roadmap for the Agency's current efforts to update its charges for supplemental water and delivered water services. This Report follows and builds on the 2010 report that was reviewed and upheld by the court.

Agency Property-Related Services

The Agency pursues its Agency Act objectives, guided by a BMP and California's AB 3030 Groundwater Management Act. Originally adopted in 1993, the BMP was revised and updated in 2002 and 2014 respectively. The Agency has constructed several facilities to acquire, capture, store, and distribute supplemental water in the region, consistent with the objectives of the Agency Act. Section 316 of the Act defines supplemental water to include imported surface and groundwater, conserved floodwaters, and recycled water. The following major supplemental water facilities have been completed to date:⁴

- **Coastal Distribution System:** The CDS consists of approximately 20 miles of pipeline used to deliver supplemental water supplies, including recycled water and stored water from the Harkins Slough Recharge Facilities (described below), to farms in coastal southern Santa Cruz and northern Monterey Counties. Water delivered through the CDS replaces groundwater that would otherwise be pumped from coastal wells, which reduces seawater intrusion. In this sense, delivered water provides in lieu recharge to the aquifers.
- **Recycled Water Facility:** The Agency partnered with the City of Watsonville to build a RWF that can deliver up to 4,000 AF per year of tertiary treated disinfected, recycled water through the CDS during the irrigation season to DWZ users. The plant came online in 2009. In 2013, the plant provided 2,950 AF of recycled water the CDS. This recycled water was mixed with approximately 1,300 AF of blend water from the City of Watsonville potable system, from recovered Harkins Slough water, and from blend water wells operated by the Agency.⁵

While the delivered water does not eliminate the basin overdraft, it provides more than 20 percent of the required supplemental supplies to balance the basin. Use of delivered water in the DWZ, decreases groundwater pumping near the coast, which retards seawater

⁴ These projects are described in more detail in the 2002 Basin Management Plan and BMP Update.

⁵ The RWF produces recycled water with chloride and sodium concentrations above the desired agronomic objective. In order to reduce these constituents to improve the quality of delivered water for irrigation purposes, the recycled water must be blended with higher-quality (lower salinity) water. Therefore, the recycled water project includes the construction, operation, and maintenance of wells that provide lower salinity water to blend with the recycled water. The wells are an essential component of the recycled water project.

intrusion, protects the groundwater quality, and improves the entire groundwater basin by reducing overdraft.

- **Harkins Slough Recharge Facilities:** The Harkins Slough Recharge Facilities seasonally store wet weather flows from Harkins Slough in the shallow aquifers of the San Andreas Terrace, located near the coast. Stored water is pumped from a series of wells and delivered to coastal farms through the CDS. In its first 12 years of operation, between 2002 and 2013, the facility recharged 7,000 AF of diverted Harkins Slough water, roughly 2,200 AF of which was recovered for delivery and use by coastal farms; the balance was left in storage. In 2013, the Harkins Slough Recharge Facilities delivered approximately 220 AF of water to the CDS. Operation of the Harkins Slough project with the other Agency supplemental water projects helps reduce overdraft. Like the recycled water project, the Harkins Slough project improves and protects the overall basin groundwater supply and quality.

In 2010, the Agency started work on an update to the 2002 BMP. The two-year process was advised by an Ad Hoc BMP Committee consisting of three Agency representatives and 18 representatives of diverse customer and community interests. The Agency Board adopted the BMP Update in April 2014, following an additional two-year process to complete and certify an accompanying Environmental Impact Report as required by California law and administrative rule. The BMP Update recommends the following projects and programs to supplement existing facilities and services, which the Agency plans to implement with funding from the adjusted delivered water charge and augmentation charge:⁶

- **Conservation:** The water conservation program and tasks are described in Chapter 6 and Appendix A of the BMP Update. The program objective is to reduce annual irrigation water use by 5,000 AFY by the end of 2023.
- **Increased Recycled Water Storage:** The Watsonville RWF was completed in 2009. Expanded use of the available recycled water (which offsets groundwater overdraft and helps to retard seawater intrusion) requires storage. This project includes the construction and operation of a 1.5 million gallon storage tank at the RWF to increase recycled water deliveries by approximately 1,000 AFY by enabling the Agency to store the recycled water produced during the night for delivery during peak irrigation hours.
- **Harkins Slough Recharge Facilities Upgrades:** As explained above, the Harkins Slough Project is part of the existing supplemental water system improvements. This upgrade project would include the installation, construction and operation of new shallow extraction wells at the Agency's recharge basin, upgraded pump station and filters at the slough diversion to improve system operation and recharge percolation rates, and a new

⁶ These projects are described in more detail in the BMP Update.

recharge basin, which will increase and maximize the diversions from the slough, infiltration of diverted water, and water extracted from the recovery wells.

- **College Lake with Inland Pipeline to CDS:** College Lake is an existing lake located northeast of Watsonville. This project includes the diversion, storage, and use of water from the lake including the construction and operation of a new outlet weir that would raise the lake level and a new water main pipeline. During the summer months, water from College Lake would be sent through the new pipeline to (a) the RWF storage tank to supply the CDS or (b) directly to the CDS, with provisions to supply inland users along the new water main pipeline.
- **Watsonville Slough with Recharge Basins:** divert water from the Watsonville Slough to surficial aquifers during winter high flows from December to May. The project includes the construction and operation of a diversion, pump stations, filtration facility, recovery wells, and connecting pipelines. Water would be extracted from the recovery wells during the irrigation season.
- **Murphy Crossing with Recharge Basins:** divert water from the Pajaro River between December and May to recharge the basin in the vicinity of Murphy Crossing. The project includes the construction and operation of a diversion, pump station, monitoring wells, recharge basins, and a connector pipeline from the pump station to the recharge basins. The project is for groundwater recharge only (i.e., no associated recovery wells are contemplated at this time).

The list of projects in the BMP Update reflects the underlying objectives of the Agency to pursue efficient and effective solutions to groundwater overdraft and saltwater intrusion in the Pajaro Basin. The Agency's planning process was informed by monitoring and modeling of the groundwater system, weather and rain patterns, and water consumption by system users basin-wide. The results of this evidence-based approach showed that the Agency could increase groundwater levels basin-wide, better control seawater intrusion, improve management and quality of the groundwater basin, and protect the groundwater supply of the basin by focusing on water infrastructure improvements that target supplemental water deliveries to replace groundwater pumping near the coast.

The BMP Update includes a project phasing plan. Each of the new projects described above is included in Phase 1 (scheduled for implementation between 2014 and 2024), except for the Murphy Crossing with Recharge Basins, which is a Phase 2 project (scheduled for implementation between 2024-2034). The adjusted delivered water and augmentation charges described and calculated in this report include capital funding for the Phase 1 BMP Update projects only. Additional increases beyond the proposed 5-year window will be required to fully fund Phase 1 projects.

Management of the Single Basin Provides Collective Service

The Agency's investments in integrated water infrastructure and associated water planning and management programs have increased and will continue to increase the supplemental water supply and water conservation in the Pajaro Basin to protect and enhance the quantity and quality of its groundwater resources. To these ends, the Agency provides two property-related water services: 1) supplemental water service and 2) delivered water service. The supplemental water service is funded by the Agency augmentation charge and the delivered water service is funded by the Agency delivered water charge. The services are described in more detail below:

Supplemental Water Service

The supplemental water service to groundwater users consists of (a) the purchase/acquisition, capture, storage and distribution of supplemental water through the Watsonville RWF, Harkins Slough Project, supplemental well projects, and CDS; (b) the planning, design, financing, construction, operation and maintenance, repair, replacement, improvement and debt service associated with existing and new supplemental water projects and facilities; (c) groundwater basin management, monitoring and planning to identify and determine the performance and effectiveness of existing supplemental water projects, improvements and enhancements to existing projects, and future supplemental water projects to reduce groundwater overdraft and retard seawater intrusion; and (d) other activities and actions to implement the Agency groundwater management program as described in the BMP Update.

Section 1001 of the Agency Act authorizes the levy of an augmentation charge to pay for the comprehensive activities, programs, and projects that comprise its supplemental water service, and that are required to prepare and implement the groundwater management program. The costs of the supplemental water service include expenses associated with the (a) design, construction, operation, maintenance, management, repair, replacement and improvement of the existing and planned projects and facilities and water meters; (b) ongoing debt service related to the design and construction of the facilities; (c) groundwater modeling, water quality monitoring, and water resources and groundwater basin planning and management, including the periodic update of the Agency BMP; and (d) any other expenditures relating to the provision of the Agency's supplemental water service and that are required to implement the groundwater management program.

The Agency provides the supplemental water service to owners of groundwater wells in order to further the following objectives and purposes:

- Protect and maintain the ability of property owners to continue ongoing groundwater extraction;
- Secure the basin water supply;
- Replace groundwater pumped by extractors;

- Retard seawater intrusion;
- Reduce overdraft;
- Promote water conservation; and,
- Avoid harsher and stricter groundwater pumping limits imposed by the Agency, State Water Resources Control Board, or court adjudication and order, and thereby protect and preserve the ability of all groundwater pumpers throughout the groundwater basin to continue relying on groundwater resources without regulatory limits.

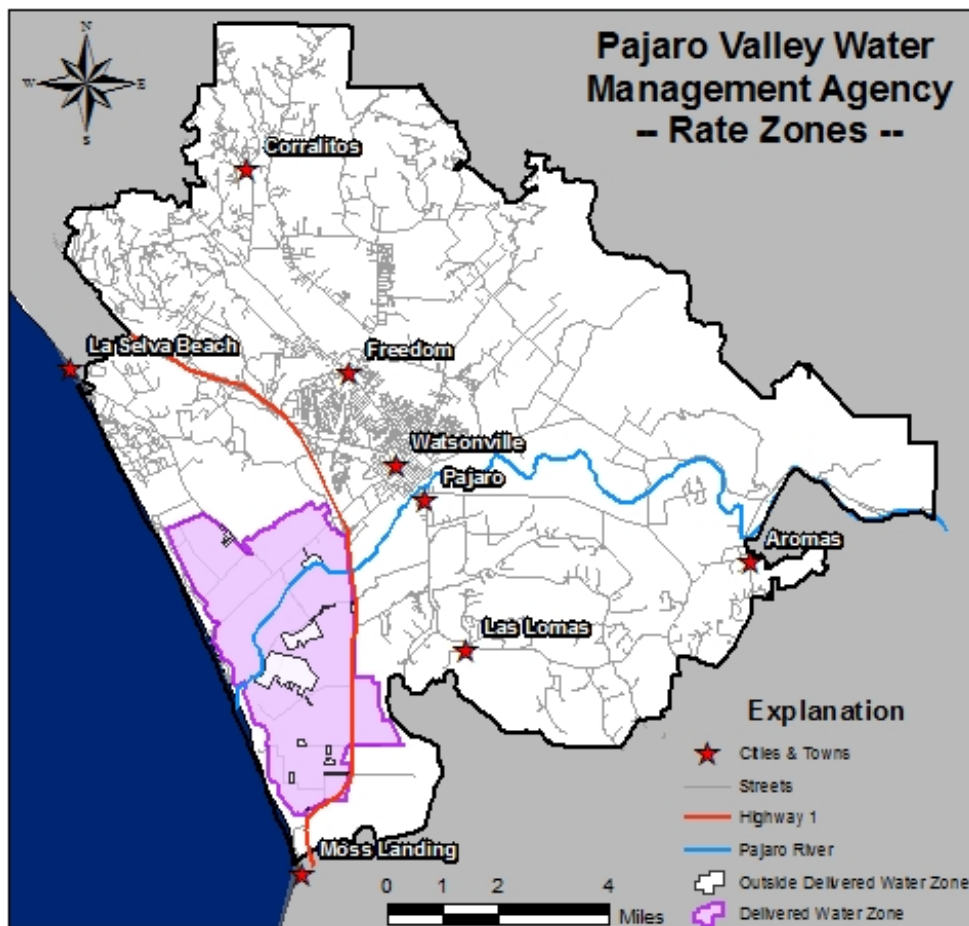


Figure 1-4 - Supplemental Water Service to Groundwater Users

The service includes basin management planning and monitoring activities. These activities support an evidence-based approach to Agency decisions to purchase/acquire, capture, store, and distribute supplemental water. The periodic review and update of the BMP is an essential part of the Agency's mission to provide efficient and effective services while restoring the health of the groundwater basin. Monitoring of the groundwater conditions provides a better understanding of the scope and location of the supplemental water needs in order to improve and expand the supplemental water service.

The supplemental water service to groundwater users includes water quality monitoring at the RWF and within the groundwater basin. RWF is regulated by the Regional Water Quality Control Board ("Regional Board"). The Regional Board's permit for the facility imposes a water quality-monitoring requirement on the Agency. The groundwater monitoring is essential for regulatory compliance, evaluating the impact and performance of the supplemental water projects, and identifying seawater-intruded areas. The monitoring is a necessary part of the supplemental water service.

The supplemental water service includes the Agency's metering program. The supplemental water service is funded primarily through a groundwater augmentation charge pursuant to Agency Act Section 1001. The augmentation charge is a charge levied on the extraction of groundwater from extraction facilities (wells) within the Agency. In order to administer the charge, it is necessary for the Agency to know the actual or reasonable estimate of groundwater extraction from each well. The Agency installs meters on all wells capable of extracting 10 AF or more per year. Installing, maintaining, operating, repairing and reading meters are all services provided through the metering program.

There are four well types in the Agency: (1) municipal wells operated by retail water providers; (2) agricultural wells; (3) industrial wells, and (4) small wells that serve rural residential parcels that are not connected to a public or community water system. The municipal, agricultural, and industrial wells account for approximately 87 percent of the total basin water use. The approximately 1,100 wells serving the rural residential parcels account for 2 percent of the water use, and the remaining 11 percent is consumed by delivered water users. The supplemental water service includes the reading, operation, maintenance, and repair of well meters. For the numerous rural residential wells, with the relatively small quantity of groundwater extraction, the Agency determined that it would not be cost-effective for the Agency or the landowners to install, read, operate, maintain, and repair the approximate 1,100 meters that would be required. The Agency administers the augmentation charge for the rural residential well owners based on a reasonable estimate of extraction. For any rural residential well owner who prefers to be billed on actual usage, the Agency authorizes the installation of a meter at the well owner's expense.

Delivered Water Service

Delivered Water Service comprises the delivery of alternate water supplies to the DWZ. The water is produced by the Agency projects constructed and operated to protect the groundwater basin from overdraft and seawater intrusion. The delivered water service includes the design, construction, operation, maintenance, management, repair, replacement and improvement of the Watsonville RWF (including the supplement wells), Harkins Slough Recharge Facilities, CDS, turnouts, turnout meters, and other facilities that provide irrigation water to the Agency-delivered water service customers. The operation includes facilities that provide for the delivery of the water supply at pressure appropriate for agricultural irrigation.

Similar to the supplemental water service, the delivered water service includes basin management planning activities required to effectively manage the water supplies in the Pajaro Basin and management activities required to identify supplemental water sources to provide the required delivered water quantity and quality without adverse impact to the Pajaro groundwater basin. This service also includes water quality monitoring and testing of the recycled water to ensure that it meets the requirements of the Regional Board and Agency irrigators.

The delivered water service includes processing of water delivery orders, scheduling delivery of water, cross connection and backflow prevention device testing, monitoring and inspection of recycled water use sites, and meter-related activities.

The Agency funds this service through a delivered water charge imposed on users of the delivered water service. The only property owners subject to the delivered water charge are those that have applied for and receive delivered water from the Agency through the CDS. The charge is authorized by Sections 501,704, 711 and 714 of the Agency Act.

Water Users and Demands

Agency Water User Categories

As noted in Chapter 1, the two property-related services provided by the Agency benefit all water users within its service area. These services are further delineated between four user categories based on the following service attributes:

1. **Metered Water Users - Inside the DWZ.** Includes owners of municipal, industrial, agricultural, and other wells with meters located within the DWZ. These owners and their tenants have turnouts to the CDS and access to the Agency's supplemental water supply. Well owners and delivered water users in this category are subject to an augmentation charge and delivered water charge.
2. **Metered Water Users - Outside the DWZ.** Includes owners of municipal, industrial, agricultural, and other wells with meters located outside of the DWZ. Water consumption⁷ by all municipal water users is metered. Water users in this category are subject to an augmentation charge.
3. **Delivered Water Users.** Includes property owners and tenants located within the DWZ who receive recycled water produced at the Watsonville RWF, blended with well water and Harkins Slough water, and distributed through the CDS. All consumption of delivered water is metered. Water users in this category are subject to a delivered water charge.
4. **Unmetered Water Users.** Includes owners of rural residential water wells without meters. Water users in this category are subject to an augmentation charge. Rural water users that are not metered are currently billed based on an estimated use of 0.59 AF of groundwater per residence served per year. Larger residential wells, producing at least 10 AF per year or more, and wells serving 15 or more connections, are metered and are charged for their consumption as metered water users.

⁷ This report uses "consumption" to refer to both water extracted by groundwater wells (for purposes of the augmentation charge) as well as Agency recycled water delivered to customers from the CDS (for purposes of the delivered water charge).

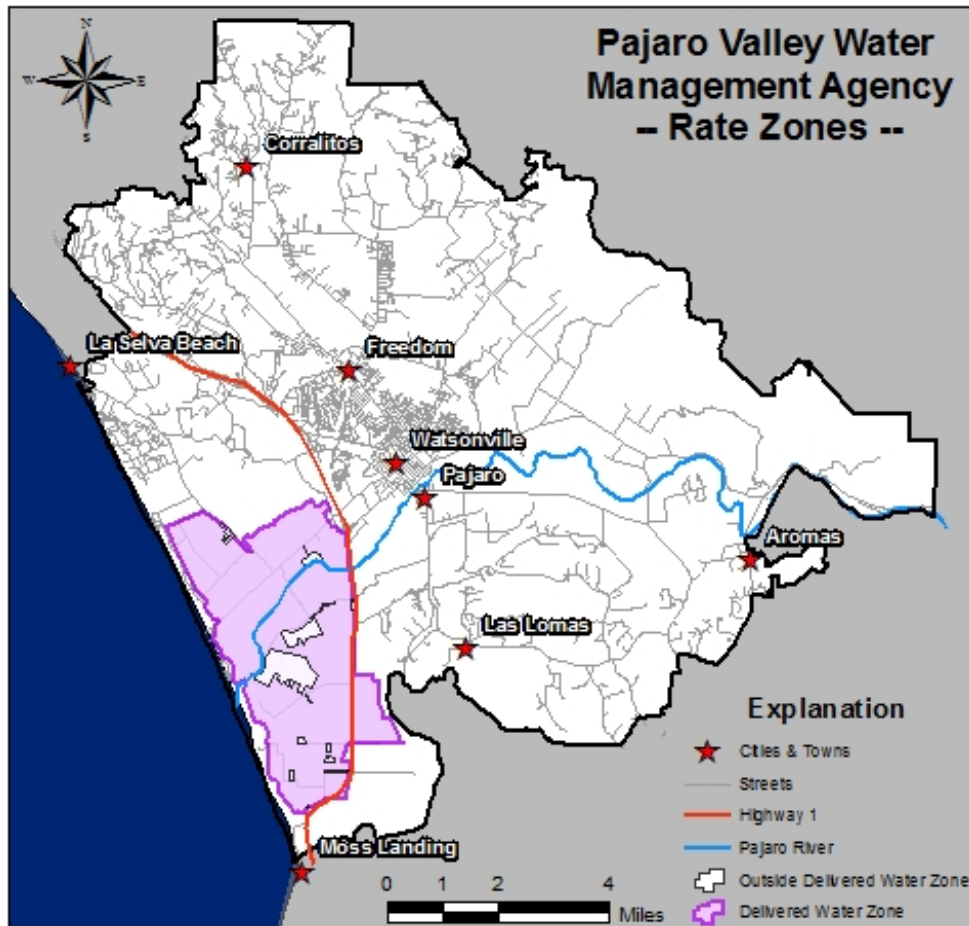


Figure 2-1 Agency Rate Zones

Categories 2 and 4 are subject to the augmentation charge. Category 3 is subject to the delivered water charge. Category 1 is subject to an adjusted augmentation charge that reflects a higher level of service in that area.

Historical Consumption

Table 2-1 presents the historical consumption and account data for metered and delivered water users. As seen from historical data, the metered water users account for the majority of the water consumption in the Pajaro Basin.

Metered, unmetered, and delivered water users have different service characteristics, and as such, are the defined classes considered in the cost of service analysis and development of rates. Historical consumption patterns and water user accounts were compared for each of the classes over the previous five years. *Figure 2-2* presents a comparison of historical consumption by class.

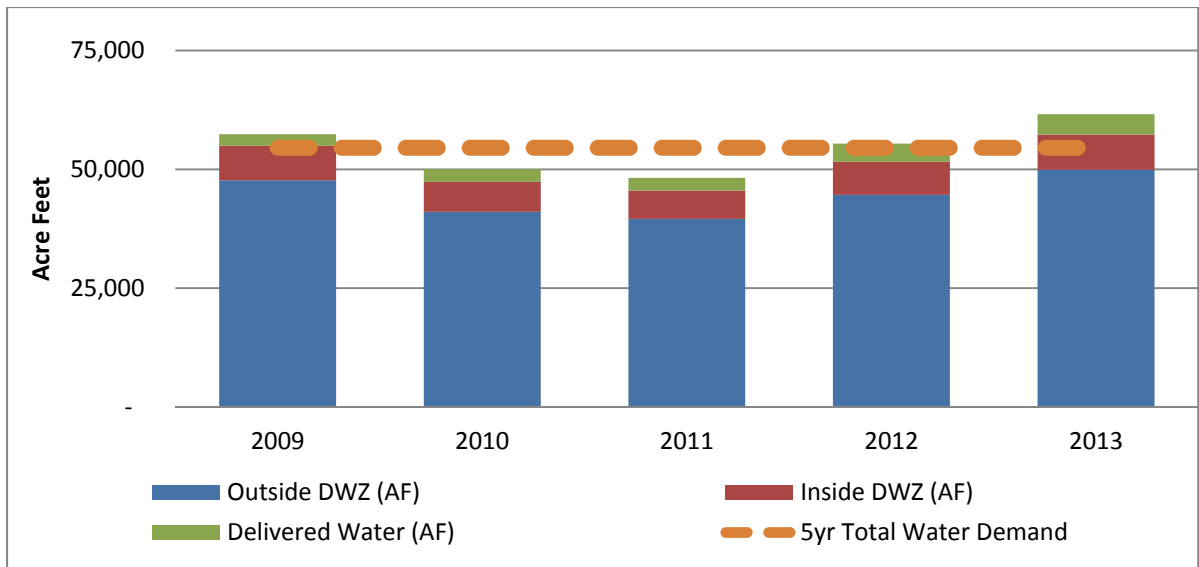


Figure 2-2 Water Consumption

Metered Water Users

The metered water user group includes municipal, industrial, and agricultural well owners. The municipal water users include the City of Watsonville, Aromas Water District, Cal Water Services Company, Vega Mutual Water Company, and the Pajaro/Sunny Mesa Community Services District. The volume of water consumed⁸ by all municipal water users is metered.

The Agency requires metering at all agricultural, industrial, and commercial wells producing at least 10 AF per year. A well is required to be metered if it serves 10 acres of orchard, 4 acres of berries or row crops, or 2.5 acres of greenhouse facilities. Metering is optional for all agricultural, industrial, and commercial wells producing less than 10 AF per year.

The Agency tracks and bills metered consumption on a quarterly period for the metered water users. The past five-years of quarterly consumption patterns are presented in Figure 2-3. The cost of service for agricultural wells includes the cost associated with the larger meters required for this class. Although there is seasonal variability in the consumption patterns for agricultural water users, due to the quarterly frequency of the data and the unique characteristics of each agricultural well account, identification of impacts due to seasonal variability in consumption is not possible at this time. Basin impacts from seasonal use patterns for metered agricultural water users were therefore excluded from this Service Charge Report.

⁸ This report uses “consumption” to refer to both water extracted by groundwater wells (for purposes of the augmentation charge), as well as Agency recycled water delivered to customers from the CDS (for purposes of the delivered water charge).

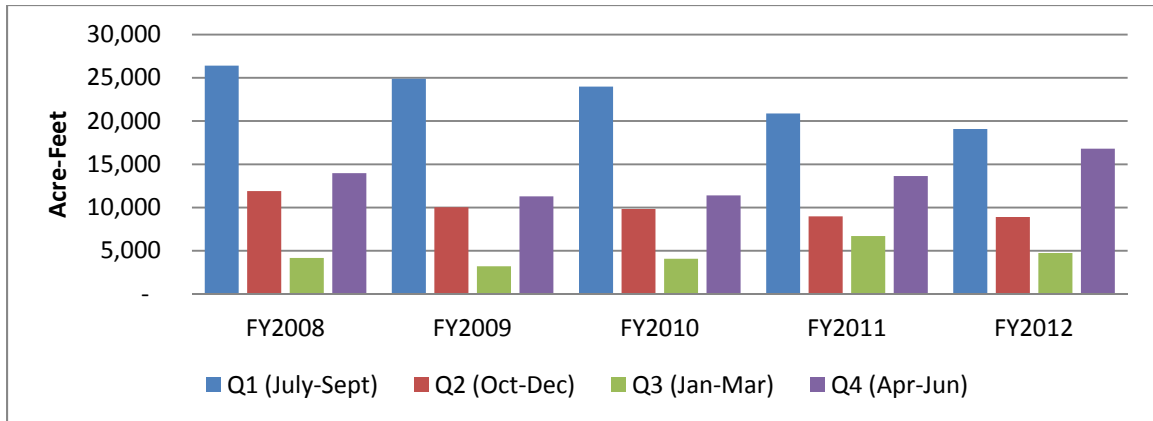


Figure 2-3 Metered Water User Quarterly Consumption

Metered Water Users in the Delivered Water Zone

Metered water users located within the DWZ use turnouts to access the Agency's supplemental supply of high-pressure delivered water. Some property owners with wells in the DWZ are not currently connected but have the ability to connect to the CDS to access the Agency's delivered water. This immediate access to the delivered water supply represents a higher level of supplemental water service for well users located inside the DWZ, compared to property owners with wells outside the DWZ. The Agency therefore has determined that well owners located inside the DWZ constitute a distinct class and should pay a higher augmentation charge to reflect the higher level of service.

Water quality regulations prohibit connection of a domestic water supply to the delivered water system. Therefore, unmetered water users (rural residential) in the DWZ are excluded from the water users receiving access to an alternate water supply.

Some water users within the DWZ are unable to connect to the delivered water system due to location. These water users have also been excluded from the water users receiving access to an alternate water supply. The gaps within the DWZ (shown in Figure 2-1) represent the area within the DWZ where properties are unable to connect to the delivered water system.

Table 2-1 presents the consumption and number of metered and delivered water users in the DWZ. These metered water users have access to the services of the CDS and are charged for their share of the additional costs of service, based on available capacity of the system, provided to metered water users subject to the augmentation fee in the DWZ.

Delivered Water Users

The delivered water users receive a blend of well water and tertiary treated recycled water from the Watsonville RWF. The Watsonville RWF began operation in 2009. Prior to the operation of the RWF, delivered water consisted of water supply extracted from recharge and supplemental wells. Table 2-1 presents water consumption and account data for delivered water users.

Table 2-1 Consumption Data by Calendar Year (CY) Proposition 218 Service Charge Report Pajaro Valley Water Management Agency								
	CY 2009	CY 2010	CY 2011	CY 2012	CY 2013	5-Year Average (2009-13)	Forecasted 10-year Average	Well Owners / Accounts
Consumption Outside DWZ (AF)								
Metered Water Usage ⁽¹⁾	46,234	39,600	38,465	43,493	48,776	43,314	42,170	829
Unmetered Water Usage ⁽²⁾	1,486	1,474	1,127	1,133	1,139	1,272	910	1,133
Consumption Inside DWZ (AF)								
Metered Water Usage	7,278	6,293	5,971	6,984	7,407	6,787	4,010	79
Delivered Water Usage ^(3,4)	2,406	2,681	2,630	3,788	4,275	3,156	6,000	59
Total Consumption	57,404	50,048	48,193	55,398	61,597	54,528	53,090	
Notes: (1) Excludes water users east of the San Andreas Fault that are not hydrologically connected to the Pajaro Basin. These water users represent 0.03% of Pajaro Basin consumption. (2) Following an updated analysis, rural residential water use estimated at 0.5 AF per year, revised from the previous estimate of 0.59 AF, causing a significant drop from the previous 5-year average. (3) The Agency is continuing to expand Delivered Water deliveries. Based on capacity of the RWF and peak irrigation demands, potential consumption was estimated at 6,000 AF per year. This comprises 4,000 AF of recycled water and 2,000 AF of blend water. (4) Growth in delivered water deliveries are expected to be offset by decreased consumption of metered users in the DWZ. However, metered water user accounts in the DWZ are not expected to decrease as most metered accounts are expected to continue to remain as active back-up systems.								

As new supplies have been brought on-line, water deliveries have increased. However, these increases have offset the amount of pumping inside the DWZ. *Figure 2-4* presents the historical consumption pattern for delivered water users and the corresponding trend of decreased groundwater usage inside the DWZ. Although there are year-to-year fluctuations, likely due to weather patterns, there is a clear trend of replacing DWZ well water pumping with delivered water.

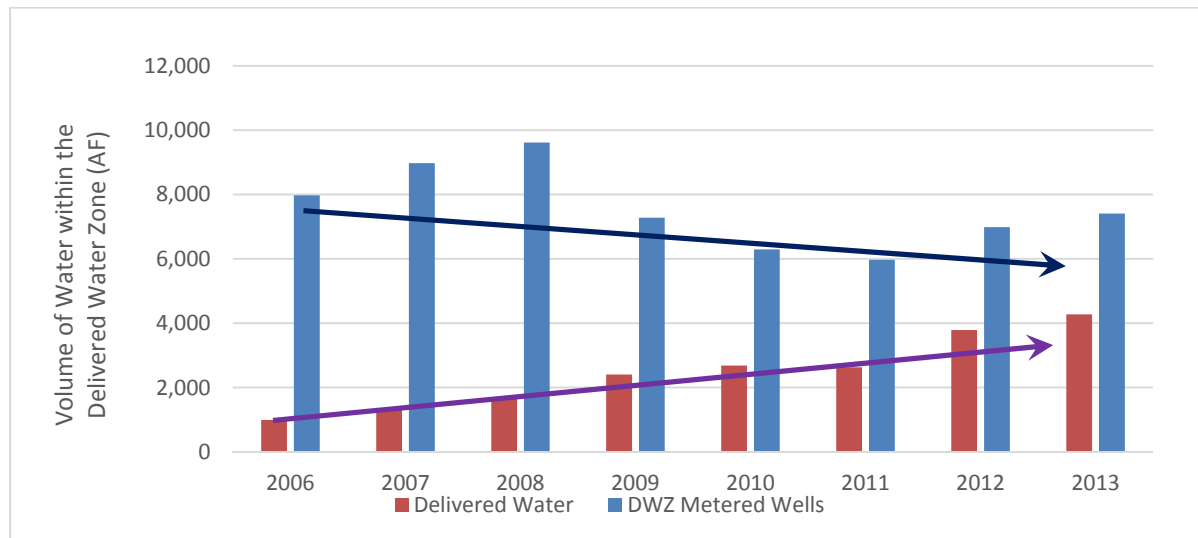


Figure 2-4 Delivered Water User Annual Consumption

The Agency has tracked delivered water consumption on a quarterly basis for the delivered water users over the last three fiscal years. The quarterly consumption patterns are presented in *Figure 2-5*.

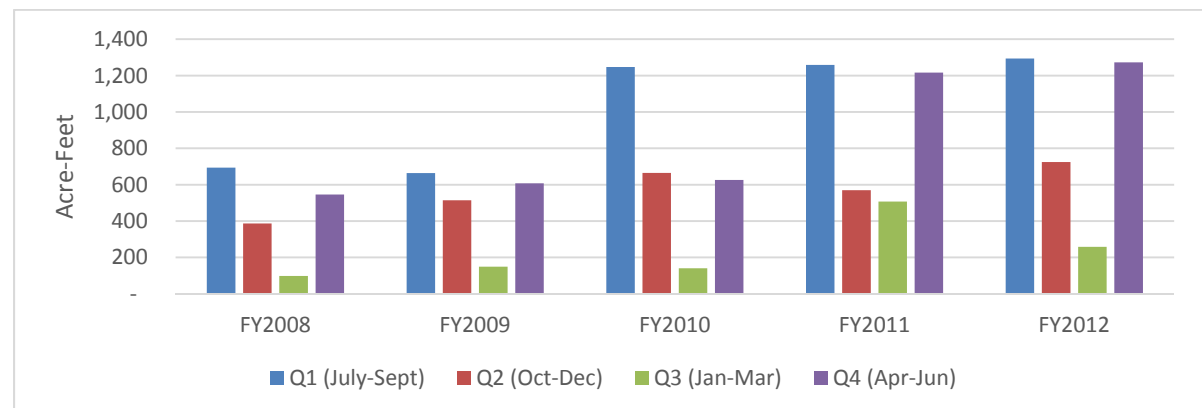


Figure 2-5 Delivered Water User Quarterly Consumption

The consumption data for delivered water users shows a distinct seasonal variability. The RWF and CDS have been designed, and are operated, to meet these seasonal/peak demands. The Agency is researching the possibility of implementing seasonal or time-of-use rates to encourage additional water deliveries. However, the Service Charge Report has excluded potential increases in deliveries from these programs.

An owner who has applied for and receives delivered water is subject to the delivered water charge. All consumption of delivered water is metered. Some properties within the DWZ use a combination of delivered water and groundwater. These properties are subject to both the delivered water charge for water delivery to the property, and the augmentation charge at the higher DWZ rate for groundwater extracted by the parcel owner.

Unmetered Water Users

Unmetered water users include the rural residential users within the Agency's service area. Historically, the unmetered water users have been billed for an estimated annual water consumption of 0.59 AF per residence. Larger residential wells producing at least 10 AF per year (or more) and wells serving 15 or more connections are metered and are charged for their metered consumption.

As part of the 2010 analysis, data was gathered from neighboring metered residential water users (Aromas Water District, the Central Water District, and San Andreas Mutual Water Company) in order to better estimate the water consumption by unmetered rural residential water users. However, the 2010 estimation only included water consumption information over a single year. As such, the AHFC requested that this estimation be updated to reflect multiple years of demands to better estimate rural residential demands.

The rural residential consumption for these neighboring users is similar to and representative of that estimated for the unmetered users in Basin due to the similarity in the rural uses, parcel sizes, and climate considerations.

Aromas Water District serves 905 connections (residences) served through the use of three groundwater wells. The average metered/calculated pumped groundwater consumption per connection per year in the Aromas Water District service area is 0.39 AF. The Central Water District services 812 connections using five groundwater wells. The average pumped groundwater per parcel per year in the Central Water District service area over the past five-years was 0.66 AF. San Andreas Mutual Water Company serves 140 connections using three groundwater wells. The average pumped groundwater consumption per parcel for San Andreas Mutual was 0.50 AF.

Rural residential consumption was estimated as an average of the Aromas, Central, and San Andreas consumption data. The Agency rural residential consumption per residence was estimated at 0.5 AF. Supporting documentation and calculations are provided in Appendix A. The Agency will use this figure in calculating the augmentation charge for property owners with unmetered wells. Rural residential well owners who would prefer to be billed based on actual usage, may install meters on their wells at their own expense with Agency authorization. Once installed, the Agency will calculate billings based on actual extraction data.

Unmetered water users are billed annually for their consumption unlike the metered and delivered water users who are billed quarterly. Under the updated rate structure, the Agency will bill

property owners with unmetered wells on their properties based on an estimated 0.50 AF per year per residence connected to the well.

Forecasted Consumption

The Agency forecasted service demands in order to produce projected rates over the next five fiscal years. Its review of historical consumption demonstrated the natural variability of water demands in the Pajaro Valley due to a combination of dry and wet years, crop rotations, and the economy. While historical demands were analyzed, they do not serve as a proxy of future water demands. Additionally, as the basin is currently in overdraft conditions, existing demand levels cannot be sustained without continued BMP improvements to the basin.

Given the consumption analysis and targeted demand levels in the basin, FY 2015 water demands are based on the analyzed 5-year average. One percent annual conservation is forecasted to take place for the next 10 years with the implementation of the BMP Update water conservation program. *Figure 2-6* presents the previous five years of water demands as well as the future 5 years of projected demands.

In addition to forecasted conservation, *Figure 2-6* illustrates a continued shift of demands from groundwater extractions inside the DWZ to delivered water. A revenue sensitivity analysis, detailed at the end of Chapter 6, evaluates the impact of potential revenue volatility under different demand estimates.

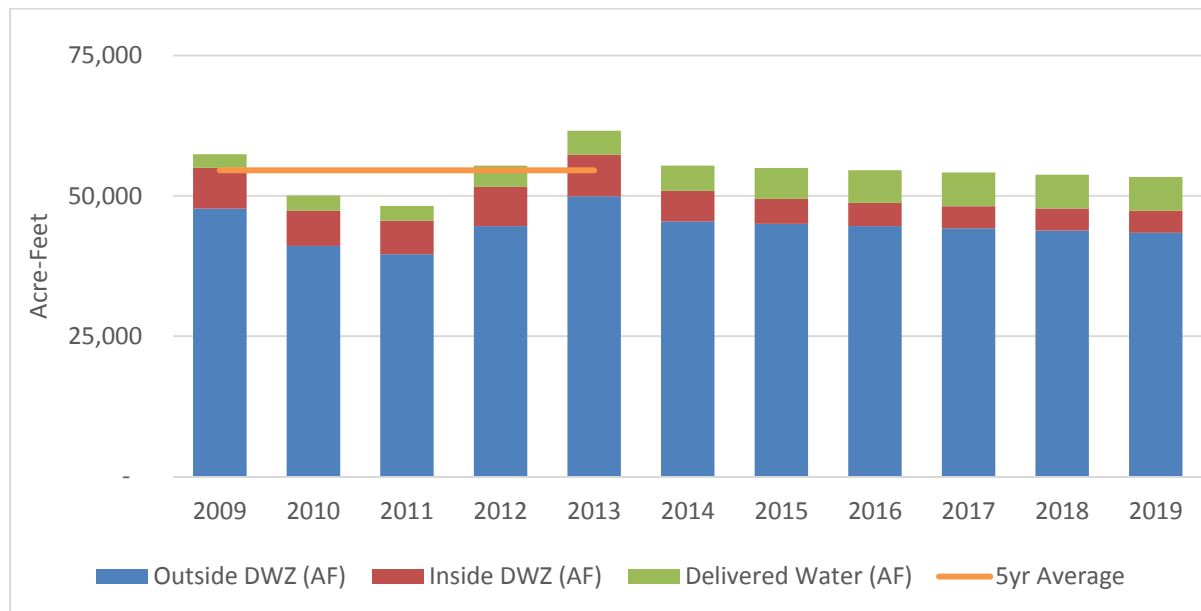


Figure 2-6 Historical and Forecasted Agency Water Demands

Revenue Requirements

Introduction

According to the American Water Works Association (AWWA) M1 Manual, cost of service based rates are rates that recover “operating and capital costs incurred in meeting various aspects of providing water service, such as customer billing costs, demand-related costs, and variable costs.”

The Agency analyzed the revenue requirements of the Agency, net of management fee⁹ revenues. The Revenue Requirement analysis has two main purposes: (1) it serves as a means to evaluate the fiscal health of the Agency and adequacy of current rate levels; and (2) it sets the basis for near- and long-term rate planning. The foundation of the analysis of revenues is based on relevant financial information, including existing debt service and future payments, current reserve ending fund balances, budgeted and forecasted expenses, future revenues, and other financial information.

Based on the findings of this study, and per the recommendations of the Ad-Hoc Funding Committee (AHFC), the Agency finds that revenues need to increase five percent annually. This corresponds to rate increases of an average of roughly 6.5 percent annually over next five years in order to fund the delivered water service and supplemental water service as described above, including operational and capital needs, service obligations, and levels of service objectives. These recommended revenue adjustments are discussed in detail within this chapter.

Assumptions

The following information was provided to Carollo by the Agency and was relied upon for preparation of this report:

- Basin Management Plan Update (approved April 2014)
- Final Budget Fiscal Year 2015 (FY14/15 Budget)
- Audited Financial Statements, June 30, 2013
- Official Statements (1999 COP and City of Watsonville) (Existing Debt)
- Cash Reserve Policy. (Operating reserve set to Minimum 90 day / Max 180 days of operating reserve; Capital reserves set to \$1M minimum)

⁹ The Agency levies and collects a management fee under Agency Act section 902 to fund the costs of initiating, carrying on, and completing Agency projects and other authorized purposes.

- Historical Account and Consumption Data
- Pajaro Valley Water Management Agency Act
- *Griffith v. Pajaro Valley Water Management Agency* (2013) 220 Cal.App.4th 586 (Pendry/Griffith Decision)
- Service Area Maps
- 2010 Agency Proposition 218 Service Charge Report

These documents, including information from the Agency's billing system on metered and unmetered water users, were relied upon as accurate by Carollo to prepare this service charge study.

Several assumptions were used in the allocation of cost and the development of rates. These are summarized below.

1. The Agency's preliminary 2015 budget, representing typical Agency expenses on an annual basis, was used as the financial baseline to develop rates.
2. Based on discussion with the Agency and its Financial Advisor, the Agency's existing 1999 Certificates of Participation is planned to be refunded ahead of FY 2016, following Board adoption of the 2014 Service Charge Report.
3. Based on discussion with the Agency and its Financial Advisor, the City of Watsonville debt service is planned to be restructured in early FY 2017/18 following a \$10M pay-down. Upon restructuring, it is expected the Agency, rather than the City of Watsonville, would be the holder of the debt.
4. Future increases are necessary to fully fund and support forecasted debt service payments related to Phase 1 of the BMP.
5. All capital projects associated with Phase 1 of the BMP are forecasted to be debt funded.
6. Following a refunding of existing debt, the Agency is forecasted to comply with the revised 1.15x bond coverage requirement for existing and future debt issuances. The existing debt coverage requirement is 1.25x.
7. Net revenue generated in the General Fund from management fee revenues will not be used to offset revenue requirements to be paid for through other funds.
8. The Agency will maintain minimum 90 days of operating cash reserve.
9. Unmetered domestic water users in the DWZ will not connect to the delivered water system, as the water regulations do not permit use of delivered water for domestic use.

Revenue Requirements Overview

A revenue requirements analysis determines the annual system revenue necessary to be recovered through water rates and charges in order to meet the Agency's expected financial obligations. The revenue requirement comprises five components: (1) operations and maintenance expenditures;

(2) annual debt service; (3) capital expenditures; (4) policy requirements and coverage; and (5) offsetting revenues.

The revenue requirement analysis considered the following two tests to determine whether rates are sufficient:

- **Cash Flow Test** - The Agency must generate annual utility revenues adequate to meet general cash needs.
- **Bond Coverage Test** - Annual rate revenues must satisfy debt coverage obligations, as required by indenture.

The cash flow test identifies the amount of annual revenues that must be generated in order to meet annual expenditure obligations. These obligations include operations and maintenance (O&M) expenses, debt service payments, policy-driven additions to working capital, replacement funding, and rate-funded capital expenditures. These expenses, less offsetting revenues (e.g., management fees), are compared to total annual projected retail revenues. Shortfalls are then used to estimate the need for rate increases.

The bond coverage test measures the ability of a utility to meet both legal and policy-driven revenue obligations. The Agency is required to collect sufficient funds through rates so that the annual net revenues for operational expenditures plus available reserves meet or exceeds 1.25 times total annual debt service. This coverage factor is set by indenture in order to maintain compliance with the Agency's legal obligations.

As expected, the analyzed annual cash flow of the Agency reveals the main driver is the capital funding related to implementation of the BMP Update. It should be noted, the Agency has the ability to use reserves to satisfy the annual cash flow test in order to minimize rate spikes.

Expenditures and Forecast Assumptions

Expenses

The Agency constructed the CDS, supplemental wells, and Harkins Slough facilities to increase Pajaro Basin water supplies. The Agency also partnered with the City of Watsonville for the construction of the Watsonville RWF (including supplemental wells) to bring additional water supplies to the Basin. In addition to the O&M of its facilities, the Agency monitors and manages the water resources within the Pajaro Basin, developing Basin Management Plans and planning for additional supplemental water projects.

The Agency paid for the construction of its existing supplemental water facilities through the issuance of debt. Details on the outstanding debt are provided in Appendix C.

The Agency prepares an annual budget organized into six main expense groups:

1. **Agency Administration:** Includes expenses associated with the daily administration of the Agency including general Agency management, Board services, support services, public outreach, and water conservation-related expenses (as described in the BMP Update).
2. **Special Fund General Administration:** Includes expenses associated with grant administration, outreach, and management of the supplemental water and delivered water services.
3. **Facility Operations:** Includes O&M of the supplemental and delivered water services, including the operation of the CDS, Harkins Slough facilities, the Watsonville RWF (including supplemental wells), and metering program.
4. **Basin Management Planning:** Includes expenses associated with groundwater modeling, water quality monitoring, water resources planning, and management of the groundwater basin. Basin management planning activities allow the Agency to determine groundwater conditions within the Pajaro Basin and to manage and identify supplemental water needs, sources, and financial resources for supplemental water.
5. **Capital Projects:** Includes expenses related to planned capital projects. Future capital projects were identified as part of the BMP Update.
6. **Debt Service:** Includes costs associated with payment of outstanding debt on the facilities described in Chapter 1. These obligations were incurred to enable the Agency to provide the supplemental water service and delivered water service in furtherance of the objectives identified under the Agency Act.

The Agency's FY 2014/15 operating budget served as the foundation for forecasting future operating expenses. Staff also reviewed the preliminary expenditure forecasts to identify costs that may need to be adjusted due to future operational changes (e.g., staffing to research/implement tiered rates). In addition to these specific adjustments, expenditures to be incurred in future years were projected using escalation factors that were reviewed with the AHFC and Agency staff.

Forecasting of Future Expenditures

Generally, costs were escalated at 3 percent annually to account for general inflation. To refine this broad assumption, individual line item costs were assigned one of the escalation factors shown in Table 3-1 to better account for variability between cost categories. These escalation factors were then applied to the appropriate categories of expenditures to forecast costs incurred by the Agency.

Table 3-1 Cost Escalation Factors Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Cost Escalators	Description
Labor Cost Inflation	Labor and fringe benefit rates are estimated to increase at 3 percent annually.
Construction Cost Inflation	Capital cost inflation is 3 percent linked to the long-term inflation rate <i>Engineering News Record (ENR) Construction Cost Index (CCI.)</i>
General Cost Inflation	This rate applies to most expenses in the operating expense forecast, and the Agency's expected long-term inflation rate of 3 percent.
Power and Chemicals Inflation	Costs associated with power and chemicals are estimated to increase by 5 percent annually. In general, these costs tend to increase more rapidly than general costs.
Earning on Interest	The interest earning rate for the Agency's operating reserve is estimated at 2 percent.
Conservation	With implementation of the BMP water conservation program, a 1 percent water demand reduction (1 percent conservation) is applied annually to all customer classes.

The Agency anticipates additional incremental O&M costs in future years associated with new capital assets from the BMP. These will be in addition to the escalated O&M costs discussed previously. For FY 2015, the total operating costs of the utility are projected to be \$10.9 million.

Operating costs for the next ten-years were forecasted using the FY 2015 budget baseline and applying appropriate annual escalation factors presented in Table 3-1. In addition, the Agency has included funding for three additional staff to further support conservation efforts and facilities operations. One position was forecasted to be funded in each of the first three fiscal years.

The forecasted expenditures for the next 5-years are shown in Table 3-2.

Table 3-2 Forecasted Expenditures Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
Expenditures	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Personnel	\$1.84	\$2.03	\$2.22	\$2.29	\$2.35
Maintenance & Equipment	4.72	4.91	5.06	5.21	5.37
Debt Service	4.33	4.56	5.07	5.07	5.07
Rate Funded Capital	2.50	1.94	1.94	1.94	1.94
New BMP O&M	0.07	0.08	0.19	0.19	0.20
Total Expenditures	\$13.47	\$13.51	\$14.47	\$14.70	\$14.93
Notes: (1) Presented in million dollars. Calculations in tables may not foot due to rounding.					

Future Capital Funding

The BMP Update is envisioned as a 30-year plan to be implemented in three phases. Phase 1 will begin following Board adoption of the BMP and related Environmental Impact Review (EIR) in 2014, and public approval of a new rate structure in 2015. Phase 1 projects (as described in Chapter 1) are scheduled to be completed and operational between 2015 and 2024. Phase 2 is scheduled to begin in 2025 and continue through 2034. Phase 3, if required, will begin in 2035 and go through 2044. The service charge calculations in this report include capital funding for only the Phase 1 projects.

New project and program expenditures were added to Agency's baseline expenditures and new debt issuances were built into the cash flow model for funding of the identified Phase 1 BMP projects. The approved projects were added to the financial and rate model, with planning, design, construction, and O&M costs placed, per the BMP, where they would most likely fall in the projected timeline.

As described below, there are multiple ways to fund capital projects; however, the proposed financial plan utilized conservative assumptions. While being pursued aggressively by the Agency, no new grant funding or low interest SRF loans were included in the funding analysis.¹⁰ Project costs related engineering, legal and acquisition (ELA) costs are planned to be rate or reserve funded. Project construction or capital costs are expected to be funded through new debt issuances.

¹⁰ The Agency was awarded a \$900,000 Proposition 84 grant in February 2014 that will support funding of the Recycled Water Storage Tanks. No additional grant or SFR funding is forecasted.

Grant Funding

The Agency has been very successful in obtaining outside grant funding to help subsidize capital projects identified in previous BMPs. To date, the Agency has been awarded nearly \$50 million of state and federal grant funding that has been applied to the planning, design and construction of the Watsonville RWF, the CDS, Supplemental Wells, and Harkins Slough Recharge Facilities (Appendix B). Continuing the effort to obtain additional grant funding will be a key component of the BMP Update implementation plan. Any grant monies received will provide the Agency greater financial flexibility in future operating or capital planning. As with any financial analysis, it is advised that the Agency regularly update its financial model to analyze potential impacts to revenues and expenditures.

Debt Service

The Agency has existing debt obligations from completed capital projects. The annual payments for existing debt are calculated on a fiscal year basis. It is forecasted that the Agency will continue to issue debt to fund the BMP (capital component). Issuing debt provides two primary benefits. First, given the size and proximity of the BMP capital program, the Agency does not have the available financial reserves that would otherwise be required to fund the BMP program, nor would it be reasonable to increase rates and charges in order to cash fund these programs. Second, spreading long-lasting projects over the debt service repayment period provides intergenerational equity by effectively distributing the financial burden between both existing and future users of the system. This approach enables the Agency to align the cost of implementing the BMP with the owners and customers receiving service from the improvements. *Figure 3-1* illustrates the forecasted total debt schedule of the utility including both existing and future debt.

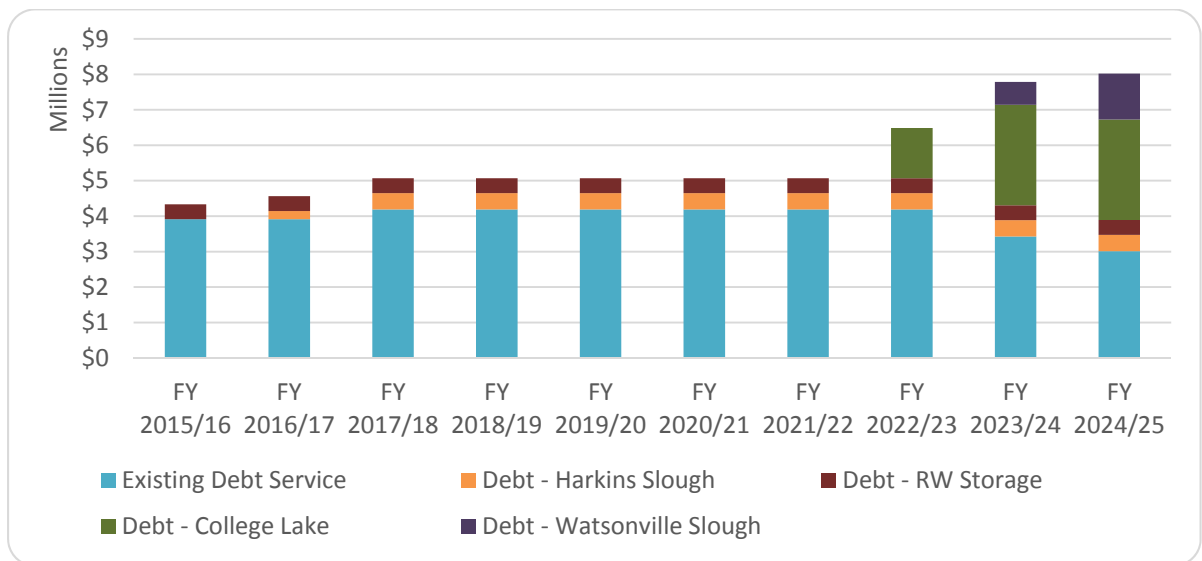


Figure 3-1 Agency Projected Annual Debt Service Payments

Debt Refunding

Looking to efficiently manage its financial obligations and limit necessary increases, the Agency is interested in exploring the cost savings associated with refunding or structuring its existing debt obligations. In the fall of 2014, the City hired a financial advisor to assist with this process. The figures shown in the Preliminary Draft are based on preliminary discussions with the Agency and its financial advisor.

Notably, the Agency is looking to refund or structure its existing 1999 Certificates of Participation (COP) and City of Watsonville obligations. Similar to refinancing a mortgage, refunding enables the Agency to adjust the interest rates on its existing obligations, thus lowering the annual payments. Given the current, historically low, interest rate environment, this process could lower the Agency's debt service expenditures roughly \$500,000 annually. At the request of the Agency, these refunding opportunities are planned to take place once administratively and legally feasible. The 1999 COP is forecasted to be refunding in FY 2016 (following removal of the Agency's rate sunset provision associated with existing rates and initiation of the Proposition 218 process).

The Agency currently reimburses the City of Watsonville for debt service related to the Watsonville RWF. As such, the City, not the Agency, is required to maintain the necessary debt service coverage requirements. While this debt is not available for immediate refunding or restructuring, with the assistance of its financial advisor, the Agency is considering both restructuring and refinancing options. For the purposes of this analysis, it is forecasted the Agency pays-down the outstanding principal by \$10M (through use of reimbursed grant funds held at the City of Watsonville) and refinances any remaining principal.

Should the Agency not refund or restructure existing debt or if interest rates are significantly different than those forecasted, the financial and rate forecast may need to be revisited.

Revenue/Reserve Funded Capital

The Agency intends to fund any remaining costs that are not grant or debt funded, including the planned ELA expenses, through annual rate revenues. This funding approach is generally referred to as pay-as-you-go (PayGo) and allows an agency to perform capital improvements without having to issue debt. These proposed ELA activities are rate funded as they generally span over multiple years and can be adequately funded through existing revenues and reserves. The amount of PayGo is limited by the Agency's free cash flow (revenues less all other expenses). However, in some years, the forecasted PayGo amount exceeds available cash flow in which case reserves cover remaining needs. If reserves were not utilized, the proposed revenue increases would be increased to provide sufficient cash flow. However, based on the AHFC's recommendation, reserves were utilized to keep rate increases at a minimum over the 5-year study period.

Policy Requirements and Coverage

Reserve Policy

As of the beginning of FY 2015, the Agency's available reserves totaled an estimated \$10 million. The reserves have been funded in large part through a combination of cost savings and increased pumping (demand) throughout the basin. The Agency's available reserves act in part as an operating reserve. Per Agency policy, the amount held in these reserves is targeted to be equal to or exceed 25 percent of operating expenses. However, given recent revenue collections, the Agency currently exceeds this policy requirement. Excess operating reserves are then available to fund ELA costs, additional capital and repair and replacement (R&R) activities, and act as a rate stabilization fund to mitigate the need for larger rate increases in the short term. Following recommendations of the AHFC, the financial plan has accordingly forecasted partial use of excess reserves to smooth rate increases over the planned 5-year time horizon.

Debt Coverage Requirements

By indenture, the Agency is currently required to maintain at least 1.25x coverage ratio of annual debt service. This coverage is calculated as the ratio of net revenues available, to total annual debt service requirements. Should the Agency refinance its existing debt, it is expected that this target would be reduced to 1.15x. It is necessary to note, that the City of Watsonville debt is not currently held directly by the Agency, rather it is a reimbursement to the City of Watsonville for debt incurred on behalf of the Agency. As such, while classified as debt in the Agency's Budget it is not designated as debt for purposes of the Agency's coverage ratio.

The actual coverage ratio is expected to be 1.81x for FY 2016. While no additional revenue must be collected to meet existing debt coverage requirements in FY 2016, as the Agency plans to issues debt, increases are necessary to meet coverage requirements.

Offsetting Revenues

In addition to the revenues generated from rates and charges, the Agency collects revenues through other funding sources, such as management fees, interest earnings, and grant income. These offsetting revenues reduce the total rate revenue that must be collected from customers. Similar to the operating costs, offsetting revenues are escalated from FY 2015 revenues, by applying factors discussed with Agency staff and consistent with industry standards. These factors were discussed in Table 3-1.

Revenues

The sources of revenue for the Agency are as follows:

- **Management Fee:** The Management Fee, established and collected as set forth by Agency ordinance, may be used for the purposes of paying the costs of initiating, carrying on, and

completing any of the powers, projects, and purposes for which the Agency is organized [Agency Act, Section 902].

- **Augmentation Charge:** The augmentation charge, established and collected as set forth by Agency ordinance, may be used for the purposes of paying the costs of purchasing, capturing, storing and distributing supplemental water for use within the boundaries of the Agency and to pay for activities to prepare and implement the Agency groundwater management program [Agency Act, Cal Const. Art. XIII D].
- **Delivered Water Charge:** The delivered water charge, established and collected as set forth by Agency ordinance, may be used for the purposes described and set forth in the ordinance imposing the charge [Agency Act, Cal. Const. Art. XIII D].
- **Other:** Other sources of revenue may be used in accordance with applicable law, and include grants, loans, and rent payments from tenants leasing property owned by Agency.

The existing FY 2015 Agency augmentation charge is \$179 per AF of pumped groundwater outside the DWZ and \$215 per AF inside the DWZ. The existing delivered water charge is \$338 per AF of delivered water. Augmentation revenues accounted for more than 84 percent of the audited FY 2013 revenues. Water sales from delivered water charges accounted for nearly 11 percent, with management fees and other revenues accounting for the remaining 5 percent. In its preliminary 2015 budget, the Agency anticipates total revenues of nearly \$12.5 million.

Revenue Requirements

The Agency's annual revenue requirements include annual operating, capital and debt service expenditures, and sufficient addition resources to meet or exceed the Agency's cash flow and bond coverage tests. *Figure 3-2* illustrates the forecasted expenditures and funding capacity of forecasted revenues exclusive of any additional increases in augmentation and delivered water service charges. The forecast clearly demonstrates the need for annual rate increases to offset the combined impacts of increasing operating requirements, capital improvements and projects described in Phase 1 of the BMP Update, and reduced revenues caused by increased water conservation efforts.

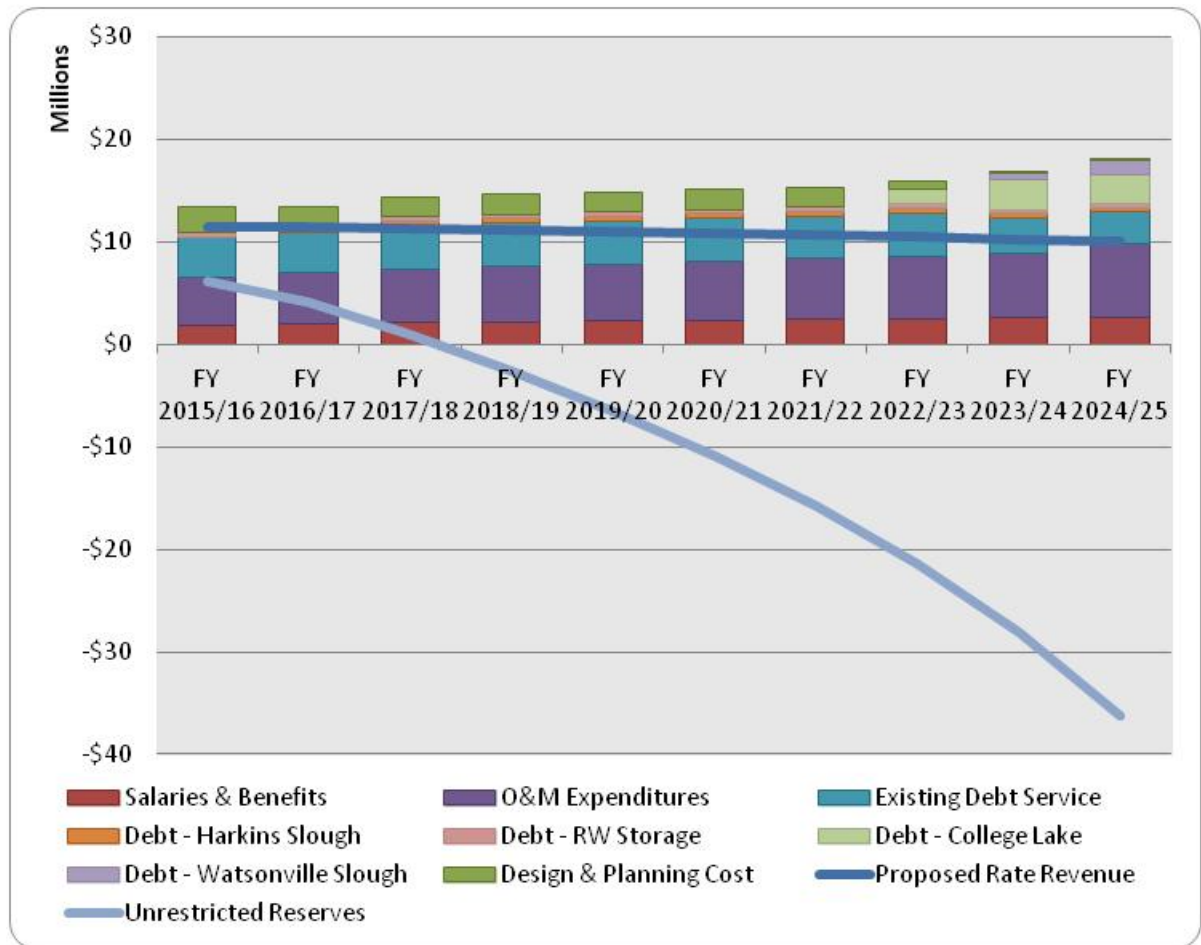


Figure 3-2 Projected Expenditure and Revenues (Prior to Increases)

Although the Agency is limiting its rate-setting recommendations to the five-year period from FY 2015 through FY 2020, the financial forecast is purposefully extended through FY 2025. The extended financial forecast facilitates financial planning for future expenditures and debt service requirements, continued funding of the BMP, and to mitigate or smooth future rate increases.

Figure 3-3 introduces projected increases in service charges into the financial forecast described in Figure 3-2. The amount of the projected increases reflects recommendations of the AHFC to moderate and smooth increases in service charge rates by tapping the Agency's unrestricted cash reserves to fund planned capital projects. Table 3-3 provides a summary of the financial forecast and AHFC recommendations illustrated in Figure 3-3. As shown, additional increases, in years 6-10, are necessary to fund forecasted expenditures Phase 1 of the BMP Update. If the Agency did not want to have increases in years 6-10, additional (i.e., larger) increases would be required to fully fund the BMP Update.

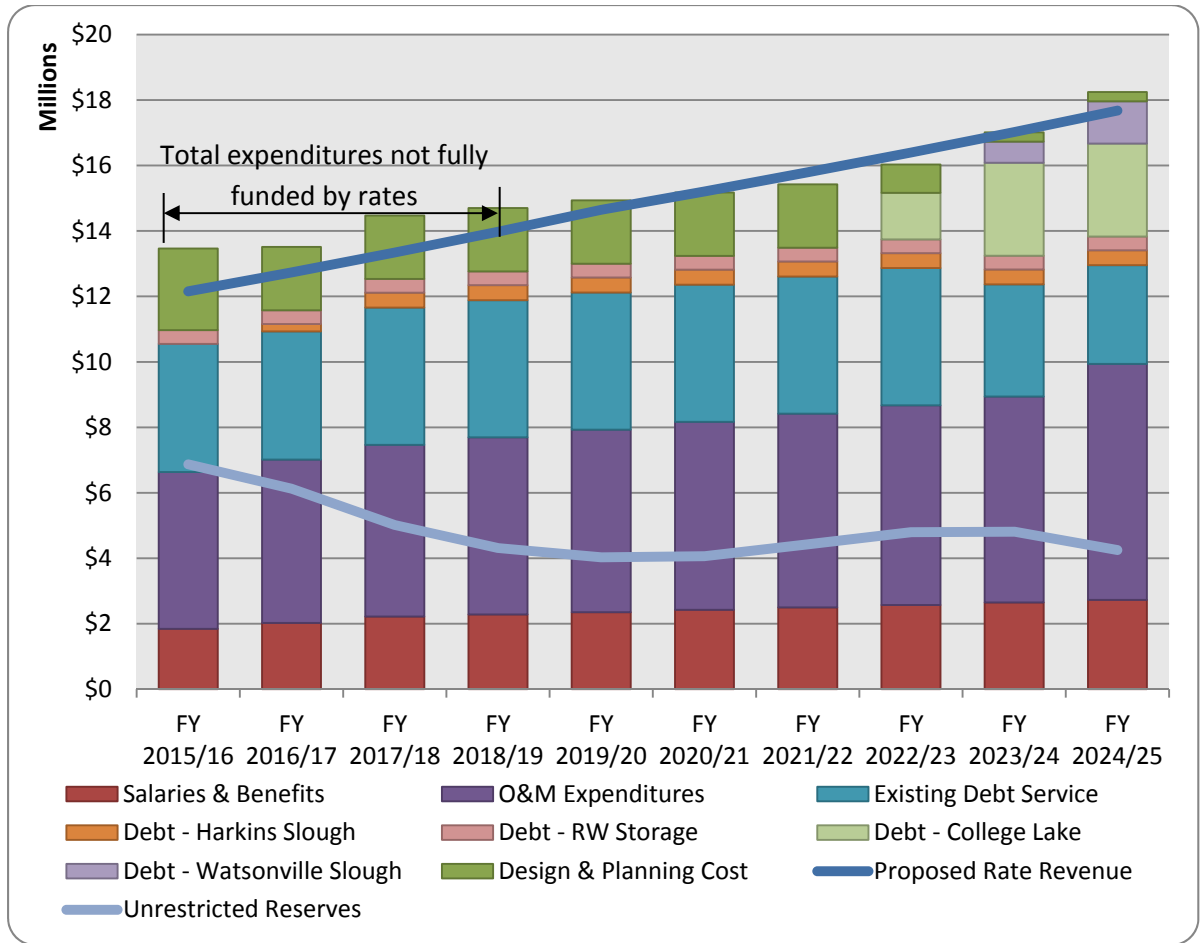


Figure 3-3 Projected Expenditures and Revenues (with Increases)

Table 3-3 Revenues Requirements for FY 2015/16 through FY 2019/20 Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Revenues					
Rate Revenues (prior to rate increases)	\$10,999,072	\$10,889,603	\$10,775,684	\$10,633,319	\$10,471,769
Management Fees	383,206	383,206	383,206	383,206	383,206
Other Revenues	110,543	113,140	115,208	117,324	118,584
Total Revenues	\$11,492,821	\$11,385,949	\$11,274,098	\$11,133,849	\$10,973,559
Expenditures					
Personnel	\$1,841,689	\$2,025,689	\$2,219,072	\$2,285,645	\$2,354,214
Maintenance & Equipment	4,720,653	4,911,870	5,060,547	5,213,931	5,372,175
Debt Service	4,334,521	4,563,521	5,069,462	5,069,462	5,069,462
Additional BMP O&M	73,763	77,138	187,449	194,353	201,529
Total Operating Expenditures	\$10,970,626	\$11,578,218	\$12,536,531	\$12,763,392	\$12,997,381
Annual Rate Increases					
Cash Flow (Before Rate Increases)	\$522,195	(\$192,269)	(\$1,262,432)	(\$1,629,542)	(\$2,023,822)
Recommended Revenue Increase	6%	6%	6%	6%	6%
Revenue from Increase	660,403	1,346,826	2,066,306	2,844,607	3,672,636
Cash Flow (After Rate Increases)	1,182,598	1,154,557	803,873	1,215,065	1,648,815
Less Rate Funded Capital	(\$2,495,725)	(\$1,936,578)	(\$1,936,578)	(\$1,936,578)	(\$1,936,578)
Amount to be Reserve Funded ¹	(\$1,313,127)	(\$782,021)	(\$1,132,705)	(\$721,513)	(\$287,763)
1. Although cash flows are sufficient to cover operations, it is forecasted that the Agency will utilize available reserves to fund forecasted rate funded capital. The AHFC recommended the use of reserves as it minimizes the need for additional or larger revenue increases.					

Additional Considerations

The Agency has a few additional considerations related to proposed revenue increases. As shown in *Figure 3-4*, the forecasted reserves maintain or exceed the existing policy of a minimum 25 percent operating costs. As shown from the decreasing bars, excess reserves (those allotted in the Capital Fund Balance) are used to offset capital-funding shortfalls. These shortfalls are illustrated in *Figure 3-3* by the bars (expenditures) that are in excess of the proposed rate revenue line.

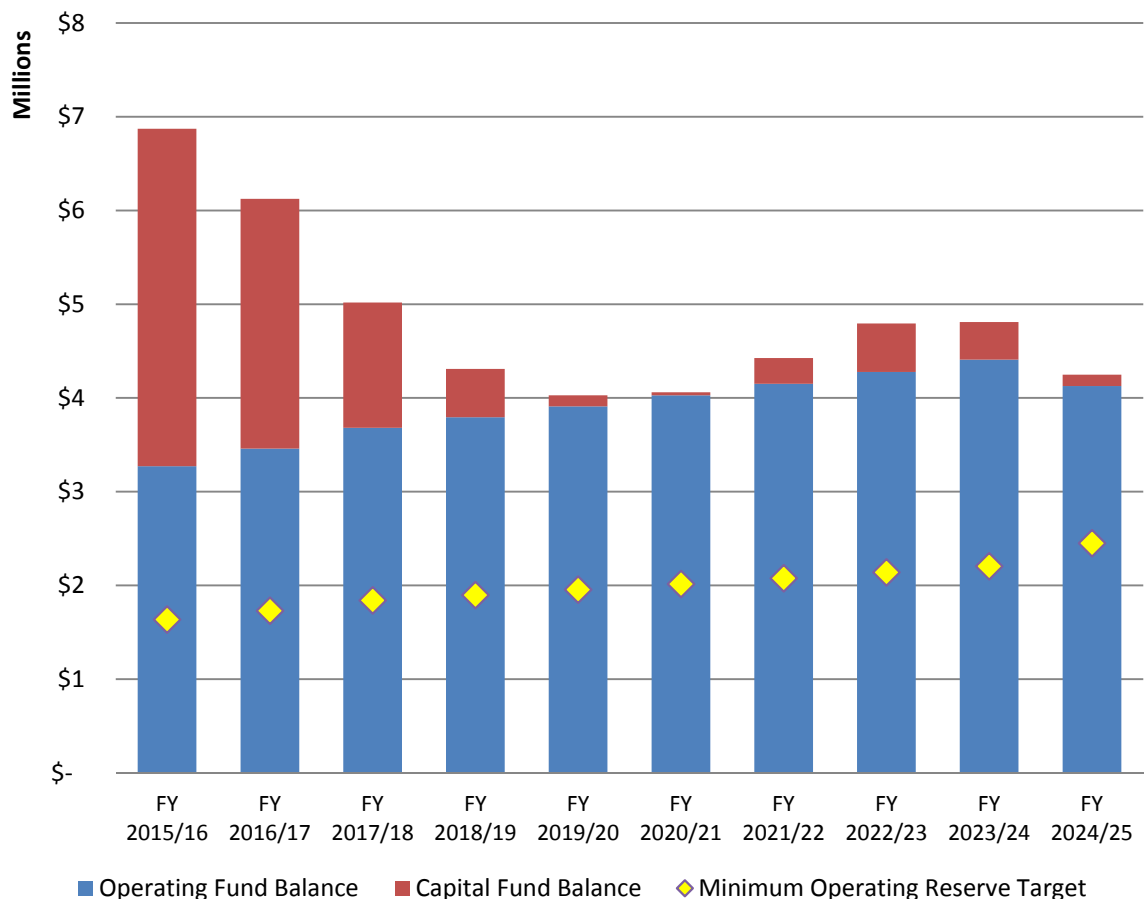


Figure 3-4 Forecasted Reserve Fund Levels (with Increases)

Furthermore, as the Agency is forecasted to issue debt it is crucial that the Agency maintain (or exceed) its required coverage ratio of annual debt service. While the Agency's existing debt requires a coverage factor of 1.25x, the Agency's financial advisor is recommending that the Agency refund its existing debt obligations to reduce its coverage requirement to 1.15x. This would enable the Agency to issue new debt while minimizing the impact to ratepayers. Failure to meet this requirement could result in a damaged credit rating, which could have significant interest rate cost impacts due to the amount of debt expected to be issued in upcoming years.

Figure 3-5 details the debt coverage resulting from the recommended rate increases. Coverage in excess of the target illustrates the Agency's ability to issue debt beyond those forecasted.

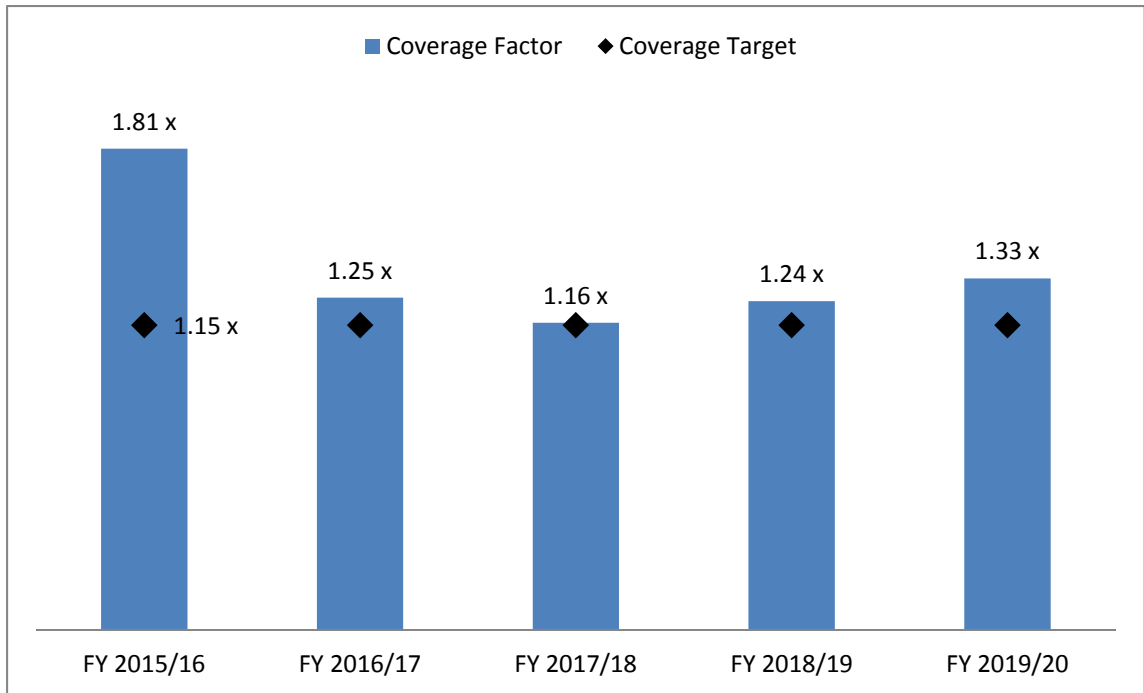


Figure 3-5 Forecasted Debt Coverage Ratios

Cost of Service Analysis

Introduction

The purpose of a cost-of-service analysis is to provide a rational basis for distributing the costs of augmentation and delivered water services (identified in Chapter 3) to each customer class in proportion to the types and levels of services received and the demands they make on these services. The cost of service allocation completed in this study follows the same methodology that was implemented in the 2010 Proposition 218 Service Charge Report and affirmed by the California Court of Appeal in the Pendry-Griffith Decision. Just as in 2010, the methodology is established from the cost of service principles developed by the American Water Works Association (AWWA).

To conduct the cost of service analysis, the Agency identified the unique service functions (functional categories) provided to its water users. The revenue requirements were then allocated to functional cost categories to reflect the different service levels attributable to the water user groups (i.e., metered water users, unmetered water users, and delivered water users). Five functional categories were identified and are shown in Table 4-1 along with a description of the water users receiving those services.

Table 4-1 Cost of Service Functional Categories Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Functional Category⁽¹⁾	Water Users Receiving Service
Supplemental Water Service for Groundwater Users	Property Owners with Metered and Unmetered Wells
Delivered Water Service	Delivered Water Users
Billing	Metered Water Users on a Quarterly Cycle and Unmetered Users on an Annual Cycle
Metering	All Water Users Except for Property Owners with Unmetered Wells
Higher Level of Service for Metered Water Users in DWZ	Irrigated lands and Property Owners within the DWZ with Ability to Immediately Connect to the CDS ⁽²⁾
Notes: (1) Functional categories are the services provided by the Agency to its user classes. (2) Cost associated with the higher level of service for metered water users in the DWZ apply to metered Augmentation Charges for water users in the DWZ.	

Functional Cost Allocation Foundation

While the Agency provides two distinct services—supplemental and delivered water service - there is only one set of common project facilities that are and will be utilized to provide those services. Similar to the 2010 Service Charge Report, the costs associated with the Agency's existing and planned water services are attributable to both groundwater users and delivered water service users.

In allocating shared costs between the two services and the delivered water charge and augmentation charge, the Agency has balanced several regulatory objectives.

1. The property owners outside the DWZ, not only those inside the DWZ, receive an important service from the supplemental water projects. By installing, operating and maintaining the supplemental water project facilities, the Agency protects the entire groundwater basin supply, replaces some of the groundwater pumped by extractors, retards seawater intrusion, reduces overdraft, and avoids more strict groundwater regulation by pumping limits – all of which serve the long-term water supply needs of the well owners throughout the basin. As such, it is appropriate that the well owners throughout the basin pay for their equitable share of the cost of the Agency's supplemental water service for groundwater users.
2. Payment of an augmentation charge on a per acre-foot basis provides an incentive, relative to the consumption of groundwater, for well users to carefully and efficiently manage their use of groundwater. This also furthers the Agency's water conservation efforts, which is the Agency's most economical source of supply.
3. Water users in the DWZ who access and use delivered water should pay an equitable proportionate share of the costs of this service.
4. There is a strong basin-wide interest in maximizing delivered water use (in the DWZ) because greater delivered water use minimizes pumping in that area, enhances groundwater recharge, and retards seawater intrusion.
5. Groundwater pumpers within the DWZ also have improved water reliability. As pumpers within the DWZ have access to delivered water service, there is a distinct service that is immediately available to those users when compared to groundwater users outside the DWZ. As such, and to encourage full deliveries of delivered water, the rate differential between the augmentation rate inside the DWZ and delivered water charge should encourage delivered water usage and not provide a fiscal incentive to pump groundwater instead of using the available delivered water.

Throughout the cost of service analysis, the Agency equitably balanced the allocation of costs in consideration of these factors - recognizing that maximizing the purchase and use of delivered

water protects the overall groundwater basin in furtherance of the Agency's supplemental water objectives, and serves all groundwater users in the basin.

Allocation of Costs to Functional Components

The Agency water system comprises both supplemental and delivered water facilities, which are both necessary to sustain the basin. A detailed functional allocation analysis was prepared by separately identifying the Agency's budget categories (Agency Administration, Special Fund General Administration, Facility Operations, Basin Management Planning, Capital Projects, and Debt Service) and allocating a portion of each item to each functional component based on the specific function provided. This allocation is derived from the Agency's existing factors that were the foundation of the 2010 Service Charge Report.

General & Special Fund Administration

Administration expenditures are largely comprised of salaries and wages, which were allocated directly to the functional categories based upon estimated percent of time the position spent on that function. For example, billing received a percent allocation from the following positions: Administrative Services Manager, Financial Analyst, Administrative Analyst, and Customer Services Representative. Metering received a percent allocation from some of the same positions, but also allocations from the Water Meter Program Coordinator and Water Systems Operators positions.

Facility Operations

Well owners throughout the basin, including those outside the DWZ, receive an important service from the supplemental water projects. By constructing, operating and maintaining the supplemental water project facilities, the Agency protects the groundwater basin water supply, replaces some of the groundwater pumped by extractors, retards seawater intrusion, reduces overdraft, and avoids more strict groundwater regulation by pumping limits – all of which serve the long-term water supply needs of the basin.

In order to allocate Facility Operations costs to groundwater and delivered water users, the Agency analyzed Facility Operations services in terms of providing supplemental supply, reducing groundwater overdraft, and providing delivered water at pressure for irrigation in the DWZ. Facilities Operations costs associated with the delivery of higher pressure water appropriate for irrigation are allocated directly to the delivered water users as the sole recipients of this service. The remaining costs of operating these facilities are allocated on the ratio of the groundwater and delivered water consumption to total consumption in the Pajaro Basin. Groundwater consumption accounts for 89 percent of the total consumption in the Basin and delivered water accounts for 11 percent of Basin consumption. While the same methodology from the 2010 study was utilized, changes to the Agency's budget and water demands caused minor and expected shifts in the overall cost allocation.

Facility Operations also includes expenses to operate the Metering Program. These expenses are allocated directly to Metering, and along with allocations for Salaries and Wages and Administration are recovered from the metered water customers and delivered water customers.

Basin Management Planning

Expenses associated with Basin Management Planning—modeling and monitoring, basin management and basin funding—are allocated to supplemental and delivered water service based on the ratio of supplemental and delivered water consumption to total consumption in the Pajaro Basin (89 percent groundwater and 11 percent delivered water).

Capital Projects

With the development of the Basin Management Plan Update, the Agency has identified nearly \$67 million in projects to be constructed over the next 10 years (Phase 1 projects). As these projects are all designed to address the Agency’s groundwater management concerns, these projects are allocated based on the same methodology of existing capital projects (See Debt Service).

Debt Service

Debt service payments for existing facilities are allocated to supplemental water and delivered water service based on the ratio of groundwater, delivered water, and available capacity inside the DWZ. The addition of available capacity inside the DWZ reflects costs associated with providing excess (available) capacity to groundwater pumpers inside the DWZ. Well owners in the DWZ have immediate access to an alternate delivered water supply. As a result, DWZ well owners receive a higher level of service and therefore are allocated an additional equitable share of the costs of the service, as well as their proportionate share of existing debt service related to remaining capacity in the Delivered Water system. Debt service is allocated to 83 percent to groundwater, 14 percent to delivered water service, and 3 percent to groundwater pumpers within the DWZ.

Table 4-2 details the resulting cost of service allocation percentages for each functional category by each budget item. These functional allocations are described in more detail in Appendix D.

Table 4-2 Allocation to Functional Categories Proposition 218 Service Charge Report Pajaro Valley Water Management Agency						
Functional Category	Supplemental Water Service to Groundwater Water Users	Delivered Water Service	Billing	Metering	Additional Services for Metered Water in DWZ	Total
<u>General Fund Costs</u>						
General Fund	64%	9%	10%	13%	4%	100%
<u>Agency Administration</u>						
Administration	64%	9%	10%	13%	4%	100%
<u>Special Fund Administration</u>						
Special Fund General Admin	64%	9%	10%	13%	4%	100%
Administration	64%	9%	10%	13%	4%	100%
Public Outreach	64%	9%	10%	13%	4%	100%
<u>Facility Operations</u>						
Harkins Slough	62%	38%	0%	0%	0%	100%
Coastal Distribution	76%	24%	0%	0%	0%	100%
Supplemental Wells	89%	11%	0%	0%	0%	100%
Recycled Water Facility	71%	29%	0%	0%	0%	100%
Metering Program	0%	0%	0%	100%	0%	100%

Table 4-2 Allocation to Functional Categories Proposition 218 Service Charge Report Pajaro Valley Water Management Agency						
Functional Category	Supplemental Water Service to Groundwater Water Users	Delivered Water Service	Billing	Metering	Additional Services for Metered Water in DWZ	Total
<u>Basin Management Planning</u>						
Modeling and Monitoring	89%	11%	0%	0%	0%	100%
Basin Management	89%	11%	0%	0%	0%	100%
Basin Funding	89%	11%	0%	0%	0%	100%
<u>Capital Projects</u>						
Capital Projects and Reserves	83%	14%	0%	0%	3%	100%
<u>Debt Service Payments</u>						
SWRCB Note #1 (Harkins Slough)	83%	14%	0%	0%	3%	100%
SWRCB Note #2 (Pipeline and Wells)	83%	14%	0%	0%	3%	100%
DWR (CDS Prop. 13)	83%	14%	0%	0%	3%	100%
1999 COP - Harkins Slough (Principal)	83%	14%	0%	0%	3%	100%
1999 COP - Harkins Slough (Interest)	83%	14%	0%	0%	3%	100%
City of Watsonville (Recycled Water)	83%	14%	0%	0%	3%	100%
Notes:						
1. Details on basis of allocations is provided in Appendix D.						

Table 4-3 summarizes the allocation of net revenue requirements to each functional category for FY 2015/16.

Table 4-3 Net Revenue Requirements Allocated to Functional Categories Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Functional Category	Net Revenue Requirements
Supplemental Water Service to Groundwater Users	\$9,084,336
Delivered Water Service	1,887,060
Billing	101,552
Metering	352,725
Additional Service to Metered Users in DWZ	241,452
FY 2015/16 Revenue Requirement	\$11,667,124

Calculation of Units and Unit Costs

The water users from whom these net revenue requirements are recovered include the metered, unmetered, and delivered water users. Table 4-4 presents a forecasted 10-year average number of service units (acre-feet of water service) associated with the following functional categories:

- Supplemental Water Service to Groundwater Users– Metered and unmetered use excluding delivered water use
- Delivered Water Service – Total delivered water use
- Billing – Total water consumption in the basin (groundwater and delivered water use)
- Metering – Total number of equivalent meters
- Additional Service to Metered Users in DWZ – Metered water use in DWZ

Table 4-4 10-Year Average Units Associated with Each Functional Category Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
	Functional Category				
	Supplemental Water Service to Groundwater Water Users (AF/year)	Delivered Water Service (AF/Year)	Billing (AF/Year)	Metering (Equivalent Meters)	Additional Services for Supplemental Water in DWZ (AF/Year)
Metered ⁽¹⁾	46,180	0	46,180	12,300	4,010
Unmetered ^(1,2)	910	0	910	0	0
Delivered Water ^(1,3)	0	6,000	6,000	1,500	0
Total	47,090	6,000	53,090	13,800	4,010
Notes:					
(1) Excludes users east of the San Andreas Fault that are not hydrologically connected to the Pajaro Basin.					
(2) The number of accounts billed equals the number of rural residential well owners within the Agency.					
(3) The delivered water consumption is based on Agency projections. .					

Billing costs are typically allocated to user classes by number of bills. For the following reasons, the Agency determined that an allocation based on total water consumption in the basin was more fair and accurate. Unmetered water users represent less than 3 percent of the water consumption in the basin and are only billed once per year based on estimated consumption. A greater level of billing service is provided to metered and delivered water customers whose bills are prepared using actual consumption data and who are billed quarterly. The larger monetary value of the metered and delivered water user bills also results in increased customer service needs. Therefore, total water consumption was used as the unit of measure for allocating billing costs.

Metering units are the number of equivalent meters based on the cost of a 1-inch meter as shown in Table 4-5.

Table 4-5 Meter Equivalents Proposition 218 Service Charge Report Pajaro Valley Water Management Agency			
Meter Size	AWWA Ratio	Adjusted to 1"⁽¹⁾	Equivalent Meters
5/8"	1.0	0.7	0
3/4"	1.1	0.8	0
1"	1.4	1.0	11
1 ½"	1.8	1.3	0
2"	2.9	2.1	114
3"	11.0	7.9	607
4"	14.0	10.0	1,972
6"	21.0	15.0	4,664
8"	29.0	20.7	2,428
10"	49.3	35.2	1,975
14"	88.1	62.9	63
Total			11,833
Note: 1. AWWA M26 equivalency ratios adjusted to 1" meter and extrapolated for 10" and 14" meters.			

The number of units of consumption shown for the DWZ reflects consumption by metered water users within the DWZ with the ability to immediately connect to the delivered water system as identified through the Agency GIS database.

Unit costs for each of these functional categories were developed by dividing the total cost allocated to functional category by the total number of units for that category, including those for metered, unmetered, and delivered water users. The unit costs for each functional category are presented in Table 4-6. Table 4-6 also presents the cost of service for each water user category. The table also presents the cost of service for the groundwater extractors and delivered water users in the DWZ.

Table 4-6 Unit Cost of Service Proposition 218 Service Charge Report Pajaro Valley Water Management Agency						
	Revenue Requirement FY 2016	Supplemental Water Service (AF/Year)	Delivered Water (AF/Year)	Billing (AF/Year)	Metering (Equivalent Meter)	Additional Services for Metered Water in DWZ (AF/Year)
Total Allocated Cost		\$9,084,336	\$1,887,060	\$101,552	\$352,725	\$241,452
Units of Service		47,090	6,000	53,090	13,800	4,010
Metered						
Units of Service		46,180	-	46,180	12,300	-
Allocated Cost	\$9,311,504	\$8,908,784	\$ -	\$88,335	\$314,385	\$ -
Additional Services in DWZ						
Units of Service		-	-	-	-	4,010
Allocated Cost	\$ 241,452	\$ -	\$ -	\$ -	\$ -	\$241,452
Unmetered						
Units of Service ⁽¹⁾		910	-	910	-	-
Allocated Cost	\$ 177,293	\$ 175,552	\$ -	\$1,741	\$ -	\$ -
Delivered Water						
Units of Service ⁽²⁾		-	6,000	6,000	1,500	-
Allocated Cost	\$1,936,877	\$ -	\$1,887,060	\$11,477	\$38,340	\$ -
Total	\$11,667,124	\$9,084,336	\$1,887,060	\$101,552	\$352,725	\$241,452
Notes:						
(1) The number of accounts billed equals the number of rural residential well owners within the Agency boundary.						
(2) The delivered water consumption and number of accounts based on forecasted 10-year average.						

Review of Rate Alternatives

Introduction

The Water rate design analysis determines how service costs are recovered from each customer through the allocation of specified water rates. The focus of this process is to achieve full cost recovery and substantiate that customers are paying their fair and proportionate share of system costs.

Throughout the rate setting process, the AHFC primarily focused on rate design methodology, final rates, ratepayer impacts and other key issues. Phase 1 of the process – Cost Recovery Mechanisms – was dedicated to the evaluation of available rate structure design methodologies. Phase II – Calculation and Methodology – focused on the detailed calculated of rates and charges based on the AHFC's Phase 1 recommendations.

The AHFC convened 14 meetings to complete its review of rate alternatives, and concluded its work with the following recommendations:

1. Continue using the Agency's existing uniform rate structure for the 2014 rate setting process.
2. Advise the Agency Board to convene a committee within 18 months to review technical questions regarding tiered rates.
3. While revenue adjustments are necessary to continue operations and funding of the BMP, rate increases should be minimized and smoothed over the proposed 5-year period of rate increases.
4. Carefully evaluate the proper costs allocation for the augmentation charge inside the DWZ consistent with the levels of service to the different user classes.

During Phase I of the rate setting process, the AHFC reviewed numerous alternatives for the recovery of Agency expenses. This chapter summarizes the rate recovery alternatives and presents a comparison of these alternatives.

Ad Hoc Funding Committee Process

The Agency establish an Ad Hoc Funding Committee to help guide the development of the cost of service study, evaluate new rate structures, and serve as advisors to the Agency Board. The purpose of the Committee was to develop a recommended rate structure that supports the implementation of the BMP Update and the Agency's work to mitigate long-term groundwater overdraft, stop seawater intrusion, and protect water quality.

In order to allow all of the stakeholders to participate equally and to ensure a balanced and representative cross-section of the Pajaro Valley community, the Agency undertook a committee application and selection process. The process produced a Committee consisting of 15-appointed members. Table 5-1 presents the AHFC members.

Table 5-1 Ad Hoc Funding Committee Members Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Committee Member	Representative Entity
Dave Cavanaugh (Co-Chair)	Pajaro Valley Water Management Agency
Amy Newell	Pajaro Valley Water Management Agency
Paul Faurot	Pajaro Valley Water Management Agency
Kirk Schmidt (Co-Chair)	Santa Cruz County Farm Bureau
Skip Fehr	Water Mutual
Frank Capurro	Coastal Landowner
John E. Eiskamp	Inland Water User
Stuart Kitayama	Coastal Water User
Dick Piexoto	Inland Land Owner
Tom Karn	Rural Resident
Stephen Rider	Industrial Water User
Chuck Allen	At-Large
Steve Palmisano	City of Watsonville
John Martinelli	Landowner Group
Bill Lipe	Monterey County Farm Bureau

In order to garner a clearer understanding of various rate setting methodologies and potential changes, the AHFC reviewed numerous financial models to provide illustrative impacts to existing rates and customer bills.

Ad Hoc Funding Committee Alternatives

Consistent with the 2010 rate setting process, the AHFC revisited six rate and cost recovery alternatives and five distinct consumptive-based rate structures. In each of these structures, the customer is billed for the amount of acre-feet pumped or delivered. Alternatively, the AHFC reviewed a land based assessment structure that would generate revenue on a benefit to land basis, rather than on a cost of service basis.

The AHFC developed the following evaluation criteria to compare the alternative rate structures:

- **Technical Feasibility:** The ability of the Agency to perform the technical functions required to efficiently and accurately calculate service charges based on the rate alternative, including the ability to produce and maintain required service data.
- **Legal Consideration:** The vulnerability of the rate alternative to legal challenge, and the ability of the Agency to defend the alternative against potential legal challenges.
- **Revenue Stability:** The ability of the rate alternative to generate predictable revenues under various demand forecasts.
- **Ease of Implementation:** The ability of the Agency to efficiently and accurately administer the rate structuring.
- **Encourages Water Conservation:** The ability of the rate alternative to achieve Agency conservation objectives.

The AHFC used these criteria to rank each alternative, relative to each other. In addition, the AHFC identified the following objectives for the preferred rate recovery strategy:

- Continue to recognize zones of service to ensure equity in contribution to the need for supplemental water projects and service received from these projects.
- Encourage water conservation.
- Keep the approach simple and easy to implement.
- Recognize the legal analysis and support provided by the Pendry-Griffith Decision.

Uniform Rate Structure

A uniform rate structure provides a single rate that is charged for each acre-foot pumped or delivered. This consumptive-based charge mirrors the Agency's existing rate structure, consisting of consumptive charges for groundwater and delivered water users. The cost per unit of water stays constant (uniform) regardless of total water delivered or pumped.

General Considerations

The Agency's existing uniform rate structure is easy to implement and understand. A uniform rate also sends customers a usage-based price signal to encourage conservation. Although the unit cost is constant, customer bills increase with increased water demand. The uniform rate values each increment of water demand equally, in contrast to tiered rate structures where rates increase as demand increases.

Recommendation

Given available data and timing constraints, the AHFC recommended the continued use of a uniform rate structure. Although other options were considered, the existing rate structure provides a firm legal standing, adequately addresses conservation objectives, and can be readily implemented.

Tiered Rates (Based on Acreage)

A tiered rate (or increasing block rate) design charges increasing rates for increasing consumption. This design requires metering for all users and the Agency would need to define the consumption blocks over which rates increase. Given the diversity of properties in the Basin, the consumption blocks would be designed on a per acre basis, as to not penalize larger properties. This creates an implementation challenge as a well may serve varying parcels and different growers/crops over a season, making calculation of tiers (acre foot per acre of water use) difficult.

General Considerations

Properly designed, tiered rates can equitably recover the Agency's cost of service while sending strong conservation-oriented price signals to the customer. However, implementing the tiered structure is more technically, legally, and administratively complex compared to the uniform rate structure.

Recommendation

The AHFC was interested in pursuing tiered rates; however, understood that significant hurdles were in place. As a result, the AHFC recommended that the Agency develop a formal plan within 18 months that includes staff allocation such that next time a committee is formed to assess rates, the technical and legal questions regarding tiered rates can be addressed.

Recommended Rates and Charges

Introduction

In addition to achieving cost recovery and ratepayer equity objectives, several rate alternatives were analyzed and evaluated by the AHFC to evaluate the impact of price on water demands and to encourage further water conservation. Based on available information, the Agency analyzed consumption and billing records in order to best understand customer demands, potential of additional conservation, and expected price sensitivities. The Agency's findings and recommendations for the Agency's delivered water and augmentation charges are detailed within this chapter.

Rate Design

The water rate design analysis determined how the costs are recovered from each customer class through specified water rates. The focus of this process was to achieve full cost recovery and substantiate that customers are paying their fair and proportionate share of system costs. The Agency's existing rate structure consists of various consumptive based rates based on the service provided and applicable service zone.

As part of this analysis, the preferred water rate structure was reviewed to determine its current efficacy in addressing the desired objectives identified throughout the rate study process. The Agency and AHFC evaluated the preferred rate structure based on changing demands, legal guidelines, and regulatory changes and made a recommendation to pursue uniform rates. In May 2014, the Agency Board affirmed the AHFC's rate structure recommendation.

Throughout Phase II of the rate-setting process, the Agency and AHFC analyzed various uniform rate structure adjustments in order to recover forecasted revenues and achieve the Agency's policy objectives. Table 6-1 summarizes the current water rates and charges to the various customer classes.

Table 6-1 Existing Water Rates and Charges Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
User Group	Existing Rate (\$/AF)
Augmentation Charge, Metered Users - Outside DWZ	\$179
Augmentation Charge, Metered Users - Inside DWZ	215
Augmentation Charge, Unmetered (Rural Residential)	172
Delivered Water Charge	338

Selecting Rate Structures

Once costs have been equitably allocated to each functional component, the Agency and AHFC have some flexibility in designing the rate structure in order to proportionally allocate the costs of service. In determining the appropriate rate level and structure, the Agency analyzed various uniform rate design approaches and the corresponding customer and Agency implications. Beyond the identified study objectives, the following additional objectives were considered and discussed at length by Agency staff and the AHFC:

- Clear and understandable
- Encourage water conservation and water use efficiency
- Follow cost of service principles
- Provide revenue stability
- Affordable
- Comply with legal and regulatory requirements
- Abide by policy objectives

These numerous, and sometimes competing design objectives added to the complexity of the rate design process. No single design or approach meets all objectives equally, nor were all objectives or elements valued the same by the Agency or its customers. The competing objectives were discussed and evaluated at length throughout the financial and rate study process. The primary objective was to structure rates consistent with the cost of service and proportionality requirements of Proposition 218.

Following extensive discussion and analysis, the AHFC recommended (1) rate smoothing (through use of reserves) and (2) to increase costs allotted to Inside DWZ pumpers (by recognizing the additional service provided by the readily available alternative supply). Consistent with the existing rates, the AHFC endorsed the continued delineation of the DWZ (i.e., the coastal area within the Pajaro Basin with turnouts and immediate access to delivered water) and the Non-DWZ (i.e., the remaining area within the Pajaro Basin without immediate access to delivered water).

Augmentation Charges

The Agency developed rate revenue estimates based on the proposed cost-of-service rates for metered and unmetered groundwater users, and total consumption by each water user group. The augmentation charge for the metered water users outside the DWZ was calculated by dividing the cost of service by the estimated consumption for metered water users for the test year. Table 6-2 presents the development of the augmentation charge for metered groundwater extractors outside the DWZ. Appendix E presents detailed calculations.

Table 6-2 Metered User Augmentation Charge – Outside DWZ Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Cost of Metered Water Users Service (FY 2016)	\$9,311,500
Metered Water User Consumption (Forecasted FY 2016 AF)	48,340
Metered Rate (\$ per AF)	\$193

The augmentation charge for the metered water users inside the DWZ was calculated by adding the charge associated with additional service to metered groundwater users in the DWZ. The metered groundwater users within the DWZ will be levied an additional charge for the availability of the alternate delivered water supply and the increased availability of groundwater resulting from groundwater offsets in the zone that result from the use of delivered water. The cost for the availability of an alternate water supply was developed by dividing the cost of service for the DWZ by the consumption of metered groundwater in the DWZ.

Table 6-3 presents the development of the augmentation charge for metered groundwater extractors within the DWZ.

Table 6-3 Metered User Augmentation Charge – Inside DWZ Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Cost of Metered Water Users Service (FY 2016)	\$9,311,500
Metered Water User Consumption (Forecasted FY 2016 AF)	48,340
Metered Rate (\$ per AF)	\$193
Cost of Additional Service for Metered Water Users in DWZ (FY 2015)	\$241,500
Metered Water Consumption DWZ (Forecasted FY 2016 AF)	4,442
Additional Supplemental Water Service in DWZ Rate (\$ per AF)	\$54
Total Metered Augmentation Charge – Inside DWZ(\$/AF)	\$247

The augmentation charge for the unmetered groundwater extractors was calculated by dividing the cost of service by the estimated consumption for unmetered water users for the test year. Table 6-

4 presents the development of the augmentation charge for unmetered water users. Appendix E presents detailed calculations.

Table 6-4 Unmetered Water User Augmentation Charge Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Cost of Unmetered Water Users Service (FY 2015)	\$177,300
Unmetered Water User Consumption (Forecasted FY 2016 AF) ⁽¹⁾	951
Unmetered Rate (\$ per AF)	\$186
Note: (1) Total unmetered water user consumption estimated by multiplying the number of unmetered (rural residential) parcels within the Agency boundary by the estimated consumption for unmetered water users.	

Delivered Water Charges

Using the cost of service for delivered water users and the total forecast consumption by this water user group, the cost of service per acre-foot was developed. Table 6-5 presents the development of the delivered water charge. Appendix E presents detailed calculations.

Table 6-5 Delivered Water Charge Proposition 218 Service Charge Report Pajaro Valley Water Management Agency	
Cost of Delivered Water Service (FY 2015)	\$1,936,900
Delivered Water Consumption (Forecasted FY 2016 AF) ⁽¹⁾	5,500
Delivered Water Rate (\$ per AF)	\$352
Note: 1. The Agency is not forecasting full deliveries of recycled water (6,000 AF) until FY 2018.	

Impact of Water Demand Volatility on Rates

An increase in the augmentation charges combined with the Agency's focus on continued conservation efforts may result in a decrease in metered groundwater consumption. Such a decrease would result in generation of less than required revenues, and thus a higher rate adjustment would be necessary in the future to recover the costs of service. The forecasted consumption analysis and proposed rates expect an annual conservation rate of 1 percent. While it is difficult to separate the effects of weather, crop changes, and other influences from the cost pressures, water demands will be compared to the BMP conservation baseline to benchmark progress in conservation.

In order to estimate the potential impact of future conservation on the cost of service rate adjustments, the Agency developed a high-level sensitivity analysis that evaluated the revenue impacts due to various water consumption levels.

Table 6-6 presents the analyzed demands reviewed as part of the revenue sensitivity. The baseline revenue forecast incorporates 1 percent annual conservation.

Table 6-6 Forecasted Demand Sensitivity Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
Revenue Sensitivity	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Baseline Revenue	55,000	54,600	54,200	53,800	53,400
Initial Year Reduction (5%)	53,400	53,400	53,400	53,400	53,400
Double Conservation (2%/yr)	54,400	53,700	53,000	52,000	51,100
Another Drought Year	60,500	54,600	54,200	53,800	53,400

Table 6-7 details the revenue impacts of these demand levels over a five-year financial forecast. The calculated revenue impact is estimated to range between \$0.7 million and \$1.5 million over five-years, if demand levels fall beyond what is expected (due to greater conservation or otherwise). Alternatively, should the Agency realize another year of increased demands (similar to FY 2015), it could generate upwards of \$1.7 million above the five-year financial forecast.

It should be noted, that continued years of increased demands is detrimental to the balance of the basin. Although the Agency would generate excess revenues, these monies, could be used to further fund Phase 1 projects or accelerate planned Phase 2 BMP projects to counteract further basin overdraft.

The Agency will continue to review rates on a regular basis to maintain system revenues such that it proportionately and adequately recovers system expenditures.

Table 6-7 Rate Adjustments Required With Increased Conservation Proposition 218 Service Charge Report Pajaro Valley Water Management Agency						
Revenue Sensitivity	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Five-Year Impact
Baseline Revenue	\$11,667,000	\$12,243,000	\$12,848,000	\$13,483,000	\$14,149,000	
Impact of Initial Year Reduction (5%)	\$(251,000)	\$(223,000)	\$(184,000)	\$(90,000)	\$-	\$ (748,000)
Impact of Double Conservation (2%/yr)	\$(117,000)	\$(165,000)	\$(262,000)	\$(395,000)	\$(552,000)	\$(1,491,000)
Impact of Another Drought Year	\$1,167,000	\$-	\$-	\$-	\$-	\$1,167,000

Rate Smoothing

The AHFC reviewed the initial development of the cost of service rates, and reached a consensus conclusion that the rate increases, while fair and equitable, were too quick and may cause rate-shock. The AHFC sought a more gradual approach. The AHFC evaluated the revenue impact associated with rate smoothing over the next five years to limit the initial impact of the proposed increases. This smoothing approach produced less revenue than the financial forecast required in the first two years of the five-year period, and recovered those shortfalls in years 4 and 5. As forecasted, this approach did not impact total revenues collected over the five-year period. Detailed rate calculations are provided in Appendix F. Table 6-8 presents the results of rate smoothing on forecasted revenues.

Table 6-8 Impact of Rate Smoothing Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
Forecasted Revenues	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Required Revenue (No Smoothing)	\$11,667,124	\$12,243,480	\$12,848,308	\$ 13,483,015	\$14,149,076
Revenue with Smoothing	\$11,504,726	\$12,168,122	\$12,871,701	\$ 13,569,818	\$14,326,567
Difference Surplus / (Shortfall)	\$ (162,399)	\$(75,358)	\$23,393	\$ 86,803	\$ 177,491

The AHFC evaluated the revenue and rate impacts of the rate smoothing approach and found that it produced smaller and constant increases over the next five-years. The AHFC recommended that the cost-of-service rates defined in Table 6-2 through Table 6-5 be adjusted to implement rate smoothing. The Agency's existing reserves will be used to fund the short-term revenue shortfalls in years 1-2. The forecasted surpluses in years 3-5 will be used to rebuild those reserves. Under this approach, each user category's rates are lower in the first two years than the cost of service rates defined above; however, they are higher in the latter three. At the end of the five-year period, the rates are forecasted to be revenue neutral for both revenue collected and between user categories.

Rate Summary

The Agency revenues and expenses were evaluated to determine the net revenue requirements to be recovered from rates. A cost of service analysis was conducted to allocate revenue requirements to the Agency's functional cost categories to reflect the different service levels received by the water user groups (i.e., metered, unmetered, and delivered water). Finally, the functional unit costs

developed within the analysis were used to calculate updated augmentation charges based on the rate structure recommended by the AHFC.

Table 6-9 summarizes the existing and calculated cost of service rates (with rate smoothing) and average annual percent increase. While a rate per acre-foot is calculated, unmetered water users (rural residential) are charged for an estimated annual consumption of 0.5 AF for each parcel connected to an unmetered well.

Table 6-9 Proposed Rate Adjustment Proposition 218 Service Charge Report Pajaro Valley Water Management Agency			
User Group	Existing FY 2015 Rate (\$/AF)	Proposed FY 2016 Rate ⁽¹⁾ (\$/AF)	5-year Average Increase ⁽²⁾
Augmentation Charge, Metered Users - Outside DWZ	\$179	\$191	6.6%
Augmentation Charge, Metered Users - Inside DWZ	215	235	9.5%
Augmentation Charge, Unmetered (Rural Residential)	172	183	6.0%
Delivered Water Charge	338	348	3.0%
Notes: 1. Cost of service rates presented above are adjusted for rate smoothing and include an assumption for 1% annual conservation. 2. Year to year increases may differ due on rounding.			

The calculated rates reflect the revenue requirements (with rate smoothing), cost of service analysis and assumptions detailed throughout this report. The proposed rates, detailed in Table 6-10, will recover the forecasted revenue requirements associated with providing supplemental water to help reduce and prevent long-term over-draft and water quality degradation.

Following a successful Proposition 218 process, well owners and delivered water users would be charged the rates presented in Table 6-10 for each acre-foot of consumption.

Following the AHFC recommendation, the revenue increases have been smoothed over five-years to minimize initial rate increase. The proposed rates have already been escalated for forecasted inflation, such that the rates will not be adjusted annually based on inflation (CPI) as was the previous practice. The percent increase (above inflation) represents the increase necessary to fund the forecasted BMP and to offset revenue loss due to conservation.

Table 6-10 Proposed Five-Year Rate Adjustments Proposition 218 Service Charge Report Pajaro Valley Water Management Agency					
User Group	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Augmentation Charge, Metered Users - Outside DWZ	\$191	\$203	\$217	\$231	\$246
Augmentation Charge, Metered Users - Inside DWZ	\$235	\$258	\$282	\$309	\$338
Augmentation Charge, Unmetered (Rural Residential)	\$183	\$193	\$205	\$217	\$230
Delivered Water Charge	\$348	\$359	\$369	\$381	\$392
Notes:					

APPENDIX A – UNMETERED USER CONSUMPTION ESTIMATE

The water suppliers and calculations details in the tables below are used as a proxy to estimate unmetered user consumption in the PVWMA service area.

Proxy Connections			
Water Supplier	Number of Connections	Total Acreage	Acreage per Parcel
Aromas Water District	905	2,830	3.13
Central Water District	812	3,200	3.94
San Andreas Mutual Water Company	135	730	5.41
Total Number Connections	1,852	6,760	3.65

Proxy Usage								
Water Supplier	2009	2010	2011	2012	2013	Total	5-year Average	Volume per connection
Aromas Water District	389	345	326	338	379	1,777	355	0.39
Central Water District	593	501	480	536	585	2,695	539	0.66
San Andreas Mutual Water Company	78	68	62	70	73	350	70	0.52 ¹¹
Total (AF)	1,060	913	868	944	1,037	4,822	964	0.52

¹¹ SAMWC provided an email stating average volume per connection is actually 0.45 AF. As the annual figures were not provided, the table was left as is. Should the 0.45 AF figure be utilized, the new total volume per connection would average to 0.50 AF and remain in-line with the Agency's forecast.

APPENDIX B – GRANT FUNDS AWARDED AND RECEIVED

Grant Funding Awarded Proposition 218 Service Charge Report Pajaro Valley Water Management Agency			
	Facility	Grant Amount	Funds Received
US Bureau of Reclamation Title XVI Grant	Recycled Water Facility	\$20.0 M	\$18.2 M ⁽¹⁾
Department of Water Resources (Proposition 13)	Coastal Distribution System	\$16.2 M	\$16.2 M
Department of Water Resources (Proposition 50)	Coastal Distribution System	\$4.7 M	\$4.7 M
Department of Water Resources (Proposition 50)	Recycled Water Facility	\$6.8 M	\$6.8 M
Department of Water Resources (Proposition 84)	Recycled Water Facility	\$0.9 M	\$0.9 M ⁽²⁾
	Total	\$48.6 M	\$46.7 M
Note: (1) Due to the current financial environment, the timing for disbursement of appropriated funds is unknown. (2) Reimbursements are projected to be received following construction in the summer of 2015.			

APPENDIX C – OUTSTANDING DEBT

Outstanding Debt Proposition 218 Service Charge Report Pajaro Valley Water Management Agency		
	Loan Amount (\$ million)	Retirement Date
State Water Resources Control Board Loan	\$11.65	December 2022
State Water Resources Control Board Loan	6.21	November 2023
Department of Water Resources Loan	3.51	September 2027
1999 Certificate of Participation	19.72	March 2029
City of Watsonville Loan	27.35	July 2039
Total	\$72.18	

APPENDIX D – REVENUE REQUIREMENTS

Revenues		FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
		Actual (Post-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)
Augmentation Charge	Escalator						
Augmentation Charge	Metered Water Demand	\$ 9,495,500	\$ 9,400,545	\$ 9,864,932	\$ 10,352,260	\$ 10,863,661	\$ 11,400,326
Total Augmentation Charge		\$ 9,495,500	\$ 9,400,545	\$ 9,864,932	\$ 10,352,260	\$ 10,863,661	\$ 11,400,326
Delivered Water Charge							
Water Sales	Metered Water Demand	\$ 1,622,400	\$ 1,606,176	\$ 1,685,521	\$ 1,768,786	\$ 1,856,164	\$ 1,947,858
Total Delivered Water Charge		\$ 1,622,400	\$ 1,606,176	\$ 1,685,521	\$ 1,768,786	\$ 1,856,164	\$ 1,947,858
Management Fees							
Management Fees	No Annual Increase	\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206
Total Management Fees		\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206	\$ 383,206
Other Revenues							
Interest Income	Interest Income	\$ 20,000	\$ 45,894	\$ 49,089	\$ 51,890	\$ 55,236	\$ 56,914
Other Income	No Annual Increase	57,000	57,000	57,000	57,000	57,000	57,000
Total Other Revenues		\$ 77,000	\$ 102,894	\$ 106,089	\$ 108,890	\$ 112,236	\$ 113,914
Total Revenues		\$ 11,578,106	\$ 11,492,821	\$ 12,039,748	\$ 12,613,141	\$ 13,215,267	\$ 13,845,304

Expenditures

		FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
		Actual (Post-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)	Projection (Pre-Rate Increase)
Personnel	Escalator						
Salaries and Wages	Labor Inflation	\$ 1,666,688	\$ 1,716,689	\$ 1,768,189	\$ 1,821,235	\$ 1,875,872	\$ 1,932,148
Additional Staffing	Labor Inflation	-	125,000	257,500	397,838	409,773	422,066
Total Personnel Costs		\$ 1,666,688	\$ 1,841,689	\$ 2,025,689	\$ 2,219,072	\$ 2,285,645	\$ 2,354,214

Maintenance & Equipment

Conferences-Seminars-Meetings-Training	General Inflation	\$ 25,500	\$ 26,265	\$ 27,053	\$ 27,865	\$ 28,700	\$ 29,561
Travel - Mileage - Meals - Lodging	General Inflation	34,000	35,020	36,071	37,153	38,267	39,415
Bank Charges/Bond Fees	General Inflation	38,500	39,655	40,845	42,070	43,332	44,632
Insurance	General Inflation	33,500	34,505	35,540	36,606	37,705	38,836
Taxes	General Inflation	20,000	20,600	21,218	21,855	22,510	23,185
Legal Notices & Ads	General Inflation	12,750	13,133	13,526	13,932	14,350	14,781
Dues & Subscription	General Inflation	43,750	45,063	46,414	47,807	49,241	50,718
Office Expense	General Inflation	21,500	22,145	22,809	23,494	24,198	24,924
Postage	General Inflation	11,500	11,845	12,200	12,566	12,943	13,332
Printing	General Inflation	12,500	12,875	13,261	13,659	14,069	14,491
City Connection Water Charges	Delivered Water Increase	300,000	315,000	330,750	340,673	350,893	361,419
Utilities	Utilities Inflation	223,200	234,360	246,078	258,382	271,301	284,866
Telephone/Communications	General Inflation	17,700	18,231	18,778	19,341	19,922	20,519
Office Equipment Leases	General Inflation	15,800	16,274	16,762	17,265	17,783	18,317
Field Supplies	General Inflation	29,000	29,870	30,766	31,689	32,640	33,619
Elections	General Inflation	5,000	5,150	5,305	5,464	5,628	5,796
LAFCO District Fees	General Inflation	8,000	8,240	8,487	8,742	9,004	9,274
Collection Fee/Bad Debt	General Inflation	98,776	101,739	104,791	107,935	111,173	114,508

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Professional Services	General Inflation	924,600	952,338	980,908	1,010,335	1,040,645	1,071,865
Licensed Contractors	General Inflation	53,000	54,590	56,228	57,915	59,652	61,442
Vehicle Purchase	General Inflation	38,000	39,140	40,314	41,524	42,769	44,052
Vehicle Maintenance	General Inflation	20,000	20,600	21,218	21,855	22,510	23,185
Meters	General Inflation	20,000	20,600	21,218	21,855	22,510	23,185
Meter Contractor	General Inflation	10,000	10,300	10,609	10,927	11,255	11,593
Water Sampling	General Inflation	108,000	111,240	114,577	118,015	121,555	125,202
Leases	General Inflation	18,889	19,456	20,039	20,641	21,260	21,898
Legal Services	General Inflation	145,500	149,865	154,361	158,992	163,762	168,674
Building Maintenance	General Inflation	44,500	45,835	47,210	48,626	50,085	51,588
Information Technology	General Inflation	74,000	76,220	78,507	80,862	83,288	85,786
Conservation	No Annual Increase	120,000	120,000	120,000	120,000	120,000	120,000
COW Reimbursement O&M	Delivered Water Increase	2,010,000	2,110,500	2,216,025	2,282,506	2,350,981	2,421,510
BMP Related O&M	-- Calculated --	-	15,656	16,126	123,385	127,087	130,900
BMP Related Power Costs	-- Calculated --	-	58,107	61,013	64,063	67,266	70,630

Total Maintenance & Equipment Costs	\$	4,537,465	\$	4,794,416	\$	4,989,008	\$	5,247,996	\$	5,408,285	\$	5,573,705
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Total Expenditures	\$	6,204,153	\$	6,636,105	\$	7,014,697	\$	7,467,069	\$	7,693,930	\$	7,927,919
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Total Surplus (Deficit)	\$	5,373,953	\$	4,856,716	\$	5,025,051	\$	5,146,072	\$	5,521,337	\$	5,917,386
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APPENDIX E –FUNCTIONAL COST ALLOCATION

BMP CAPITAL PROJECTS			Ground Water Users	Delivered Water Service	Billing	Metering	Additional DWZ	As All Others	Notes
Total Cost									
Murphy Crossing with Recharge Basins	\$ 8,700,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
Watsonville Slough and North Dunes Recharge Basin	14,700,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	
College Lake with Inland Pipeline to CDS	31,500,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Harkins Slough Recharge Facilities Upgrades	5,800,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Increased Recycled Water Storage	6,240,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	
BMP Capital Sub Total	\$ 66,940,000		\$ 55,484,844	\$ 9,523,241	\$ -	\$ -	\$ 1,931,915	\$ -	
Reallocation of "As All Others"			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Allocation	\$ 66,940,000		\$ 55,484,844	\$ 9,523,241	\$ -	\$ -	\$ 1,931,915	\$ -	
Percentage Allocation	100.0%		82.9%	14.2%	0.0%	0.0%	2.9%	0.0%	

EXISTING DEBT			Ground Water Users	Delivered Water Service	Billing	Metering	Additional DWZ	As All Others	Notes
Total Cost									
SWRCB Note#1 (Harkins Slough)	835,093	Basin Consumption	89%	11%	0%	0%	0%	0%	Allocated based on the ratio of basin consumption
SWRCB Note#2 (Pipeline and Wells)	453,316	Supplemental Wells	89%	11%	0%	0%	0%	0%	Cost to pump water at pressure is allocated 100 percent to delivered water users.
DWR (Prop. 13)	274,968	Prop 13 Debt	0%	60%	0%	0%	40%	0%	Remaining Cost based on the ratio of basin consumption
1999 COP (Bond Principal)	661,678	Basin Consumption	89%	11%	0%	0%	0%	0%	Cost are allocated based on a ratio of delivered water and metered water user consumption in the delivered water zone
1999 COP (Bond Interest)	847,317	Basin Consumption	89%	11%	0%	0%	0%	0%	Allocated based on the ratio of basin consumption
City of Watsonville (Recycled Water) - Interest	1,564,823	Existing Debt	81%	16%	0%	0%	4%	0%	Weighted Average of Existing Debt
BMP Capital Sub Total	\$ 4,637,194		\$ 3,745,008	\$ 725,931	\$ -	\$ -	\$ 166,255	\$ -	
Reallocation of "As All Others"			\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Allocation	\$ 4,637,194		\$ 3,745,008	\$ 725,931	\$ -	\$ -	\$ 166,255	\$ -	
Percentage Allocation	100.0%		80.8%	15.7%	0.0%	0.0%	3.6%	0.0%	

OPERATING EXPENDITURES		Five-Year Avg	Allocation	Ground Water Users	Delivered Water Service	Billing	Metering	Additional DWZ	As All Others	Notes
General Fund Costs										
General Fund	\$	286,411	Salaries & Wages	64%	9%	10%	13%	4%	0%	Based on Average Salary Allocations. See S&B Allocation.
Agency Administration										
Administration		107,181	Salaries & Wages	64%	9%	10%	13%	4%	0%	Based on Average Salary Allocations. See S&B Allocation.
Special Fund Administration										
Special Fund General Admin		1,002,103	Salaries & Wages	64%	9%	10%	13%	4%	0%	Based on Average Salary Allocations. See S&B Allocation.
Administration		141,945	Salaries & Wages	64%	9%	10%	13%	4%	0%	
Public Education & Outreach		15,858	Salaries & Wages	64%	9%	10%	13%	4%	0%	
Refund		-	Salaries & Wages	64%	9%	10%	13%	4%	0%	
Facility Operations										
Harkins Slough		269,029	Harkins Slough	62%	38%	0%	0%	0%	0%	Cost to pump water at pressure is allocated 100 percent to delivered water users. Remaining Cost based on the ratio of basin consumption
Coastal Distribution		1,029,492	Coastal Distribution	76%	24%	0%	0%	0%	0%	
Supplemental Wells**		114,299	Supplemental Wells	89%	11%	0%	0%	0%	0%	
Recycled Water Facility		2,235,106	Recycled Water Facility	71%	29%	0%	0%	0%	0%	
Metering Program		312,423	Metering Only	0%	0%	0%	100%	0%	0%	
Basin Management Planning										
Modeling and Monitoring		413,025	Basin Consumption	89%	11%	0%	0%	0%	0%	Allocated based on the ratio of basin consumption
Basin Management		356,436	Basin Consumption	89%	11%	0%	0%	0%	0%	
Basin Funding		502,062	Basin Consumption	89%	11%	0%	0%	0%	0%	
Capital Projects										
Capital Projects and Reserves		1,170,240	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
Debt Service Payments										
SWRCB Note#1 (Harkins Slough)		835,093	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
SWRCB Note#2 (Pipeline and Wells)		453,316	Capital & Capacity	83%	14%	0%	0%	3%	0%	
DWR (Prop. 13)		274,968	Capital & Capacity	83%	14%	0%	0%	3%	0%	
1999 COP (Bond Principal)		661,678	Capital & Capacity	83%	14%	0%	0%	3%	0%	
1999 COP (Bond Interest)		847,317	Capital & Capacity	83%	14%	0%	0%	3%	0%	
City of Watsonville (Recycled Water) - Interest		1,564,823	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Future Debt Service										
Future Debt Service		607,000	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
Operating Expenditures Sub Total		\$ 13,199,804		\$ 10,078,721	\$ 2,212,092	\$ 149,364	\$ 518,794	\$ 240,832	\$ -	
Reallocation of "As All Others"				\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Total Allocation		\$ 13,199,804		\$ 10,078,721	\$ 2,212,092	\$ 149,364	\$ 518,794	\$ 240,832	\$ -	
Percentage Allocation		100.0%		76.4%	16.8%	1.1%	3.9%	1.8%	0.0%	

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RATE REVENUE REQUIREMENT			Ground Water Users	Delivered Water Service	Billing	Metering	Additional DWZ	As All Others	Notes
Five-Year Avg	Allocation								
Operating Expenses	\$ 6,785,370	As O&M	72%	18%	2%	7%	1%	0%	
Additional O&M (BMP Related)	146,847	As O&M	72%	18%	2%	7%	1%	0%	
Additional O&M Expenditures	-	As O&M	72%	18%	2%	7%	1%	0%	
Debt	5,244,194	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Rate Funded Capital	400,419	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Replacement Funding (Depreciation Funding)	1,170,240	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
Coverage Driven Increase	405,117	Capital & Capacity	83%	14%	0%	0%	3%	0%	
Less Offsetting Revenues									
Cashflow	\$ 800,563	Capital & Capacity	83%	14%	0%	0%	3%	0%	Ratio of total consumption and available capacity. Available (or standby) Delivered Water Service capacity is directly allocated to Inside DWZ users
Management Fees	383,206	As All Others	0%	0%	0%	0%	0%	100%	Weighted Average of all other allocated expenditures
Other Revenues	108,804	As All Others	0%	0%	0%	0%	0%	100%	
Total Rate Revenues to be Collected			\$ 11,642,611	\$ 2,418,482	\$ 130,151	\$ 452,057	\$ 309,448	\$ 492,010	
Reallocation of "As All Others"			\$ 383,093	\$ 79,579	\$ 4,283	\$ 14,875	\$ 10,182	\$ (492,010)	
Total Allocation			\$ 12,025,704	\$ 2,498,061	\$ 134,433	\$ 466,932	\$ 319,630	\$ -	
Percentage Allocation			77.9%	16.2%	0.9%	3.0%	2.1%	0.0%	

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Percent Allocation of Salary Positions to Functional Categories (forecasted average over next 5 years)							
Position	Supplemental Water Service to Metered Water Users	Delivered Water	Billing	Metering	Additional Services for Supplemental Water in DWZ	Source	Allocation
General Manager	50%	45%			5%	Agency Estimate	Position oversees supplemental and delivered water services.
Accounting Services Manager	75%	5%	20%			Agency Estimate	Position manages accounts and oversees user services.
Financial Analyst	80%		20%			Agency Estimate	Position provides manages supplemental water fund and assists in user billing.
Administrative Analyst	50%		25%	25%		Agency Estimate	Position provides administrative support and user billing and metering support.
Water User Service Rep			75%	25%		Agency Estimate	Provides user billing services and metering support.
Water Meter Program Coordinator	25%			75%		Based on Budget	Position manages the metering program.
Sr. Water Systems Operator	90%	5%		5%		Based on Budget	Position operates supplemental water projects and assists user metering.
Water System Operator	90%			10%		Based on Budget	Position operates supplemental water projects.
Senior Staff Hydrologist	80%	10%			10%	Agency Estimate	Position monitors and models Basin water use.
Staff Hydrologist	80%	10%			10%	Agency Estimate	Position monitors and models Basin water use.
Field Technician*	90%	10%				Agency Estimate	Position monitors and models Basin water use.
Maintenance Technician	40%			60%		Based on Budget	Position maintains supplemental water facilities and Agency owned meters.
Water Resources Coordinator	75%	10%		10%	10%	Based on Budget	Position assists Pajaro Basin metering, modeling, monitoring, and supplemental water projects.

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APPENDIX F –RATE CALCULATION WITH SMOOTHING

Rate Calculations	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19	FY 2019/20
Metered Water Users Service					
Cost of Metered Water Users Service	\$9,224,455	\$9,691,084	\$10,202,326	\$10,786,434	\$11,404,154
Metered Water User Consumption	48,343	47,644	47,052	46,666	46,283
Augmentation Charge, Metered Users - Outside DWZ	\$191	\$203	\$217	\$231	\$246
Additional Service for Metered Water Users within DWZ					
Cost of Additional DWZ Metered Service	\$192,193	\$215,381	\$262,472	\$300,571	\$361,230
Metered Water Consumption DWZ	4,442	4,142	4,200	4,002	4,002
Additional Supplemental Service	\$43	\$52	\$62	\$75	\$90
Augmentation Charge, Metered Users - Inside DWZ	\$235	\$258	\$282	\$309	\$338
Unmetered Water Users					
Cost of Unmetered Water Users Service	\$173,308	\$181,869	\$190,853	\$200,281	\$210,175
Unmetered Accounts	951	941	932	922	913
Unmetered Rate	\$182	\$193	\$205	\$217	\$230
Delivered Water Service					
Cost of Delivered Water Service	\$1,914,770	\$2,079,788	\$2,216,050	\$2,282,532	\$2,351,008
Delivered Water Consumption	5,500	5,800	6,000	6,000	6,000
Delivered Water Rate	\$348	\$359	\$369	\$380	\$392