FINAL REPORT

City of Pleasanton
Comprehensive Water Rate Study

May 2015

Table of Contents

Executive Summary

Introduction

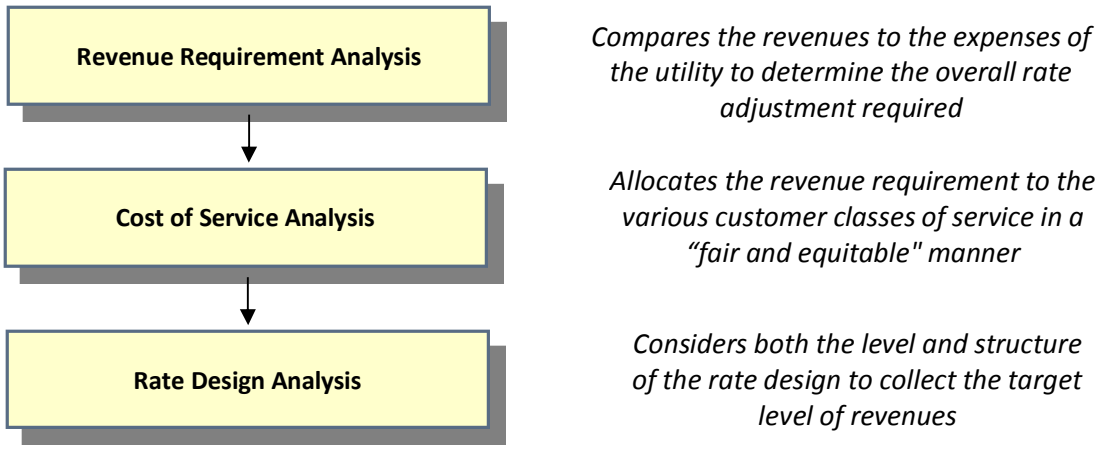
HDR was retained by the City of Pleasanton (City) to conduct a comprehensive water rate study. The objective of the rate study was to review the City's operating and capital costs in order to develop a financial plan and cost-based rates for both the potable and recycled water systems. Potable water is most easily described as "drinking water" and has been treated and delivered to the City's customers for human consumption and other uses. In contrast, recycled water is not treated to a drinking level and is therefore used for outdoor irrigation. This study determined the adequacy of the existing water rates, both potable and recycled, and provides the framework and cost justification for any needed future adjustments.

The City owns and operates a water transmission and distribution system. The City purchases potable water from Zone 7 and supplements purchased water with local groundwater resources. The costs associated with providing water supply, plus the costs of distributing water to customers has been developed based on City provided information and included within the development of the proposed rates. In addition, the City purchases and delivers recycled (non-potable) water to customers that can benefit from recycled water service (e.g., irrigation needs). The findings, conclusions and recommendations from this study are solely related to the City's potable and recycled water systems.

Overview of the Rate Study Process

A comprehensive water rate study uses three interrelated analyses to address the adequacy and equity of a utility's rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. These three analyses are illustrated below in Figure ES-1.

Figure ES–1
Overview of the Comprehensive Water Rate Analyses



The above framework for reviewing and evaluating the City's water system rates was utilized in the development of this study.

Potable Water Rate Study

The water rate study technical analysis was developed separately for the potable and recycled water systems. The potable water system technical analysis was developed based on the operating and capital costs necessary to provide potable water to the City's customers.

Key Potable Water Rate Study Results

The potable water technical analysis resulted in the following findings, conclusions, and recommendations.

- A revenue requirement analysis was developed for FY 2016 through FY 2020.
- The FY 2015 budget was used as the starting point of the analysis. Preliminary FY 2016 and 2017 budgeted information for O&M expenses were also included within the analysis.
- Operation and maintenance expenses are projected to increase at inflationary levels with no assumed changes to levels of service or anticipated extraordinary expenses.
- The current drought has impacted customer consumption levels, which in turn has reduced overall revenues for the potable water system.
- The prudent level of funding renewal and replacements through rates is one of the primary drivers behind the results and the recommendations for the proposed rate adjustments.
- The potable water system has no outstanding long-term debt. Under the proposed financial plan, no long-term debt will be issued to fund necessary capital improvements.
- Annual rate adjustments over the FY 2016 – FY 2020 time period are needed to support the capital improvement plan and renewal and replacement funding levels. The FY 2016 adjustment of 5.5% is proposed to be effective on October 1, 2015. Annual inflationary adjustments of 2.5% are proposed on January 1, of each subsequent year starting January 1, 2016.
- A cost of service analysis was developed to review the equity of the existing rates.
- The results of the cost of service analysis indicated minor cost differences between the various customer classes of service. However, for a number of reasons (i.e., drought impacts), it is recommended that no adjustments to the cost/rate relationships between the classes of service be made at this time.
- The study has proposed rates for the FY 2016 – FY 2020 time period. For a single-family residential customer, the average bi-monthly adjustment is estimated to be approximately $8.40 at the end of the five year period with expected inflationary based rate adjustments.
- Local distribution costs are proposed to increase by inflationary measures over the 5-year period, and at this time have been estimated at 2.5% for rate example purposes.

- The primary adjustment to water rates for FY 2016 is to reflect the current cost of Zone 7 purchased water.
- The Zone 7 rate will adjust as a pass-through wholesale rate when adopted by Zone 7. At this time no further Zone 7 wholesale rate adjustments have been included in the study.
- An analysis of the allocation of costs to the City's residential water rate tiers has been completed to reflect recent legal decisions.
- Drought rates, by drought stage, were developed for the City to encourage efficient use and maintain sufficient revenues during mandatory conservation efforts.
- The drought rates can be implemented by the City Council as drought stages are declared.

Summary of the Potable Water Revenue Requirement Analysis

A revenue requirement analysis is the first analytical step in the development of the potable water rate study. This analysis determines the adequacy of the overall water rates. From this analysis, a determination can be made as to the overall level of water rate adjustments needed to provide adequate and prudent funding for both operating and capital needs.

For this study, the revenue requirement was developed for a six-year projected time period (FY 2015 - 2020). A multi-year time frame is recommended to better anticipate future financial requirements and allow the City to begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates. For the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most commonly used methodology by municipal utilities to set their revenue requirement and is composed of O&M expenses, transfer payments, debt service and capital projects funded from rates. The primary financial inputs in the development of the revenue requirement analysis were the City's 2015 budget documents, 2014 billed customer and consumption data, and the City's capital improvement plan.

The proper and adequate funding of capital projects is important to help minimize rates over time. A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates. Annual depreciation expense reflects an investment in infrastructure that was placed in service an average of 15 years ago, assuming a 30-year useful, depreciable, life. Simply funding an amount equal to annual depreciation expense will not be sufficient to fund the replacement of an existing or depreciated facility. Therefore, consideration should be given to funding within rates some amount greater than annual depreciation expense for renewals and replacements.

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For purposes of reviewing the capital project funding, City has segregated their capital plan into two components:

- Potable Water Replacement Fund
- Potable Water Expansion Fund

The water replacement fund is intended to provide funding for the more routine renewal and replacement type projects, while the expansion fund is related to growth and expansion. This study has provided a detailed discussion and exhibits associated with each of these funds and the capital projects associated with them. As a part of this study, a concerted effort was made to increase the overall level of "pay-as-you-go" (rate) funding for replacement capital projects. Provided below in Table ES-1 is a summary of the amount of rate funded capital for each year.

Table ES–1
Summary of the Annual Rate Funded CIP ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Replacement Capital Projects	$1,600	$1,825	$2,115	$2,250	$2,550	$2,800
Expansion Capital Projects	0	0	0	0	0	0
Total Rate Funded Capital	**$1,600**	**$1,825**	**$2,115**	**$2,250**	**$2,550**	**$2,800**

As a point of reference, the City's potable water annual depreciation expense is approximately $3.3 million (2014). This financial plan has placed the City's rate funding for CIP at $2.8 million by FY 2020. It is important to note and understand that depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds depreciation expense (i.e. $3.3 million) is both prudent and appropriate. In developing this financial plan, HDR and the City have attempted to minimize rate impacts while funding the planned capital improvement projects of the City. While this financial plan has strengthened the City's "pay-as-you-go" funding for capital projects, the level of rate funding for renewal and replacement capital does not meet annual depreciation expense levels, which is the target minimum funding level. Given this level of funding, HDR recommends that the City increase this level of funding whenever funds are available to do so. As a note, expansion related capital improvement projects are funded primarily through existing expansion reserves and annual potable water connection fees.

Given a projection of operating and capital expenses a summary of the potable water revenue requirement analysis was developed. Provided below in Table ES-2 is a summary of the revenue requirement analysis (financial plan).

Table ES–2
Summary of the Potable Water Revenue Requirement Analysis ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$16,418	$16,941	$16,936	$17,212	$17,652	$18,111
Other Revenues	2,151	916	927	949	972	984
Total Revenues	**$18,569**	**$17,858**	**$17,862**	**$18,161**	**$18,624**	**$19,095**
Expenses						
O&M Expenses	$15,743	$16,358	$16,687	$17,298	$17,948	$18,611
Transfers Out	1,928	2,157	2,452	2,591	2,896	3,151
Net Debt Service	0	0	0	0	0	0
Change in Working Capital	898	235	266	283	312	423
Total Expenses	**$18,569**	**$18,751**	**$19,405**	**$20,173**	**$21,156**	**$22,184**
Bal./(Def.) of Funds	$0	($893)	($1,542)	($2,013)	($2,532)	($3,089)
Balance as % of Rev from Rates	0.0%	5.3%	9.1%	11.7%	14.3%	17.1%
Proposed Rate Adjustments						
Annual CPI Increases	0.0%	2.5%	2.5%	2.5%	2.5%	2.5%
Proposed Rate Adjustment	0.0%	5.5%	0.0%	0.0%	0.0%	0.0%
Annualized Rate Adjustments [1]	**0.0%**	**5.4%**	**1.3%**	**1.3%**	**1.3%**	**1.3%**

[1] - Annualized rate adjustment reflects the change in revenues based on the timing of the proposed rate change. For example, the CPI adjustments will take place January 1 of each year, or midway through the fiscal year while the rate adjustment is proposed for October 1, 2015.

As can be seen, the revenue requirement has summed the O&M, transfers (i.e., rate funded capital), net debt service and the change in working capital. The total revenue requirement is then compared to the total sources of funds which include the rate revenues, at present rate levels, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the rate revenues to determine the level of rate adjustment needed to meet the revenue requirement. It is important to note the "Bal./(Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over this project time period, the total deficiency of rates is 17.1%.

As can be seen in Table ES-2 a rate transition plan has been developed to adjust rates over this time period. To better understand the impacts of these adjustments, Table ES-3 provides a summary of the impacts to residential potable water customer rates.

Table ES–3
Summary of the Potable Water Rate Transition Plan and Residential Bill Impacts [1]

	Present Bill	FY 2016 Oct. 1, 2015	FY 2016 Jan 1 2016	FY 2017 Jan 1 2017	FY 2018 Jan 1 2018	FY 2019 Jan 1, 2019	FY 2020 Jan 1, 2020
Bi-Monthly Residential Bill [1]-	$77.84						
Proposed Rate Adjustment		**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Mthly Bill After Rate Adj.		$81.05	$82.06	$83.09	$84.13	$85.18	$86.24
$ Change/Bi-Month		$3.21	$1.01	$1.03	$1.04	$1.05	$1.06
Cumulative Bi-Mthly Change		$3.21	$4.22	$5.25	$6.29	$7.34	$8.40

[1] – Bi-Monthly bill assuming a ¾" meter and 24 CCF (17,952 gallons) of water consumption

As can be seen, the current bi-monthly residential bill for an average potable water customer is $77.84/bi-month (assumes a 3/4" meter & 24 hundred cubic feet [CCF] of consumption). With the proposed adjustments in October 2016, the impacts will be approximately a $3.21/bi-month and approximately $1.00/bi-month with following year's proposed CPI adjustments. Cumulatively, over the five year period the residential bill is projected to go from $77.84/bi-month to $86.24/bi-month, or a total change of $8.40/bi-monthly.

Based on the revenue requirement analysis developed herein, HDR has concluded that the City will need to adjust their rates over the next five years (FY 2016 – FY 2020) to maintain their cost-based rates. HDR has reached this conclusion for the following reasons:

- Rate adjustments are necessary to fund the City's capital improvement needs, of which a large portion is driven by the funding of replacement capital projects.
- Rate adjustments are necessary to fund the City's capital projects on a "pay-as-you-go" basis and avoid the need for the issuance of any long-term debt.
- Rate adjustments are necessary to reflect the reduction in annual water consumption (i.e. per capita use) which may be reflective of the new level of water consumption for the foreseeable future.
- The proposed rate adjustments maintain the City's strong financial health and provide long-term sustainable funding levels for the City.
- The proposed rate adjustments do not provide sufficient replacement funding, when compared to annual depreciation expense, during the 5-year period.

In reaching this conclusion, HDR would recommend that the City adopt the proposed rates through FY 2020 in order to provide surety as to the availability of funding for the capital improvement program. Detailed technical exhibits of the revenue requirement analysis have been included within the Technical Appendix in Exhibits 1-7.

Summary of the Potable Water Cost of Service Analysis

A cost of service analysis determines the equitable allocation of the revenue requirement to the various customer classes of service (e.g. single-family, multi-family, commercial, irrigation). The objective of the cost of service analysis is different from determining the revenue requirement. A revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the fair and equitable manner to collect that revenue requirement.

The results of the cost of service analysis indicated some cost differences between the customer classes of service. While some minor cost differences exist, the overall allocation of costs between customers generally appears to be reasonable. In reaching this conclusion, one of variables which does directly impact cost allocations is the trend of declining consumption, along with the current drought conditions with California and the Bay Area. These conditions certainly have an impact upon consumptive use and cost allocations.

Customer responsiveness to the drought has resulted in an allocation of costs that dos not reflect how the system was designed and customer impacts on the system under "normal" conditions. The allocation of costs is based on many different components; however, the two primary components are related to average day use and peak day use. Both of these components are impacted by the current drought. First, average the consumption for customers has reduced in response to the drought. However, not all customer classes respond to the drought in the same manner. For example, residential customers may be able to reduce consumption at a higher percentage level than a commercial customer given the commercial customers needs to use water for business purposes. In this case, the average day allocation of costs would shift from one class to the other and may not reflect "normal" water conditions and burdens placed on the system. The second component is related to peak day, or how the customers place demands on the system. Similar to average day needs, the peak demands and responsiveness to the drought vary by customer class. For example, while a residential customer may respond and minimize outdoor watering and peak demands on the system, a commercial, or multi-family, customer may be able to entirely eliminate outdoor watering needs and peak demands on the system. These two different responses to the drought change the relationship of the cost allocations and do not reflect "normal" water conditions and how the system was designed to operate. This results in a cost of service analysis that does not reflect typical customer impacts on the system and would result in changing rates in the short-term based on one point in time, which does not reflect how customer typically utilize the system.

Given the changing usage patterns due to the drought, HDR believes the focus of this study should be on the overall rate adjustment needs based on the City's need to fund capital improvement projects over the 5-year time period and move towards adequately funding renewal and replacements through rates. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made at some later date as the cost of service results are primarily driven by customer consumption. Given that, no adjustments in the interclass cost relationships are recommended at this time.

Section 3.3 of this report provides a detailed discussion of the cost of service analysis conducted for the City's potable water system. The Technical Appendix contains the various exhibits associated with this analysis and can be found in Exhibits 8 - 16.

Summary of the Present and Proposed Potable Water Rate Designs

The final step of the comprehensive rate study process is the design of potable water rates to collect the desired levels of revenue, based on the results of the revenue requirement and cost of service analysis. The revenue requirement analysis provided a set of recommendations related to annual rate adjustments. As noted, no cost of service adjustments (i.e. interclass changes) were recommended or made at this time.

A key input in the development of the City's potable water rates is the cost of purchased water from Zone 7. The current rate structure is based on the cost of Zone 7 water purchases and local transmission and distribution costs. These costs are "stacked" to develop the tiered single-family rate structure and included in the development of the uniform rate structure for all other customers.

Another key aspect of the proposed rate designs is conforming to current legal requirements, of which Proposition 218 is front and center. At its very core, Proposition 218 requires a water utility to establish cost-based rates for the services provided. However, like most propositions or voter's initiatives, Proposition 218 provided certain direction, but lacked clarity and definition in certain areas. Hence, there have been a number of lawsuits in recent years related to utility rates and Proposition 218. Most recently, in the *Capistrano Taxpayers Association, Inc.* v. *City of San Juan Capistrano*, the City of San Juan Capistrano (Capistrano) was challenged, among other items, over the cost-basis for the tiers (price blocks) of their tiered water rate structure. The Appellate Court hearing this case ruled that tiered rates are a valid rate structure under Proposition 218, but to be legally compliant with Proposition 218, the pricing of the tiers must be cost-based. The City has residential tiered rates with four usage/price tiers. As a part of this study, HDR developed a technical memorandum to supplement the water rate design discussion to clearly demonstrate and support the proposed residential water rates and tiered pricing. A more detailed discussion of the development of the cost basis for the tier pricing is provided in Section 3.4 of this report and a detailed memorandum is included as a Technical Appendices.

Given the above, the City's potable water rates were developed for the next 5-year time period (FY 16 – FY 20) for each of the customer classes of service. Provided below in Table ES-4 is a summary of the present and proposed single-family potable water rates.

Table ES–4 Summary of the Proposed Single-Family Residential Water Rates							
	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1 2016	FY 2017 Jan 1 2017	FY 2018 Jan 1 2018	FY 2019 Jan 1, 2019	FY 2020 Jan 1, 2020
Proposed Rate Adjustment	**0.0%**	**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Single Family ($/Bi-Month)							
Fixed Meter Charge (3/4")	$26.41	$26.41	$27.07	$27.75	$28.44	$29.15	$29.88
Consumption Charge							
0-20 CCF	$2.1000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000
21-40 CCF	2.3581	2.7581	2.7646	2.7712	2.7780	2.7849	2.7920
41-60 CCF	2.6825	2.9825	2.9946	3.0070	3.0197	3.0327	3.0460
60+ CCF	3.4520	3.7520	3.7801	3.8089	3.8384	3.8686	3.8996

As can be seen the proposed rates, effective October 1, 2015, have been adjusted to reflect the cost of Zone 7 purchase water costs. The cost of Zone 7 purchased water is included as a component in each of the single-family tier rates and will be adjusted as a pass through rate increase when Zone 7 adopts a new wholesale water rate. The local distribution component, not the Zone 7 component, of the proposed rates for the following years will be adjusted annually on January 1 of each year based on the change in inflation from the prior year. For the development of future rates, an inflationary factor of 2.5% was used to reflect the estimated level of future rates. The rates for FY 2016 – FY 2020 will be developed (adjusted) based on the actual inflation indices from the prior year.

Similar to the single family rates, the multi-family, commercial, and irrigation proposed rates were adjusted to reflect the current Zone 7 charge for the rates effective October 1, 2015. In addition, the local distribution component of the rate will be adjusted annually based on recent inflationary impacts. Provided in Table ES-5 is a summary of the proposed multi-family, commercial, and irrigation rates.

Table ES–5 Summary of the Proposed Commercial, Multi-Family, & Irrigation Water Rates							
	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1 2016	FY 2017 Jan 1 2017	FY 2018 Jan 1 2018	FY 2019 Jan 1, 2019	FY 2020 Jan 1, 2020
Proposed Rate Adjustment	**0.0%**	**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Fixed Meter Charge (3/4")	$26.41	$26.41	$27.07	$27.75	$28.44	$29.15	$29.88
Consumption Charge($/CCF)							
Commercial	$2.4693	$2.7693	$2.7760	$2.7829	$2.7900	$2.7973	$2.8047
Multi-Family	2.4693	2.7693	2.7760	2.7829	2.7900	2.7973	2.8047
Irrigation	2.6152	2.9152	2.9256	2.9362	2.9471	2.9583	2.9698

Section 3.4 of this report provides a detailed discussion of the present and proposed potable water rates along with a component by component summary of the potable water rates for FY 2016 – FY 2020. As noted in the development of the single-family residential rates, the inflationary increases will be based on the actual prior year inflationary indices to set the proposed rates January 1, 2016 through January 1, 2020.

Summary of the Proposed Potable Water Drought Rates

Drought rates are one of several "tools" to assist during a drought or water emergency. In the City's case, the drought rates will work in tandem with the City's other conservation programs, and specifically the City's excess use penalties (Ord. 2097) previously adopted by the City. It should be noted that the existing excess use penalty rates were reviewed as part of the rate study, and in discussion with City staff it was determined that the current approach is meeting the City's goals and objectives for the excess use penalties. Therefore, no changes to the excess use penalty rates were recommended.

When properly designed, drought rates simultaneously address the issues of the financial/revenue impacts of decreased consumption while also providing an additional incentive to encourage efficient use, or more appropriately stated, discourage wasteful or inefficient use through pricing. In a drought, water rates are one mechanism or tool used to encourage or create conservation savings. When a utility enters a drought stage, it is not uncommon for a utility to have a set of water drought rates to maintain sufficient revenues due to reductions in usage and to provide an incentive to induce a specified level of conservation savings.

For purposes of establishing drought rates, four stages for water shortage and a target water savings for each stage were established in the City's water conservation plan. These water shortage stages are summarized below.

Stage 1 – Up to 20% water savings: Voluntary
Stage 2 – Up to 20% water savings: Mandatory
Stage 3 – Up to 35% water savings: Mandatory
Stage 4 – Over 35% water savings: Mandatory

In developing the drought rates, the monthly meter charge remains fixed at the same level regardless of the drought stage. For purposes of this discussion, it is also assumed that the Zone 7 rate is also fixed, but it will change if Zone 7 modifies their wholesale rate to the City. Therefore, the portion of the water rate impacted by the water shortage rate is the local consumption charges of the water rates.

Based on the conservation savings estimated for each drought stage, the drought rates were developed to maintain the current level of revenues for each customer class of service. As noted, in addition to maintaining the current level of revenue to support operating costs, additional costs the City incurs during the drought were included to reflect the changes in costs at each stage. Provided below in Table ES-6 is a summary of the drought rates for each block.

Table ES–6 Summary of the Drought Rates – $/CCF					
	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
Single-Family					
Tier 1 – 0-20 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 2 – 21-40 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 3 – 41-60 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 4 – 60+ CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Multi-Family and Commercial					
All Consumption	$0.0000	$0.1385	$0.5400	$1.1631	$2.5145
Irrigation					
All Consumption	$0.0000	$0.1458	0.5655	$1.2244	$2.6470

The drought rates in Table ES-6 are added to the current rates in place at the time the drought stage is declared. For example, if the first tier rate is currently $2.4000/CCF and the City declares a Stage 2 drought, then the first tier rate will change to $2.9689/CCF ($2.4000 + $0.5689). These drought rates can be added to the City's proposed rates, at the appropriate drought stage level, effective October 1, 2015, as directed by the City Council. Implementation of these drought rates will help the City maintain revenue levels during drought related consumption reductions, provide additional pricing incentives to reduce consumption, and work in tandem with the City's excessive use penalties for inefficient water users.

Drought rates will be revised at the same time as potable water rates are adjusted starting in January 2016 with the first CPI adjustment. As noted, drought rates are in place to provide sufficient revenues to meet operating and capital needs. Given this, when potable water rates are increased the level of revenues will increase. Subsequently, drought rates will need to be reviewed and updated based on the relationship to the current rates and revenue needs. This includes any CPI adjustments to the local distribution charges as well as the Zone 7 wholesale water rates. In this way the enactment of the drought rates will provide the same level of revenues prior to drought rates and resulting water conservation impacts.

A more detailed discussion of the potable water drought rates is provided in Section 3.4.7 of this report. In addition, HDR developed a technical memorandum to supplement the development of the potable water drought rates to clearly demonstrate and support the pricing of the drought rates. This technical memorandum is attached within the technical appendix to this report.

Recycled Water Rate Study

The City is in the process of expanding its current recycled water system with the addition of new pipelines, storage, and future capital improvements to provide recycled water to areas of

the City. The recycled water system technical analysis was developed based on the operating and capital costs necessary to provide recycled water where available.

Key Recycled Water Rate Study Results

The recycled water technical analysis resulted in the following findings, conclusions, and recommendations.

- A revenue requirement analysis was developed for FY 2016 through FY 2020.
- The FY 2015 budget was used as the starting point of the analysis.
- Operation and maintenance expenses were projected based on FY 2016 and FY 2017 budget estimates along with future estimated inflationary levels.
- The City purchases recycled water supply from Dublin San Ramon Services District and the City of Livermore.
- Purchased recycled water projections were based on City provided estimates of customers converting to recycled water in the near future.
- The analysis includes annual debt service payments starting in FY 2017 which funds Phase 1A and 1B of the recycled water system.
- The analysis begins to fund a renewal and replacement fund over the 5-year period to establish a renewal and replacement fund.
- A recycled water connection fee was calculated and is provided under a separate cover to the City.
- The current recycled water rate structure is based on 90% of the potable water irrigation rate.
- The proposed recycled water rate maintains the 90% relationship to the potable irrigation rate.

Summary of the Recycled Water Revenue Requirement Analysis

Similar to the potable water analysis, a revenue requirement analysis was developed for the recycled water system to determine the adequacy of recycled water rates. The analysis is used to determine if the level of current recycled water rates adequately supports recycled water operations and capital needs.

The projection of revenues for the recycled water analysis was based on the expected conversion of existing potable irrigation customers to the recycled water system when it becomes available. It should also be noted that the projected revenues assume maintaining the recycled water rate relationship equal to 90% of the potable irrigation rate. The City provided the anticipated recycled water sales to new customers over the 5-year period which was used to project annual recycled water revenues and recycled water purchases from Dublin San Ramon Services District and the City of Livermore.

The recycled water revenue requirement was developed for the six-year projected time period of FY 2015 – FY 2020. The revenue requirement analysis was established using a “cash basis” approach. This is the same methodology and time period used in the development of the

potable water revenue requirement. The cash basis approach is composed of O&M expenses, transfer payments, debt service, and capital projects funded from rates. The primary financial inputs in the development of the revenue requirement were the City's projected recycled water budget for FY 2016 and FY 2017, projected recycled water customer billing data, and the recycled water capital improvement plan.

The City is in the early stages of establishing a recycled water system. As a result, the development of a renewal and replacement fund to finance future capital improvements and maintain the existing system is critical to the financial stability of the recycled water program. The City's current capital improvement plan includes Phases 1A and 1B, which are funded through a low interest loan from the State of California. This results in an annual debt service payment starting in FY 2017 of approximately $750,000. When recycled water revenues are sufficient, the City will begin to establish a transfer to the recycled water renewal and replacement fund. It is expected this will occur starting in FY 2018 and ramp up as sales and revenue levels permit. The same general financial guideline used in the potable water analysis for the funding of renewal and replacements also applies to the recycled water utility. That is, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates. As noted, as revenues are available the City should increase the level of rate funded capital to maintain the recycled water system. In the future some consideration should be given to funding, within recycled water rates, some amount greater than annual depreciation expense for purposes of funding replacement cost.

Given the projection of operating and capital expenses, a summary of the recycled water revenue requirement analysis was developed. Provided below in Table ES-7 is a summary of the revenue requirement analysis (financial plan).

Table ES–7 Summary of the Recycled Water Revenue Requirement Analysis ($000)						
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$103	$614	$1,174	$1,556	$1,777	$1,881
Other Revenues	285	288	291	294	297	300
Total Revenues	**$388**	**$902**	**$1,465**	**$1,850**	**$2,074**	**$2,181**
Expenses						
O&M Expenses	$44	$600	$854	$1,009	$1,102	$1,152
Transfers	0	0	0	75	200	275
Net Debt Service	0	0	750	750	750	750
Change in Working Capital	0	0	0	0	0	0
Total Expenses	**$44**	**$600**	**$1,604**	**$1,834**	**$2,052**	**$2,177**
Bal./(Def.) of Funds	$344	$301	($140)	$16	$21	$4
Balance as % of Rev from Rates	-335.5%	-49.1%	11.9%	-1.0%	-1.2%	-0.2%
Proposed Rate Adjustments [1]	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

[1] Proposed recycled water revenues are based on 90% of the proposed irrigation water rates, which include the previously discussed potable water rate adjustments. No further recycled water rate adjustments are proposed during this time period.

As can be seen, the revenue requirement is the sum of the O&M, transfers (i.e., rate funded capital), net debt service and the change in working capital. The total revenue requirement is then compared to the total sources of funds which include the projected rate revenues, set at 90% of the proposed potable irrigation rate, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. Over this project time period, the projected recycled water revenues adequately fund the projected O&M, capital, establishment of the renewal and replacement fund, and maintenance of prudent operating reserves.

Summary of the Present and Proposed Recycled Water Rate Designs

The proposed recycled water rates are based on 90% of the potable irrigation rate. This method of establishing recycled water rates is a method used by many utilities in California to develop their recycled water rates. As noted in the revenue requirement section, based on this relationship to the potable irrigation rate, no additional rate adjustments are proposed for the recycled water rates. However, given the change in the potable water irrigation rates, the recycled water rate will be adjusted on October 1, 2015 to reflect the relationship to potable irrigation rate levels. In addition, as potable water rates are adjusted by the proposed inflationary increases and any changes in Zone 7 rates, the recycled water rates will also be adjusted. For purposes of projecting recycled water rates, an estimated inflationary increase of 2.5% was used for the potable water rates, and subsequently for the recycled water rates. It should be noted that no adjustments to the Zone 7 rates have been included in the development of the proposed recycled water rates.

Given the above, the City's recycled water rates were developed for the next 5-year time period (FY 16 – FY 20). Provided in Table ES-8 is a summary of the present and proposed recycled water rates.

Table ES–8
Summary of the Present and Proposed Recycled Water Rates ($/CCF)

	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan 1 2016	FY 2017 Jan 1 2017	FY 2018 Jan 1 2018	FY 2019 Jan 1, 2019	FY 2020 Jan 1, 2020
Rate per CCF	$2.3537	$2.6237	$2.6330	$2.6426	$2.6524	$2.6625	$2.6728

As can be seen the proposed rates, effective October 1, 2015, have been adjusted to maintain the relationship to the proposed potable water irrigation rate. This relationship has been maintained as potable water customers share in the cost of recycled water costs (through the upper tiers which are established as the outdoor use tiers) as it provides a benefit to potable water customers of not needing to purchase additional water from Zone 7 or require the City to develop additional water supplies. Therefore, the relationship provides an incentive to utilize recycled water and reduce potable water consumption for outdoor watering needs. Thereby minimizing customer reliance on more expensive potable water supplies and freeing up potable water for indoor customer use.

The proposed recycled water rates assume no changes in the wholesale potable rate from Zone 7 and the assumed inflationary adjustment of 2.5% for example purposed. The actual rate will vary depending on the actual inflation used to set the proposed rates, and will be based on 90% of the potable water irrigation rate. Section 4 of this report provides a detailed discussion of the present and proposed recycled water rates.

Water Rate Study Recommendations

Based on the results of the potable water rate study, HDR recommends the following:

- Potable water rates should be adjusted 5.5% based on the proposed rates as part of this study for October 1, 2015.
- When funds are available, increase the level of annual replacement funding to transition towards meeting annual depreciation expense levels.
- Future CPI related rate adjustments are necessary to meet operating and capital needs. These were estimated at 2.5% per year each January 1st starting in 2016 through 2020.
- The actual rates will be based on the actual CPI index for the year prior to the rate setting period.
- Drought rates should be adopted based on the need to maintain sufficient revenues for operating and capital needs.
- Drought rates should be adjusted whenever potable water rates are adjusted (Zone 7 pass through or CPI adjustments).

Based on the results of the recycled water rate study, HDR recommends the following:

- Maintain the existing basis for the recycled water rate of 90% of the potable water irrigation rate.
- Adjust the recycled water rate when adjusting the potable water rates.
- Begin to establish the replacement fund for the recycled water fund for future system repair and replacements.

Summary of the Water Rate Study

This completes the overview of the development of the comprehensive potable and recycled water rate study for the City. The focus of this study has been the prudent and adequate funding of the utility, particularly as it relates to the needed capital improvement projects and prudent annual funding of renewal and replacement needs. The proposed rate adjustments maintain a fiscally healthy potable and recycled water system. A full and complete discussion of the development of the potable and recycled water rate study can be found in following sections of this report.

1. Introduction and Overview

1.1 Introduction

HDR Engineering, Inc. (HDR) was retained by the City of Pleasanton (City) to conduct a comprehensive water rate study. The objective of the rate study was to review the City's potable and recycled water operating and capital costs in order to develop a financial plan and cost-based rates. The financial plan is designed to meet the City's operation and maintenance (O&M) needs and the capital improvement program for the potable and recycled water systems. This study determined the adequacy of the existing water rates and provides the framework for any needed future adjustments.

The City owns and operates a potable and recycled water distribution system. The City purchases potable water from Zone 7, supplemented with ground water, and purchases recycled water from Dublin San Ramon Services District and the City of Livermore. Each system was analyzed on a stand-alone basis to determine if rates are adequately funding each system's operating and capital needs.

1.2 Goals and Objectives

The City had a number of key objectives in developing the water rate study. These key objectives were as follows:

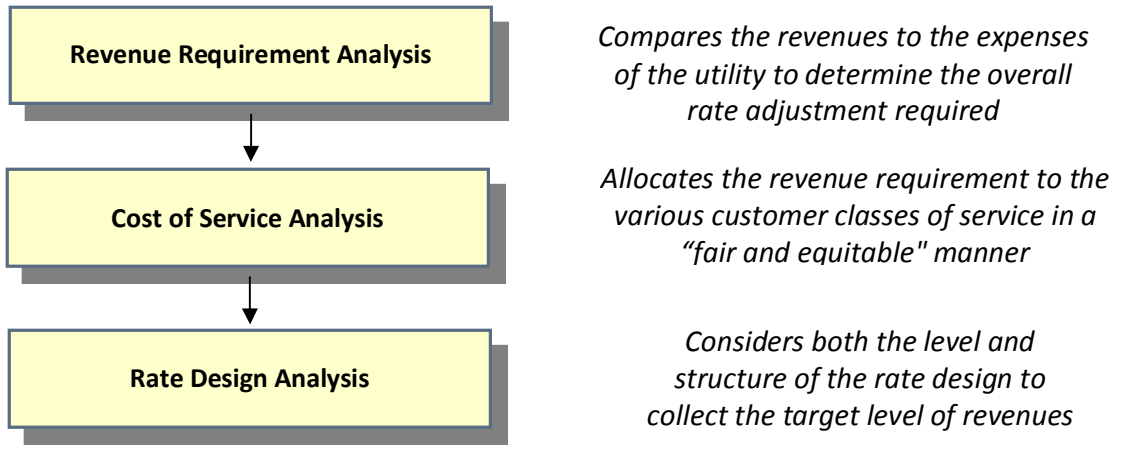
- Develop the study in a manner that is consistent with the principles and methodologies established by the American Water Works Association (AWWA), M1 Manual, Principles of Water Rates, Fees, and Charges.
- In financial planning and establishing the City's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the City's systems.
- Review the City's rates utilizing "generally accepted" rate making methodologies to determine adequacy and equity of the utility rates.
- Meet the City's financial planning criteria, particularly as it relates to adequate funding of capital infrastructure and maintenance of adequate and prudent reserve levels.
- Develop a final proposed financial plan which adequately supports the utility's funding requirements, while attempting to minimize overall impacts to rates.
- Provide rates which meet the legal requirements of Proposition 218 and recent legal decisions related to Proposition 218.

These key objectives provided a framework for policy decisions in the analysis that follows.

1.3 Overview of the Rate Study Process

User rates must be set at a level where a utility's operating and capital expenses are met with the revenues received from customers. This is an important point, as failure to achieve this objective may lead to insufficient funds to maintain system integrity. To evaluate the adequacy of the existing rates, a comprehensive rate study is often performed. A comprehensive water rate study consists of three interrelated analyses. Figure 1-1 provides an overview of these analyses.

Figure 1–1
Overview of the Comprehensive Water Rate Analyses



The above framework for reviewing and evaluating rates was utilized for the City's potable and recycled water systems.

1.4 Organization of the Study

This report is organized in a sequential manner that first provides an overview of utility rate setting principles, followed by sections that detail the specific steps used to review the City's potable and recycled water rates. The following sections comprise the City's water rate study report:

- Section 2 – Overview of Water Rate Setting Principles
- Section 3 – Development of the Potable Water Rate Study
- Section 4 – Development of the Recycled Water Rate Study

A Technical Appendices is attached at the end of this report, which details the various technical analyses that were undertaken in the preparation of this report.

1.5 Summary

This report will review the comprehensive water rate analyses prepared for the City. This report has been prepared utilizing generally accepted water rate setting techniques.

2. Overview of Water Rate Setting Principles

2.1 Introduction

This section of the report provides background information about the water rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining a revenue requirement, the cost of service analysis, and rate design. This information is useful for gaining a better understanding of the details presented in Sections 3 and 4 of this report.

2.2 Generally Accepted Rate Setting Principles

As a practical matter, all utilities should consider setting their rates around some generally accepted or global principles and guidelines. Utility rates should be:

- Cost-based, equitable, and set at a level that meets the utility's full revenue requirement.
- Easy to understand and administer.
- Designed to conform to "generally accepted" rate setting techniques.
- Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements.
- Established at a level that is stable from year-to-year from a customer's perspective.

2.3 Types of Utilities

Utilities are generally divided into two types:

- **Public utilities** are usually owned by a City, county, or special district, and are theoretically operated at zero profit. A public utility is locally owned since its customers are also its owners. Public utilities are capitalized or financed by issuing debt and soliciting funds from customers through direct capital contributions or user rates. Public or municipal utilities are typically exempt from state and federal income taxes. A publicly elected City Council or Board of Commissioners usually regulates public utilities.
- **Private utilities** are "for profit" enterprises and are owned by a private company and/or shareholders. The shareholders are, in essence, the owners of the private utility. Therefore, the owners of a private utility may not be customers or local citizens, but rather numerous individuals or shareholders spread across the United States. A private utility is capitalized by issuing stock to the general public. Private utilities are taxable entities. Given their "for-profit" status, their rates and operations are generally regulated by a state public utility commission or other regulatory body.

As a point of reference, the City is a public (municipal) utility and the analysis has been based on the methodology generally utilized by a public utility.

2.4 Determining the Revenue Requirement

Because public and private utilities have very different administrative and financial characteristics their methods differ for determining revenue requirements and setting rates.

2.4.1 Public Utilities

Most public utilities use the "cash basis" approach for establishing their revenue requirement and setting rates. This approach conforms to most public utility budgetary requirements and the calculation is easy to understand. A public utility totals its cash expenditures for a period of time to determine required revenues. The revenue requirement for a public utility is usually comprised of the following costs or expenses:

- **Total Operating Expenses:** This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments. Operation and maintenance expenses include the materials, electricity, labor, supplies, etc. needed to keep the utility functioning.
- **Total Capital Expenses:** Capital expenses are calculated by adding debt service payments (principal and interest) to capital improvements financed with rate revenues. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes depreciation expense to stabilize the annual revenue requirement.

Under the "cash basis" approach, the sum of the total operating expenses plus the total capital expenses equals the utility's revenue requirement during any selected period of time (historical or projected).

Note that the two portions of the capital expense component (debt service and capital improvements financed from rates) are necessary under the cash basis approach because utilities generally cannot finance all their capital facilities with long-term debt. At the same time, it is often difficult to pay for capital expenditures on a "pay-as-you-go" basis given that some major capital projects may have significant rate impacts upon a utility, even when financed with long-term debt. Many utilities have found that some combination of pay-as-you-go funding and long-term financing will often lead to minimization of rates over time.

Public utilities typically use the "cash basis"[1] approach to establish their revenue requirements. An exception occurs if a public utility provides service to a wholesale or contract customer. In this situation, a public utility could use the "utility basis" approach (see Table 2-1) to earn a fair return on its investment.

[1] "Cash basis" as used in the context of rate setting is not the same as the terminology used for accounting purposes and recognition of revenues and expenses. As used for rate setting, "cash basis" simply refers to the specific cost components to be included within the revenue requirement analysis.

Table 2–1 Cash versus Utility Basis Comparison			
	Cash Basis		**Utility Basis (Accrual)**
+	O&M Expenses	+	O&M Expenses
+	Taxes/Transfer Payments	+	Taxes/Transfer Payments
+	Capital Improv. Funded From Rates (≥ Depreciation Expense)	+	Depreciation Expense
+	Debt Service (Principal + Interest)	+	Return on Investment
=	Total Revenue Requirement	=	Total Revenue Requirement

2.4.2 Private Utilities

Most private utilities use a "utility basis" or accrual approach for establishing revenue requirement and setting rates (see Table 2-1). The revenue requirement for a private utility is usually comprised of the following costs or expenses:

- **Total Operating Expenses:** This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments. Similar to a public utility under the "cash basis" methodology, operation and maintenance expenses include the materials, electricity, labor, supplies, etc. needed to keep the utility functioning.
- **Depreciation Expense:** Depreciation expense is a "book value" and in the rate setting process a means of recouping the cost of capital facilities over their useful lives. The inclusion of depreciation expense within the revenue requirement is a means of generating internal cash.
- **Return on Investment:** A utility should earn a "fair return" on their investment in utility plant and property.

Private utilities must pay state and federal income taxes along with any applicable property, franchise, sales, or other form of revenue taxes. The return portion of this type of revenue requirement pays for the private utility's interest expense on indebtedness, provides funds for a return to the utility's shareholders in the form of dividends, and leaves a balance for retained earnings and cash flow purposes.

2.5 Analyzing Cost of Service

After the total revenue requirement is determined, it is allocated to the users of the service. The allocation, usually analyzed through a cost of service analysis, reflects the cost relationships for producing and delivering services. A cost of service analysis requires three analytical steps:

1. Costs are ***functionalized*** or grouped into the various cost categories related to providing service (supply, distribution, pumping, etc.). This step is largely accomplished by the utility's accounting system.

2. The functionalized costs are then ***classified*** to specific cost components. Classification refers to the arrangement of the functionalized data into cost components. For example, a water utility's costs are typically classified as average day, peak day, or customer-related.

3. Once the costs are classified into components, they are proportionally ***allocated*** to the customer classes of service (residential, non-residential, irrigation, etc.). The allocation is based on each customer class' relative contribution to the cost component. For example, customer-related costs are allocated to each class of service based on the total number of customers in that class of service. Once costs are allocated, the revenues from each customer class of service required to achieve cost-based rates can be determined.

2.6 Designing Water Rates

Rates that meet the utility's objectives are designed based on both the revenue requirement and the cost of service analysis. This approach results in rates that are strictly cost-based and does not consider other non-cost based goals and objectives (conservation, economic development, ability to pay, revenue stability, etc.). In designed final proposed rates, factors such as ability to pay, continuity of past rate philosophy, economic development, ease of administration, and customer understanding may typically be taken into consideration[2].

2.7 Economic Theory and Rate Setting

One of the major justifications for a comprehensive rate study is founded in economic theory. Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained. This statement's implications on utility rate designs are significant. For example, a water utility usually incurs capacity-related costs to meet summer lawn watering needs. It follows that the customers who create excessive peak demands on the system and create the need for upsizing of the distribution system should pay for those over-sized facilities in proportion to their contribution to total peaking requirements. When costing and pricing techniques are refined, consumers have a more accurate understanding of what the commodity costs to produce and deliver. This price-equals-cost concept provides the basis for the subsequent analysis and comments.

> *"Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained."*

2.8 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set water rates. These principles and techniques will become the basis for the City's comprehensive water rate study.

[2] The recent Capistrano decision has limited a water utility's ability to establish tiered rates for purposes of encouraging water conservation. The Capistrano decision determined that the pricing of the tiers must have a cost-basis and cannot simply be punitive to encourage efficient use.

3. Development of the Potable Water Rate Study

3.1 Introduction

This section describes the development of the potable water rate study. Potable water is most easily described as "drinking water" and has been treated and delivered to the City's customers for human consumption and other uses. In contrast to potable water, non-potable or recycled water is not treated to a level suitable for human consumption and is therefore used for outdoor irrigation. This portion of the report will focus on the costs related to the City's potable water system. The potable water rate study includes the development of the revenue requirement, cost of service, and rate design analyses. Each of these analyses is discussed in more detail, including the specific steps to develop the City's cost-based and equitable potable water rates.

3.2 Development of the Potable Water Revenue Requirement

The revenue requirement analysis is the first analytical step in the comprehensive rate study process. This analysis determines the adequacy of the overall potable water rates. From this analysis, a determination can be made as to the overall level of rate adjustments needed to provide adequate and prudent funding for both operating and capital needs of the potable water system.

3.2.1 Determining the Revenue Requirement

In developing the City's potable water revenue requirement, the utility, as an enterprise fund, must financially "stand on its own" and be properly funded. As a result, the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the City's potable water system on a financially sound and prudent basis. Provided below is a more detailed discussion of the development of the revenue requirement analysis for the City.

3.2.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the City's potable water utility was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for a six-year projected time period (FY 2015 – FY 2020). This six year time frame was composed of Budget FY 2015 and the five projected years of FY 2016 – FY 2020. Reviewing a multi-year time period is recommended since it attempts to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City can begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most commonly used methodology by

municipal utilities to set their revenue requirement. This is also the methodology that the City has historically used to establish their potable water revenue requirements. Table 3-1 provides a summary of the "cash basis" approach and cost components used to develop the City's potable water revenue requirement.

Table 3–1
Overview of the City's "Cash Basis" Revenue Requirements

+	Water Operation and Maintenance Expenses
+	Transfers to R&R Fund (Rate Funded Capital)
+	Debt Service (P + I) – Existing and Future
±	Change in Working Capital
=	Total Potable Water Revenue Requirement
–	Miscellaneous Revenues
=	Net Revenue Requirement (Balance Required from Potable Rates)

Given a time period around which to develop the revenue requirement and a method to accumulate the costs; the focus shifts to the development and projection of the revenues and expenses of the City's potable water system.

The primary financial inputs in the development of the revenue requirement were the City's FY 2015 budget documents, 2014 billed customer and consumption data, and the City's potable water capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City's potable water revenue requirement analysis.

3.2.3 Projecting Rate and Other Miscellaneous Revenues

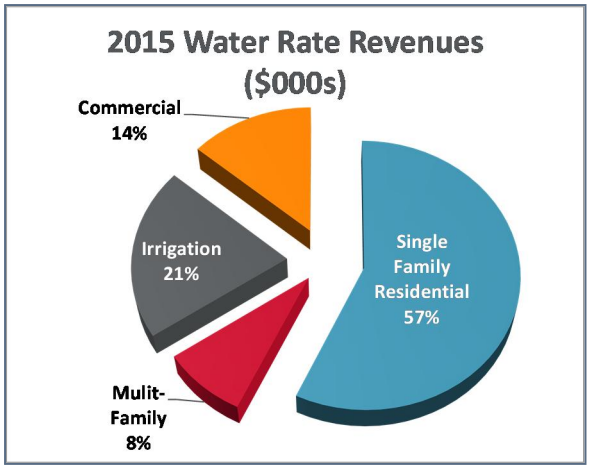
The first step in developing the revenue requirement analysis was to develop a projection of the potable water rate revenues, at present rate levels. In general, this process involved developing projected billing units for each customer group (e.g., residential, multi-family, commercial, etc.). The billing units for each customer group were then multiplied by the applicable current potable water rates. This method of independently calculating revenues links the projected revenues used within the analysis to the projected billing units. It also helps to confirm that the billing units used within the study are reasonable for purposes of projecting future revenues, allocating costs and, ultimately, establishing proposed rates.

". . . the State of California has recently implemented additional required conservation savings for 2015 which will impact the level of consumption and resulting consumption based revenues."

A key aspect of the projection of potable water rates was to develop a projection of consumption levels considering the current drought. In addition, the State of California has recently implemented additional required conservation savings for 2015 which will impact the level of consumption and resulting consumption based revenues. In discussion with City staff it was determined that calendar year 2014 consumption levels would

be reduced by approximately 10% for purposes of projecting revenues for FY 2015 and held flat at that level throughout the remaining 5-year period. To account for further reductions due to the State mandated conservation levels this study has developed drought rates which are discussed in detail in Section 3.4.7 of this report.

The City has separate rate schedules (structures) for its single-family, multi-family, commercial, and irrigation customers. The majority of the City's potable water rate revenues are derived from single-family customers. The City also has a senior discount rate and a low-income discount rate for single-family customers. The senior and low-income discount rates[3] are different rates and levels of discount. The rate discount provided is funded through the City's general fund and is not subsidized by other ratepayers. The City also serves a variety of multi-family, commercial and irrigation customers. In total, and at currently adopted rate levels, the City's potable water system is projected to receive approximately $16.4 million in rate revenue in FY 2015. Over time, the study has assumed a conservative level customer growth (1%/year) as well as overall consumptive growth based solely on increased population. By FY 2020, the rate revenues, assuming no rate adjustments, are projected to be approximately $18.1 million.



In addition to rate revenues, the potable water system also receives miscellaneous revenues. As noted above, the General Fund makes a transfer of funds to the water utility to fund the senior/low-income discount program. The City has other miscellaneous revenue sources. In total, the City is projected to annually receive approximately $950,000 in miscellaneous revenues over the projected planning horizon. This amount is anticipated to increase slightly over the projected five year time period and excludes the current drought penalty revenues.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the City's potable water utility has total projected revenues of approximately $18.6 million in FY 2015, increasing to approximately $19.1 million in FY 2020.

3.2.4 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the potable water system to operate and maintain the existing plant in service and to purchase water from Zone 7, the City's wholesale water provider. Potable water O&M was projected based on four (4) main budget categories: water conservation, water O&M, water purchases, and utility billing. O&M expenses, with the exception of water purchases were projected over the five year period at an assumed annual inflation rate of 3.0%. Water purchases from Zone 7 were projected based on the current Zone 7 rates and City's developed purchased water projections. The total O&M

[3] Under Proposition 218, a utility may not provide subsidies for senior citizens or low-income customers by increasing the water rates of the other customers. To legally provide this rate discount, the City transfers funds in from the City's General Fund to financially support this program.

expenses for the potable water system are approximately $15.7 million based on the FY 2015 budget. O&M expenses comprise approximately 85% of the total expenses incurred by the City. The cost of water from Zone 7 accounts for roughly half of the total costs associated with the City's water utility.

Over the five year planning horizon, the total O&M expenses are projected to increase to approximately $18.6 million by FY 2020 based on assumed inflationary impacts and increases in Zone 7 water purchases. It should be noted that the analysis used the current Zone 7 rate ($2.40) and does not include any future wholesale potable water rate increases from Zone 7. Any wholesale water rate increase from Zone 7 will be passed through to the City's customers when adopted by Zone 7.

3.2.5 Projecting Capital Funding Needs and Transfer Payments

A key component in the development of the water revenue requirement was properly and adequately funding capital improvement needs. One of the major issues facing many utilities across the U.S. is the amount of deferred capital projects and the funding pressure from growth/expansion-related improvements. The proper and adequate funding of capital projects is an important issue for all water utilities and is not just a local issue/concern of the City.

In general, there are three types of capital projects that a utility may need to fund. These include the following types:

- Renewal and replacement projects
- Growth/capacity expansion projects
- Regulatory-related projects

A renewal and replacement project is essentially maintaining the existing system that is in place today. As the existing plant becomes worn out, obsolete, etc. the utility should be making continuous investments to maintain the integrity of the facilities. In contrast to this, a utility may make capital investments to expand the capacity of facilities to accommodate future capacity needs (customers). Finally, certain projects may be a function of a regulatory requirement in which the Federal or State government mandates the need for an improvement to the system to meet a regulatory standard. Understanding these different types of capital projects is important because it may help to explain why costs are increasing and the cost drivers for any needed rate adjustment. In addition, and more importantly, the way in which projects are funded may vary by the type of capital project. For example, renewal and replacement projects may be paid for via rates and funded on a "pay-as-you-go basis". In contrast to this, growth or capacity expansion projects may be funded via the collection of development or water connection fees (i.e. growth-related charges) in which new development pays a proportional and equitable share of the cost of their connection (impact). Finally, regulatory projects may be funded by a variety of different means, which may include rates, long-term debt, grants, etc.

While the above discussion appears to neatly divide capital projects into three clearly defined categories, the reality of working with specific capital projects may be more complex. For example, a pump may be replaced, but while being replaced, it is up-sized to accommodate greater capacity. There are many projects that share these "joint" characteristics. At the same time, projects may not be "replacement" related, but rather "improvement" related.

For purposes of reviewing the capital project funding, City has segregated their capital plan into two components:

- Water Replacement Fund
- Water Expansion Fund

Each of these types of capital projects (funds) are discussed in more detail below.

WATER REPLACEMENT FUND -

The potable water replacement fund is intended to provide funding for the more routine renewal and replacement type projects. Provided below in Table 3-2 is a summary of the potable water replacement fund.

Table 3–2
Summary of the Potable Water Replacement Fund ($000)

	FY 2015	FY 2016	FY 2107	FY 2018	FY 2019	FY 2020
Beginning Fund Balance	**$12,834**	**$10,833**	**$7,822**	**$7,394**	**$7,739**	**$7,888**
Revenue						
Rate Funded Capital	$1,600	$1,825	$2,115	$2,250	$2,550	$2,800
Vineyard Ave 4th Tier Fee	43	45	46	48	49	51
Transfer from O&M Fund	0	0	0	0	0	0
Additional Revenue Bonds	0	0	0	0	0	0
Total Revenue	**$1,643**	**$1,870**	**$2,161**	**$2,298**	**$2,599**	**$2,851**
Water Repair and Replacement						
Bi-Electrical Panel Upgrades	$152	$0	$53	$0	$56	$0
Pressure Reducing Valve Imp - Hill	99	0	53	0	56	0
Bi-Annual Water Quality Imp	45	103	0	108	0	114
Annual Water Pump and Motor Repairs	277	103	105	108	111	114
Water System Master Plan Update	0	51	0	0	0	0
Annual Replacement of Water Meters	487	514	527	217	222	57
Annual Water Replacement Projects	450	514	527	921	946	1,085
Bi-An. Emergency Water Generator Overhaul	72	0	53	0	56	0
Water Tank Corrosion Repairs	200	0	211	0	222	286
Bi-Annual Control Valve Installations	156	0	132	0	167	0
Annual polybutylene replacement	93	128	132	135	139	143
General Fund - Utility Cut Patching	78	80	82	84	86	89
General Fund - CIP Engineering	220	257	264	379	389	400
Advance Metering Infrastructure	0	3,081	0	0	0	0
Backflow Admin Database Development	50	0	0	0	0	0
Water Rate Analysis	60	0	0	0	0	0
Water Telemetry Upgrades	0	51	53	0	0	0
Del Valle Parkway Water Main Ext	0	0	398	0	0	0
Total Water Repair and Replacement	**$2,439**	**$4,881**	**$2,589**	**$1,953**	**$2,450**	**$2,288**
To O&M Fund for Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
To Recycled Water Fund	**$1,205**	**$0**	**$0**	**$0**	**$0**	**$0**
Ending Fund Balance	**$10,833**	**$7,822**	**$7,394**	**$7,739**	**$7,888**	**$8,451**

As can be seen in Table 3-2, there are a number of projects which vary from year-to-year. A more detailed listing of the capital projects may be found on Exhibit 5a of the Technical Appendices. While the total amount of project may vary from year to year, the potable water replacement funding plan has attempted to provide a consistent funding source for the replacement fund. In this case, the potable water rates will annually fund an amount ranging from $1.6 million to $2.8 million (as highlighted in Table 3-2). As a point of reference, the City's annual depreciation expense is approximately $3.3 million. A desirable and recommended minimum funding target for rate funded capital is an amount equal to or greater than annual depreciation expense. While this financial plan has not fully met that target funding level of rates, the level of funding has been increased to a more prudent level. However, even with this increased funding, depending upon the timing of replacement capital projects, additional funding from rates may be needed at some point in time to address the renewal and replacement of existing assets.

WATER EXPANSION FUND –

The City also has certain expansion or capacity related water improvement projects. The City has a potable water expansion fund to track and fund these projects. Provided below in Table 3-3 is a summary of the potable water expansion fund and the expansion-related projects.

Table 3–3
Summary of the Potable Water Expansion Fund ($000)

	FY 2015	FY 2016	FY 2107	FY 2018	FY 2019	FY 2020
Beginning Fund Balance	**$3,017**	**$3,277**	**$3,397**	**$2,264**	**$2,510**	**$2,476**
Revenue						
Plus: Connection Fees	$300	$300	$300	$300	$300	$300
Transfers In	0	0	0	0	0	0
Transfers Out	0	0	0	0	0	0
SRF Loan - Recycled Water	0	0	0	0	0	0
Additional Revenue Bonds	0	0	0	0	0	0
Total Revenue	**$300**	**$300**	**$300**	**$300**	**$300**	**$300**
Water Expansion						
Upper Ruby Hill Tank	$0	$103	$897	$0	$0	$0
Pump and Motor Capacity Increase	0	0	264	0	278	0
Del Valle Parkway Water Main Ext	0	0	220	0	0	0
Water System Master Plan Update	0	26	0	0	0	0
General Fund - CIP Engineering	40	51	53	54	56	57
Total Water Expansion	**$40**	**$180**	**$1,433**	**$54**	**$334**	**$57**
To O&M Fund for Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
To Recycled Water Fund	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Ending Fund Balance	**$3,277**	**$3,397**	**$2,264**	**$2,510**	**$2,476**	**$2,719**

As shown in Table 3-3, these expansion-related projects are primarily funded from connection fees and existing expansion fund reserves. It should be noted that projects are included in both replacement and expansion as portions of specific projects are funded through both

replacement and expansions funds. However, none of the expansion related portion of the projects, shown in Table 3-3 are funded from rate revenues. As a result, there is no impact to user rates from the expansion- (growth) related, and funded, capital projects. A more detailed exhibit of the expansion fund can be found on Exhibit 5b of the Technical Appendices.

SUMMARY OF THE ANNUAL FUNDING OF CIP FROM RATES -

From Tables 3-2and 3-3 a total annual funding of capital projects from rates can be determined. This is the amount which is included within City's revenue requirement analysis. Provided below in Table 3-4 is a summary of the amount of rate funded capital for each year.

Table 3–4
Summary of the Annual Potable Water Rate Funded CIP ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Replacement Capital Projects	$1,600	$1,825	$2,115	$2,250	$2,550	$2,800
Expansion Capital Projects	0	0	0	0	0	0
Total CIP Funded From Rates	**$1,600**	**$1,825**	**$2,115**	**$2,250**	**$2,550**	**$2,800**

As noted previously, the City's annual depreciation expense is approximately $3.3 million (2014). This financial plan has placed the City's rate funding for CIP at $2.8 million by FY 2020. It is important to note and understand that depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds depreciation expense (i.e. $3.3 million) is both prudent and appropriate. In developing this financial plan, HDR and the City have attempted to minimize rate impacts while funding the planned capital improvement projects of the City.

3.2.6 Projection of Debt Service

The City currently has no outstanding debt for the potable water system. In addition, no new long-term debt issues are assumed over the projected five year period to fund the City's capital improvement program.

". . . no new long-term debt issues are assumed over the projected five year period."

3.2.7 Change in Working Capital

The final component of the revenue requirement analysis is change in working capital, or additional transfers to reserve funds to maintain prudent ending fund balances or for future funding of specific projects. The rate analysis assumes an annual transfer to the potable water system operating and maintenance reserve fund to maintain prudent reserve levels. No other transfers are included to the potable water replacement or expansion funds.

3.2.8 Summary of the Potable Water Revenue Requirements

Given the above projections of revenues and expenses, a summary of the potable water revenue requirement analysis can be developed. In developing the revenue requirement

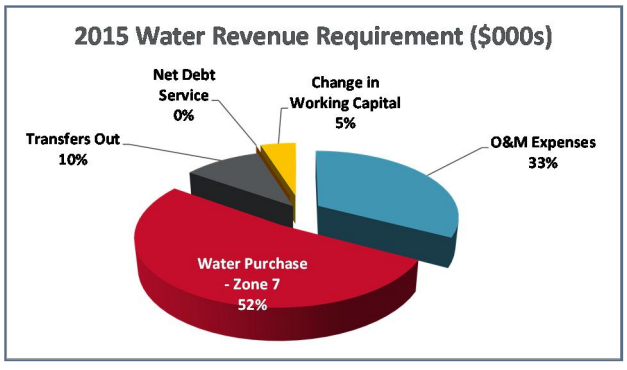
analysis, consideration was given to the financial planning considerations of the City. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational activities and capital projects throughout the projected time period. A focus of the analysis, and resulting rate projections, is based on meeting the potable water system renewal and replacement needs. Presented below in Table 3-5 is a summary of the City's projected potable water revenue requirement. Detailed exhibits of this analysis can be found in the Technical Appendices (Exhibits 1 – 7).

Table 3–5
Summary of the Potable Water Revenue Requirement Analysis ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$16,418	$16,941	$16,936	$17,212	$17,652	$18,111
Other Revenues	2,151	916	927	949	972	984
Total Revenues	**$18,569**	**$17,858**	**$17,862**	**$18,161**	**$18,624**	**$19,095**
Expenses						
O&M Expenses	$15,743	$16,358	$16,687	$17,298	$17,948	$18,611
Transfers Out	1,928	2,157	2,452	2,591	2,896	3,151
Net Debt Service	0	0	0	0	0	0
Change in Working Capital	898	235	266	283	312	423
Total Expenses	**$18,569**	**$18,751**	**$19,405**	**$20,173**	**$21,156**	**$22,184**
Bal./(Def.) of Funds	$0	($893)	($1,542)	($2,013)	($2,532)	($3,089)
Balance as % of Rev from Rates	0.0%	5.3%	9.1%	11.7%	14.3%	17.1%
Proposed Rate Adjustments						
Annual CPI Increases	0.0%	2.5%	2.5%	2.5%	2.5%	2.5%
Proposed Rate Adjustment	0.0%	5.5%	0.0%	0.0%	0.0%	0.0%
Annualized Revenue Impact [1]	**0.0%**	**5.4%**	**1.3%**	**1.3%**	**1.3%**	**1.3%**

[1] Annualized rate adjustment reflects the change in revenues based on the timing of the proposed rate change. For example, the CPI adjustments will take place January 1 of each year, or midway through the fiscal year while the rate adjustment is proposed for October 1, 2015.

As can be seen, the potable water revenue requirement has summed the O&M, transfers (i.e., rate funded capital), net debt service and the change in working capital. The total revenue requirement is then compared to the total sources of funds which include the rate revenues, at present rate levels, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the rate revenues to determine the level of rate adjustment needed to meet the revenue requirement. It is important to note the



"Bal./(Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over this project time period, the total deficiency of rates is 17.1%.

The revenue requirements developed in Table 3-5 has been developed to meet financial planning objectives of the City. More specifically, the City desires to adequately and prudently fund the potable water renewal and replacement needs. In doing so, any needed rate adjustments should avoid large adjustments in any single year. Table 3-5 has also included a set of proposed rate adjustments (yellow band) which are projected to be sufficient to meet the total revenue requirements over the projected time period. The proposed rate adjustments are a function of assumed inflation over this time period, coupled with the need to increase the capital improvement funding from rates (renewal and replacement funding).

3.2.9 Rate Adjustments / Rate Transition

As a part of the financial plan developed for City, consideration was given to the smooth transition of rates over time to the needed level of rate revenues. Presented below in Table 3-6 is a summary of the rate transition plan and single-family customer bill impacts.

Table 3–6
Summary of the Potable Water Rate Transition Plan and Single-Family Bill Impacts [1]

	Present Bill	FY 2016 Oct. 1, 2015	FY 2016 Jan 1 2016	FY 2017 Jan 1 2017	FY 2018 Jan 1 2018	FY 2019 Jan 1, 2019	FY 2020 Jan 1, 2020
Bi-Monthly Residential Bill [1]-	$77.84						
Proposed Rate Adjustment		**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Monthly Bill After Rate Adjust.		$81.05	$82.06	$83.09	$84.13	$85.18	$86.24
$ Change/Bi-Month		$3.21	$1.01	$1.03	$1.04	$1.05	$1.06
Cumulative Bi-Monthly Change		$3.21	$4.22	$5.25	$6.29	$7.34	$8.40

[1] – Bi-Monthly bill assuming a ¾" meter and 24 CCF of water consumption

The financial plan shown above has indicated the need for annual rate adjustments to adequately fund the City's operating and capital needs for the water utility. An important question to be addressed is what the impacts to customers may be as a result of the proposed rate adjustments over this five year period. Table 3-6 illustrates the impact to a typical bi-monthly residential bill as a result of the proposed adjustments. As can be seen, the current bi-monthly residential bill is $77.84/bi-month. With the proposed adjustments, the impacts will be approximately a $3.21/bi-month annual adjustment in October of FY 2016 and

"Cumulatively, the residential bill is projected to go from $77.84/bi-month to $86.24/bi-month, or a total change of $8.40/bi-month, transitioned over a five-year period."

approximately $1.00/bi-month with following year's proposed adjustments. Cumulatively, over the five year period the residential bill is projected to go from $77.84/bi-month to $86.24/bi-month, or a total change of $8.40/bi-monthly, transitioned over a five-year period.

3.2.10 Consultant's Conclusions

Based on the revenue requirement analysis developed herein, HDR has concluded that the City will need to adjust their potable water rates over the next five years (FY 2016 – FY 2020). HDR has reached this conclusion for the following reasons:

- Rate adjustments are necessary to increase the rate funding the City's capital improvement needs, of which a large portion is driven by the need to adequately fund renewal and replacement projects.
- Rates adjustments reflect the declining consumption due to overall per capita reductions due to low flow appurtenances as well as impacts of the drought.
- Rate adjustments are necessary to fund the City's replacement capital projects on a "pay-as-you-go" basis and avoid the need for the issuance of any long-term debt.
- The proposed rate adjustments maintain the City's strong financial health and provide long-term sustainable funding levels for the City.

In reaching this conclusion, HDR would recommend that the City adopt the proposed rates through FY 2020 in order to provide surety as to the availability of funding for the capital improvement program.

3.3 Development of the Potable Water Cost of Service Analysis

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the City's potable water system. This section will provide an overview of the potable water cost of service analysis developed for the City.

A cost of service analysis is concerned with the equitable allocation of the total revenue requirement between the various customer classes of service (e.g., residential and commercial). The previously developed potable water revenue requirement was utilized in the development of the cost of service analysis.

3.3.1 Objectives of a Cost of Service Study

There are two primary objectives in conducting a water cost of service analysis:

- Allocate the City's potable water revenue requirement among the customer classes of service, and
- Derive average unit costs for subsequent rate designs

The objectives of the cost of service analysis are different from determining a revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the fair and equitable manner to collect the revenue requirement.

The second rationale for conducting a cost of service analysis is to develop unit costs which can be used in the development of the final rate designs. The cost of service analysis provides a cost per unit of water consumption based on each customer class's equitable (proportional) share of costs. For example, a water utility incurs costs related to flow, average day, peak day, fire protection, and customer-related cost components. A water utility must build sufficient capacity to meet summer peak capacity needs. Therefore, those customers contributing to those peak demands should pay their proportional share of the costs to provide the capacity in the system. The unit costs provide the relationship between these components which can then be used to set cost-based rates.

3.3.2 Determining the Customer Classes of Service

The first step in a cost of service analysis is to determine the customer classes of service. Based on the current rates the classes of service used within the cost of service analysis were:

- Single-Family
- Multi-Family
- Commercial
- Irrigation

In determining classes of service for cost of service purposes, the objective is to group customers together into similar or homogeneous groups based upon facility requirements and/or flow characteristics. HDR reviewed the current customer classes of service used by the City and found them consistent with typical industry practices.

3.3.3 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the City's potable water system, a cost of service analysis is conducted. A cost of service study utilizes a three-step approach to review costs. These steps take the form of functionalization, classification, and allocation. Provided below is a detailed discussion of the potable water cost of service study conducted for the City, and the specific steps taken within the analysis. The approach used for the City's study reflects generally accepted cost of service methodologies as outlined in the AWWA M1 manual.

Water Cost of Service Analysis Terminology

Functionalization – The arrangement of the cost data by functional category (e.g., source of supply, treatment, etc.).

Classification – The assignment of functionalized costs to cost components (e.g., commodity, capacity, customer and fire protection related).

Allocation – Allocating the classified costs to each class of service based upon each class's proportional contribution to that specific cost component.

Commodity Costs – Costs that are classified as commodity related vary with the total flow of water (e.g., chemical use at a treatment plant).

Capacity Costs – Costs classified as capacity related vary with peak day or peak hour usage. Facilities are often designed and sized around meeting peak demands.

Fire Protection Costs – Costs that are related to fire protection services (e.g., hydrants, oversizing of storage and distribution mains).

Customer Costs – Costs classified as customer related vary with the number of customers on the system (e.g., metering costs).

Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (plant) data by major operating functions (e.g., transmission, storage, distribution). Within this study, there was a limited amount of functionalization of the cost data since it was largely accomplished within the City's system of accounts.

Classification of Costs

The second analytical task performed in a water cost of service study is the classification of the costs. Classification examines why the expenses were incurred or what type of need is being met. The following cost classifiers were used to develop the potable water cost of service analysis:

- **Commodity Related Costs:** Commodity costs are those costs which tend to vary with the total quantity of water consumed by a customer. Commodity costs are those incurred under average load (demand) conditions and are generally specified for a period of time such as a month or year. Chemicals or utilities (electricity) are examples of commodity-related cost as these costs tend to vary based upon the total flow of water.
- **Capacity Related Costs:** Capacity costs are those which vary with peak demand, or the maximum rates of flow to customers. System capacity is required when there are large demands for water placed upon the system (e.g., summer lawn watering). For water utilities, capacity related costs are generally related to the sizing of facilities needed to meet a customer's maximum water demand at any point in time. For example, portions of distribution storage reservoirs and mains (pipes) must be adequately sized for this particular type of requirement.
- **Customer Related Costs:** Customer costs are those cost which vary with the number of customers on the water system. They do not vary with system output or consumption levels. These costs are also sometimes referred to as readiness to serve or availability costs. Customer costs may also sometimes be further classified as either actual or weighted. Actual customer costs vary proportionally, from customer to customer, with the addition or deletion of a customer regardless of the size of the customer. An example of an actual customer cost is postage for mailing bills. This cost does not vary from customer to customer, regardless of the size or consumption characteristics of the customer. In contrast, a weighted customer cost reflects a disproportionate cost, from customer to customer, with the addition or deletion of a customer. Examples of weighted customer costs are items such as meter maintenance expenses, where a large industrial customer requires a significantly more expensive meter than a typical residential customer.
- **Fire Protection Related Costs:** Fire protection costs are those costs related to the public fire protection functions. Usually, such costs are those related to public fire hydrants and the over-sizing of mains and distribution storage reservoirs for fire protection purposes
- **Revenue Related Costs:** Some costs associated with the utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be a utility tax which is based on gross utility revenue.

Development of Allocation Factors

Once the classification process is complete, and the customer groups have been defined, the various classified costs were allocated to each customer group. The City's potable water classified costs were allocated to the various customer groups using the following allocation factors.

- **Commodity Allocation Factor:** As noted earlier, commodity-related costs vary with the total flow of water. Therefore, the commodity allocation factor was based on the projected total metered consumption plus losses for each class of service for the projected test period. As noted, the consumption reflects the impacts of the current drought, which can impact the results of the cost of service as it does not reflect 'normal' or typical consumption levels or patterns of use.
- **Capacity Allocation Factor:** The capacity allocation factor was developed based on the assumed contribution to peak day use of each class. Peak day use by customer class of service was estimated using assumed peaking factors for each customer group. In this particular case, the peaking factor was defined as the relationship between peak day contribution and average day use and determined for each customer group based on a review of the average month to peak month usage. Given an estimated peaking factor, the peak day contribution for each class of service was developed. Similar to the commodity allocation factor the peaking data reflects the impacts of the drought and therefore will impact the results of the cost of service analysis as customers respond differently to the conservation goals and programs.
- **Customer Allocation Factor:** Customer costs vary with the number of customers on the system. Two basic types of customer allocation factors were identified – actual and weighted. The allocation factors for actual customers were based on the projection of the number of customers developed within the revenue requirement. The weighted customer allocation factors is also broken down further into two factors which attempt to reflect the disproportionate costs associated with serving different types of customers. The first weighted customer factor is for customer service and accounting. This weighted customer allocation factor takes into account the fact that it may take more time to read a meter and process a bill for various customers. The second weighted customer allocation factor is for meters and services. This factor attempts to reflect the different costs associated with providing larger sized meters. For example, there is a significant cost difference associated with replacing a 3/4" meter compared to a six-inch meter. This cost difference is reflected within the allocation factor.
- **Public Fire Protection Allocation Factor:** The development of the allocation factor for public fire protection expenses involved an analysis of each class of service and their fire flow requirements. The analysis took into account the gallon per minute fire flow requirements in the event of a fire, along with the duration of the required flow. The fire flow rates used within the allocation factor were based on industry standards and similar experiences with other water cost of service studies. The minimum fire flow requirements are then multiplied by the number of customers in each class of service, and the assumed duration of the fire, to determine the class' prorated fire flow requirements.

- **Revenue Related Allocation Factor:** The revenue related allocation factor was developed from the projected rate revenues for FY 2015 for each customer class of service. These same revenues were used within the revenue requirement analysis discussed previously.

3.3.4 Summary of the Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the City's revenue requirement. The functionalized revenue requirement was then classified into their various cost components. The individual classification totals were then allocated to the various customer classes of service based on the appropriate allocation factors. The allocated expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility.

Table 3–7
Summary of the Potable Water Cost of Service Analysis ($000)

Class of Service	Present 2016 Rate Revenues	Allocated Costs	$ Difference	% Difference
Single-Family	$9,657	$10,126	($470)	4.9%
Multi-Family	1,440	1,365	75	-5.2%
Commercial	3,516	4,177	(661)	18.8%
Irrigation	2,329	2,166	163	-7.0%
Total	**$16,941**	**$17,834**	**($893)**	**5.3%**

The cost of service study attempted to align the operating and capital costs to each customer class with their respective benefit (proportional allocation). The results of the analysis show that some cost differences exist between the various customer classes of service. However, as noted the impacts of the current drought may skew the results of the cost of service analysis given specific customer response to the conservation requirements. Overall it appears that the allocated costs reasonably reflect the revenues of each customer class of service.

Given the range of assumptions that may be used in a cost of service analysis, a general "guideline" that may be considered when viewing a cost of service analysis is if a class is within +/- 5% of the overall required adjustment the class, than it may be considered as being within a "reasonable range" of paying its "fair share".[4] It is important to understand that a cost of service analysis is based on one year's data and corresponding customer information. Total flow and the costs incurred by the utility will change from year to year. As such, it is appropriate to determine whether these findings are consistent over time, and adjust accordingly. Establishing rates based on a single data point, such as the cost of service results for one year, may result in rates being adjusted, both up and down, that does not reflect the impacts customers have on the system. This is further impacted by the current drought and customer responses to the State mandated conservation.

[4] In this study, the overall balance for FY 2016 is 5.3%. Using this guideline, a class of service may be considered within the range of reasonableness if their adjustment is in the range of 0.3% to +10.3%.

3.3.5 Consultant's Conclusions and Recommendations

While some cost differences exist, the overall allocation of costs between customers appears to be reasonable. In reaching this conclusion, one of variables which may impact cost allocations is the trend of declining per capita consumption for residential customers, along with the current drought conditions within California and specifically the Bay Area. These conditions certainly have an impact upon consumptive use and cost allocations.

Customer responsiveness to the drought has resulted in an allocation of costs that dos not reflect how the system was designed and customer impacts on the system under "normal" conditions. The allocation of costs is based on many different components; however, the two primary components are related to average day use and peak day use. Both of these components are impacted by the current drought. First, average the consumption for customers has reduced in response to the drought. However, not all customer classes respond to the drought in the same manner. For example, residential customers may be able to reduce consumption at a higher percentage level than a commercial customer given the commercial customers needs to use water for business purposes. In this case, the average day allocation of costs would shift from one class to the other and may not reflect "normal" water conditions and burdens placed on the system. The second component is related to peak day, or how the customers place demands on the system. Similar to average day needs, the peak demands and responsiveness to the drought vary by customer class. For example, while a residential customer may respond and minimize outdoor watering and peak demands on the system, a commercial, or multi-family, customer may be able to entirely eliminate outdoor watering needs and peak demands on the system. These two different responses to the drought change the relationship of the cost allocations and do not reflect "normal" water conditions and how the system was designed to operate. This results in a cost of service analysis that does not reflect typical customer impacts on the system and would result in changing rates in the short-term based on one point in time, which does not reflect how customer typically utilize the system.

Given the changing usage patterns due to the current drought, HDR believes the focus of this study should be on the overall rate adjustment needs based on the City's need to fund capital improvement projects over the next five year period. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made since the results are significantly driven by consumptive use and usage demands. Given the current drought conditions, the consumptive use and usage demands during this time period may not be reflective of normal water conditions. Given that, HDR concluded that no adjustments in the cost relationships between the customer classes of service should be recommended at this time. As a result, the overall proposed revenue/rate adjustments will be applied equally across all customer classes of service.

3.4 Development of the Potable Water Rate Design

The final step of the City's comprehensive potable water rate study is the design of rates to collect the desired levels of revenues, based on the results of the prior analyses. In reviewing City's rates, consideration is given to the level of the rates and the structure of the rates.

3.4.1 Rate Design Criteria and Considerations

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the utility to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage efficient use, economic development, etc.)
- Provide revenue stability from month to month and year to year
- Promote efficient allocation of the resource
- Equitable and non-discriminatory (cost-based)
- Legally Defendable

Many contemporary rate economists and regulatory agencies recognize that equitable and cost-based rates should be of paramount importance and provide the primary guidance to utilities on rate structure and policy.

It is important that the City provide its customers with a proper price signal as to what their consumption and peaking (demand) requirements are costing. This goal may be approached through rate level and structure. When developing the proposed rate designs, all the above listed criteria were taken into consideration. However, it should be noted that it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into consideration the customer's ability to pay, and one which is cost-based. In designing rates, there are always trade-offs between these various goals and objectives.

3.4.2 Development of Cost-Based Potable Water Rates

As mentioned, developing cost-based and equitable rates is of paramount importance in developing proposed water rates. While always a key consideration in developing rates, meeting the legal requirements, and documenting the steps taken to meet the requirements, has been in the forefront with the recent legal challenges in the State of California on water rates. Given this, the development of the City's proposed potable water rates have been developed to meet the legal requirements of Proposition 218 (Prop. 218). A key component of Prop. 218 is the development of rates which reflect the cost of providing service and are proportionally allocated between the various customer classes of service. HDR would point out that there is no single methodology for equitably assigning costs to the various customer groups. The American Water Works Association M1 Manual clearly delineates various methodologies which may be used to establish cost-based rates. Unfortunately, Proposition 218 is not prescriptive. It simply requires the adoption of "cost-based" rates and does not provide a clear definition or methodology for establishing cost-based rates. Given that, HDR developed the City's proposed potable water rates based on generally accepted rate setting methodologies to meet the requirements of Proposition 218 and recent legal decisions to provide an administrative record of the steps taken to establish the City's potable water rates.

HDR is of the opinion that the proposed rates meet the industry definition of "cost-based" rates, along with the spirit (intent) and legal requirements of Proposition 218. HDR reaches this conclusion based upon the following:

- **The revenues derived from the potable water rates do not exceed the funds required to provide the property related service (i.e. potable water service).** The proposed rates are designed to collect the overall revenue requirements of the City.
- **The revenues derived from water rates shall not be used for any purpose other than that for which the fee or charge is imposed.** The revenues derived from the City's potable water rates are used exclusively to operate and maintain the City's water system.
- **The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel.** This study has focused almost exclusively on the issue of proportional assignment of costs to customer classes of service. The proposed rates have appropriately grouped customers into customer classes of service (single-family, multi-family, commercial, and irrigation) that reflect the varying consumption patterns and system requirements of each customer class of service. The grouping of customers and rates into these classes of service creates the equity and fairness expected under Proposition 218 by having differing rates by customer classes of service which reflect both the level of revenue to be collected by the utility, but also the manner in which these costs are incurred and equitably assigned to customer classes of service based upon their proportional impacts.

At its very core, Proposition 218 requires a water utility to establish cost-based rates for the services provided. However, like most propositions or voter's initiatives, Proposition 218 provided certain direction, but lacked clarity and definition in certain areas. Hence, there have been a number of lawsuits in recent years related to utility rates and Proposition 218. Most recently, in the *Capistrano Taxpayers Association, Inc.* v. *City of San Juan Capistrano*, the City of San Juan Capistrano (Capistrano) was challenged, among other items, over the cost-basis for the tiers (price blocks) of their tiered water rate structure. In this specific case, it appears that the key issue was the pricing of the upper blocks (3rd and 4th blocks) and the price/cost difference between the prior tiers pricing. The change in prices between Capistrano's tiers was significant, and was the main challenge by the plaintiffs claiming that the "punitive" pricing was not cost justified under Proposition 218. Capistrano believed that the pricing was justified under the constitutional requirement to use water efficiently and Capistrano viewed the pricing as penalty blocks for inefficient or wasteful use.

The initial ruling of the court in this case was not favorable to Capistrano. Capistrano appealed the court's decision, and the Appellate Court hearing this case recently upheld the lower court's decision as it pertained to the pricing of the tiers within the Capistrano's water rate design. In summary, the Appellate Court ruled that tiered rates are a valid rate structure under Proposition 218, but to be legally compliant with Proposition 218, the pricing of the tiers must be cost-based. Unless there is an appeal of this ruling to the California State Supreme Court, the *San Juan Capistrano* decision will continue the trend of more narrowly defining "cost-

based" rates, particularly as they relate to the pricing used in rate design. The Court's decision has greatly diminished the latitude for policy input of the legislative body in establishing a local utility's rates, but it has also placed a greater burden of proof on the utility to demonstrate the cost basis for tiered pricing.

The City has residential tiered rates with four usage/price tiers. As a part of this study, HDR developed a technical memorandum to supplement the water rate design discussion to clearly demonstrate and support the proposed residential water rates and tiered pricing. This technical memorandum is attached within the technical appendix to this report. It provides a more detailed discussion of the *San Juan Capistrano* decision and of the costing techniques and methodologies used to support the City's proposed residential tiered rate structure.

3.4.3 Summary of the Prior Recommendations

The revenue requirement analysis was used to determine the adequate and prudent level of funding needed to operate and maintain the City's potable water system. The revenue requirement reviewed the time period of FY 2015 – FY 2020. The results of the revenue requirement analysis indicated the need for annual rate adjustments for FY's 2016 – FY 2020. The proposed rates to be developed in this section of the report will assume these adjustments for each of the fiscal years reviewed. The cost of service analysis indicated some cost differences, but it was concluded that it would be prudent at this time, as a consequence of the drought conditions, to not make any interclass adjustments. Given this, the proposed rates were developed based on the results of the revenue requirement analysis.

3.4.4 Review of the City's Present and Proposed Single-Family Potable Water Rates

Provided below in Table 3-8 is a summary of the City's present and proposed single-family potable water rates. Residential customers are charged a bi-monthly meter charge based on the size of the meter serving the customer, and an increasing 4-tier consumption rate. The rates shown in Table 3-8 are bi-monthly rates (i.e. the charge for a 2-month period). The proposed rates for FY 2016 have been adjusted to reflect the cost of purchased water from Zone 7. Given this, the consumption charges have been increased to reflect the cost of Zone 7 water and increased approximately $0.30. In addition, the recycled water charge of $0.10 per CCF has been added to the second tier (21-40 CCF) and maintained for tiers three and four. These changes in the tiered consumption rates reflect the target increase of 5.5% to the overall revenues of the utility. Future CPI adjustments will be implemented on all components of the rates, both the fixed meter charge and consumption charges.

Table 3–8 Summary of the Present and Proposed Single-Family Potable Water Rates (Bi-Monthly)							
	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1, 2016	FY 2017 Jan. 1 2017	FY 2018 Jan. 1 2018	FY 2019 Jan. 1, 2019	FY 2020 Jan. 1, 2020
Proposed Rate Adjustment	**0.0%**	**5.5%**	**2.5**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Fixed Meter Charge ($/Acct.)							
5/8"	$17.62	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
Senior 5/8"	14.10	14.10	15.35	15.73	16.12	16.52	16.94
Senior 3/4"	21.13	21.13	23.01	23.59	24.17	24.78	25.40
Senior 1"	35.23	35.23	38.37	39.33	40.32	41.33	42.36
Senior 1 1/2"	70.46	70.46	76.73	78.65	80.61	82.63	84.69
Low Income 5/8"	12.33	12.33	12.64	12.96	13.28	13.61	13.95
Low Income 3/4"	18.49	18.49	18.95	19.43	19.91	20.41	20.92
Consumption Charge ($/CCF)							
0-20 CCF	$2.1000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000
21-40 CCF	2.3581	2.7581	2.7646	2.7712	2.7780	2.7849	2.7920
41-60 CCF	2.6825	2.9825	2.9946	3.0070	3.0197	3.0327	3.0460
60+ CCF	3.4520	3.7520	3.7801	3.8089	3.8384	3.8686	3.8996

As can be seen, the level of the rate adjustments shown in Table 3-8 is based upon the findings and conclusions from the revenue requirement study. It should be noted that the proposed CPI adjustments for FY 2016 – FY 2020 are estimated values only as the actual rates will be based on the actual inflationary increases from the prior year. This annual CPI increase will reflect the impact to operating costs incurred by the City to maintain and provide water service to customers. The increase will be based on the actual CPI from the prior 12 month period and customers will be noticed prior to the billing of the proposed rates. It should be noted that the Zone 7 rate will not be adjusted by the annual CPI adjustment, any increases in the rate charged by Zone 7 to the City will be passed through on the consumption charge when implemented by Zone 7 and the City has been notified of the rate change. As can be seen in Table 3-8, the City also has rates for a senior discount and a low-income discount which are funded through a transfer from the City's general fund. The audit committee recommended that the senior discount rate be adjusted from 20% to 15%; the proposed rates reflect this change.

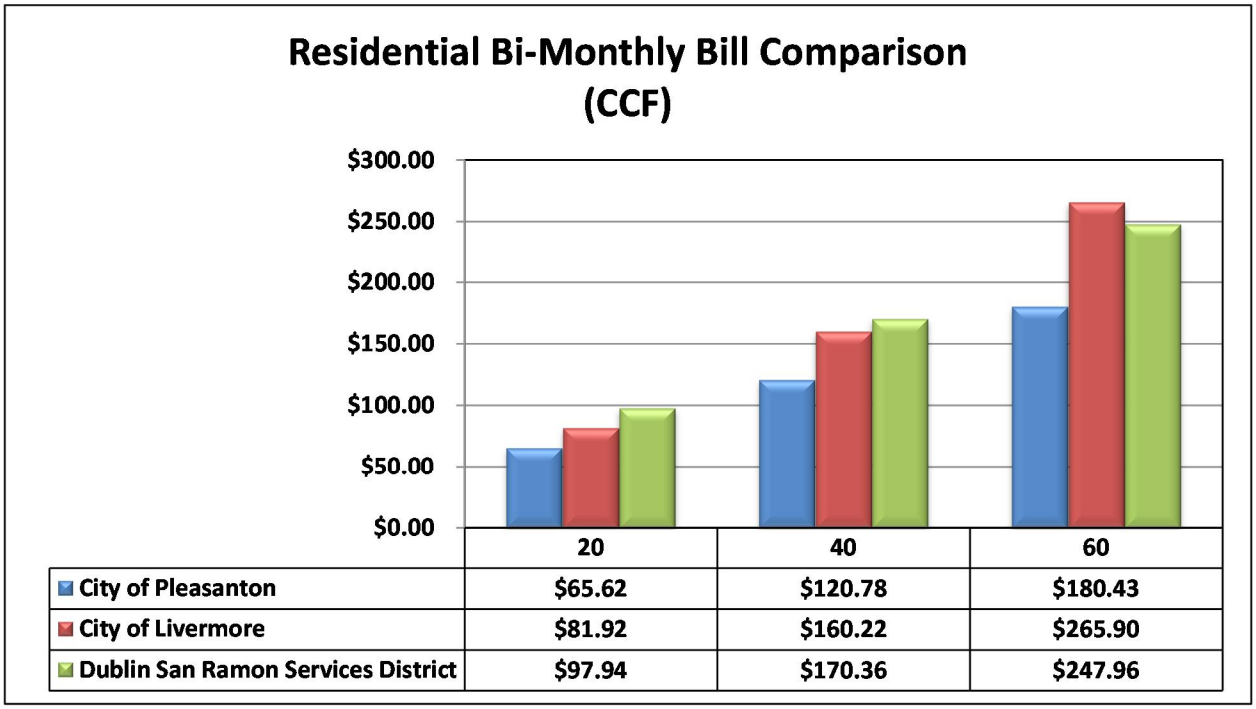
Provided below in Table 3-9 is a summary of proposed single-family potable water rates bill impacts for customers at various levels of consumption. The bill impacts in Table 3-9 are stated as bi-monthly bills.

Table 3–9
Bill Comparison - Single-Family Residential Potable Water Rates (Bi-Monthly Bill)

Consumption (CCF)	Present Bill	Proposed Bill Oct. 1 2015	$ Difference	% Difference
0	$17.62	$17.62	$0.00	0.00%
5	28.12	29.62	1.50	5.33%
10	38.62	41.62	3.00	7.77%
15	49.12	53.62	4.50	9.16%
25	71.41	79.41	8.00	11.20%
35	94.99	106.99	12.00	12.63%
45	120.19	135.69	15.50	12.90%
60	160.43	180.43	20.00	12.47%
80	229.47	255.47	26.00	11.33%
100	298.51	330.51	32.00	10.72%
125	384.81	424.31	39.50	10.26%
150	471.11	518.11	47.00	9.98%
180	574.67	630.67	56.00	9.74%
225	730.01	799.51	69.50	9.52%
300	988.91	1,080.91	92.00	9.30%

Assumes 5/8" meter

The impacts to customers was also compared to other local water providers. Even with the proposed water rates, effective October 1, 2015, the City's customer bi-monthly bills are lower than those of the two adjacent water providers.



	20	40	60
City of Pleasanton	$65.62	$120.78	$180.43
City of Livermore	$81.92	$160.22	$265.90
Dublin San Ramon Services District	$97.94	$170.36	$247.96

3.4.5 Review of the City's Present and Proposed Multi-Family and Commercial Potable Water Rates

Provided below in Table 3-10 is a summary of the City's present and proposed multi-family and commercial potable water rates. Similar to the residential rates, the multi-family and commercial customers are charged a fixed meter charge that varies by meter size. In addition to the fixed meter charge, the multi-family customers are charged a uniform consumption charge. Similar to the single-family rates, the proposed multi-family and commercial consumption charges for FY 2016 have been adjusted based on the cost of purchased water from Zone 7. No changes to the fixed charges have been proposed. However, when implementing the annual CPI adjustments, both the fixed charge and consumption charges will be adjusted. In addition, any increases in the rate charged by Zone 7 to the City will be passed through on the consumption charge.

Table 3-10
Summary of the Present and Proposed Multi-Family & Commercial Potable Water Rates (Bi-Monthly)

	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1, 2016	FY 2017 July 1 2017	FY 2018 July 1 2018	FY 2019 July 1, 2019	FY 2020 July 1, 2020
Proposed Rate Adjustment	**0.0%**	**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Fixed Meter Charge ($/Acct.)							
5/8"	$17.62	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
Consumption Charge ($/CCF)							
All Consumption	$2.4693	$2.7693	$2.7760	$2.7829	$2.7900	$2.7973	$2.8047

Similar to residential rate designs, the rate adjustments shown in Table 3-10 are based upon the findings and conclusions from the revenue requirement study.

3.4.6 Review of the City's Present and Proposed Irrigation Potable Water Rates

Provided below in Table 3-11 is a summary of the City's present and proposed Irrigation potable water rates. Similar to the multi-family and commercial rates, the irrigation customers are charged a fixed meter charge that varies by meter size and a uniform consumption charge.

Table 3-11 Summary of the Present and Proposed Irrigation Potable Water Rates (Bi-Monthly)							
	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1, 2016	FY 2017 Jan. 1 2017	FY 2018 Jan. 1 2018	FY 2019 Jan. 1, 2019	FY 2020 Jan. 1, 2020
Proposed Rate Adjustment	**0.0%**	**5.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Fixed Meter Charge ($/Acct.)							
5/8"	$17.62	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
Consumption Charge ($/CCF)							
All Consumption	$2.6152	$2.9152	$2.9256	$2.9362	$2.9471	$2.9583	$2.9698

This concludes the discussion of the proposed potable water rates. Detailed exhibits for the various rate designs are included within the water technical appendices.

3.4.7 Development of Potable Water Drought Rates

Drought rates are one of several "tools" to assist during a drought or water emergency. In the City's case, the drought rates will work in tandem with the City's other conservation programs, and specifically the City's excess use penalties (Ord. 2097) previously adopted by the City. It should be noted that the existing excess use penalty rates were reviewed with City staff and it was determined that the current approach is meeting the City's goals and objectives for the excess use penalties. Therefore, no changes to the excess use penalty rates were recommended.

When properly designed, drought rates address the issues of the financial/revenue impacts of decreased consumption. In a drought, water rates are one mechanism or tool used to encourage or create conservation savings. When a utility enters a drought stage, it is not uncommon for a utility to have a set of water drought rates to maintain sufficient revenues due to reductions in usage and to provide an incentive to induce a specified level of conservation savings.

The potable water rates being proposed in this water rate study assume "normal" water conditions. Under drought conditions, the City will need to have customers reduce their consumption and provide sufficient conservation savings to meet the City's conservation

savings goals (State mandated) under the various stages of drought. For purposes of establishing drought rates, four stages for water shortage and a target water savings for each stage were established in the City's water conservation plan. These water shortage stages are summarized below.

Stage 1 – Up to 20% water savings: Voluntary
Stage 2 – Up to 20% water savings: Mandatory
Stage 3 – Up to 35% water savings: Mandatory
Stage 4 – Over 35% water savings: Mandatory

To help achieve the needed savings in each drought stage, HDR developed a set of rates applicable to each stage. The overall targeted savings, or reductions in use, will be achieved through both "voluntary" savings and via price incentives. While pricing is not the purpose of drought rates, it simply provides the basis for collecting the target revenue needs, it does provide customers with the ability to control the water bill if they choose not to voluntarily participate in the conserving water. In developing the water shortage surcharges HDR has assumed that under each stage there will be some level of "voluntary" savings by the customers based on education and individual conservation practices. The remaining savings will need to be achieved through price incentives and price elasticity, responsiveness to changes in price. For purposes of developing the drought rate pricing, it was assumed that the savings in each stage would target the mid-point of the stage (e.g., State 3 = 20%-35%, or 27.5% average reduction in consumption). Provided below in Table 3-12 is a summary of the assumptions regarding voluntary versus price induced savings.

Table 3-12
Summary of the Estimated Voluntary Versus Price Induced Conservation Savings

Targeted Reduction Goal	Normal Conditions 0%	Voluntary Stage 1 20%	Mandatory Stage 2 20%	Mandatory Stage 3 35%	Mandatory Stage 4 >35%
Voluntary Savings	0.0%	5.0%	10.0%	15.5%	25.0%
Price Induced Savings	0.0%	0.0%	5.0%	12.0%	20.0%
Total Targeted Conservation Savings	0.0%	5.0%	15.0%	27.5%	45.0%

In developing the water shortage rates, the monthly meter charge remains fixed at the same level regardless of the drought stage. For purposes of this discussion, it is also assumed that the Zone 7 rate is also fixed, but it will change if Zone 7 modifies their wholesale rate to the City. Therefore, the portion of the water rate impacted by the water shortage rate is the local consumption charges of the water rates.

Based on the conservation savings estimated for each drought stage, the drought rates were developed to maintain the current level of revenues for each customer class of service. As noted, in addition to maintaining the current level of revenue to support operating costs, additional costs the City incurs during the drought were included to reflect the changes in costs at each stage. Provided below in Table 3-13 is a summary of the drought rates for each block.

Table 3-13 Summary of the Drought Rates – $/CCF					
	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
Single-Family					
Tier 1 – 0-20 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 2 – 21-40 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 3 – 41-60 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 4 – 60+ CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Multi-Family and Commercial					
All Consumption	$0.0000	$0.1385	$0.5400	$1.1631	$2.5145
Irrigation					
All Consumption	$0.0000	$0.1458	0.5655	$1.2244	$2.6470

The drought rates in Table 3-13 are added to the current rates in place at the time the drought stage is declared. For example, if the first tier rate is currently $2.4000/CCF and the City declares a Stage 2 drought, then the first tier rate will change to $2.9645/CCF ($2.4000 + $0.5645). These drought rates can be added to the City's proposed rates, at the appropriate drought stage level, effective October 1, 2015, as directed by the City Council. Implementation of these drought rates will help the City maintain revenue levels during drought related consumption reductions, provide additional pricing incentives to reduce consumption, and work in tandem with the City's excessive use penalties for inefficient water users.

Drought rates will be revised at the same time as potable water rates are adjusted starting in January 2016 with the first CPI adjustment. As noted, drought rates are primarily in place to provide sufficient revenues to meet operating and capital needs. Given this, when potable water rates are increased the level of revenues will increase. Subsequently, drought rates will need to be reviewed and updated based on the relationship to the current rates and revenue needs. This includes any CPI adjustments to the local distribution charges as well as the Zone 7 wholesale water rates. In this way the enactment of the drought rates will provide the same level of revenues prior to drought rates and resulting water conservation impacts.

To better understand how the drought rates work, Table 3-14 shows a comparison of the residential bi-monthly bill assuming a customer does, and does not, adjust their consumption in response to the requested savings in each drought stage.

Table 3-14 Single-Family Drought Rates Bill Impacts [1]					
	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
Water Conservation Plan Targeted Goals	**0%**	**20%**	**20%**	**35%**	**>35%**
Drought Rate Conservation Target	0.0%	5.0%	15.0%	27.5%	45.0%
Customer Using 16 CCF					
Assuming No Change in Use – 16 CCF	$56.02	$58.59	$65.07	$75.51	$96.68
Assuming Reduced Usage -					
Revised CCF Usage	16.0	15.0	14.0	12.0	9.0
Total Bi-Monthly Bill	$56.02	$56.03	$59.41	$61.04	$62.09
Customer Using 26 CCF					
Assuming No Change in Use – 26 CCF	$82.17	$86.38	$96.96	$114.06	$148.76
Assuming Reduced Usage -					
Revised CCF Usage	26.0	25.0	22.0	19.0	14.0
Total Bi-Monthly Bill	$82.17	$83.46	$83.65	$86.53	$87.08
Customer Using 44 CCF					
Assuming No Change in Use – 44 CCF					
Assuming Reduced Usage -	$132.71	$139.84	$157.74	$186.68	$245.40
Revised CCF Usage					
Total Bi-Monthly Bill	44.0	42.0	37.0	32.0	24.0

[1] Assumes a 5/8" single-family customer and bi-monthly billing period.

As can be seen in the above table, if a customer does not modify their consumption, their utility bill will increase substantially. However, if they do provide the requested savings, their bill will be similar to the "normal" water conditions bill. For example, a customer using 26 CCF currently pays $82.17/bi-month. If the City is in Stage 2 and the customer does not change their usage, then their bill will increase to $96.96. However, if they reduce their 26 CCF of usage by 4 CCF (15% reduction), their revised use of 22 CCF will be billed at $83.65./bi-month.

The same approach was developed for the multi-family and commercial customers. The estimated conservation savings were used to reduce the annual consumption and the drought rates were developed to maintain the current level of revenue plus the additional costs associated with each level of the drought.

As a part of this study, HDR developed a technical memorandum to supplement the development of the potable water drought rates to clearly demonstrate and support the pricing of the drought rates. This technical memorandum is attached within the technical appendix to this report.

3.5 Potable Water Rate Study Recommendations

Based on the results of the potable water rate study, HDR recommends the following:

- Potable water rates should be adjusted 5.5% based on the proposed rates as part of this study for October 1, 2015.
- When funds are available, increase the level of annual replacement funding to transition towards meeting annual depreciation expense levels.
- Future CPI related rate adjustments are necessary to meet operating and capital needs. These were estimated at 2.5% per year each January 1st starting in 2016 through 2020.
- The actual rates will be based on the actual CPI index for the year prior to the rate setting period.
- Drought rates should be adopted based on the need to maintain sufficient revenues for operating and capital needs.
- Drought rates should be adjusted whenever potable water rates are adjusted (Zone 7 pass through or CPI adjustments).

3.6 Summary of the Potable Water Rate Study

This completes the analysis for the City's potable water system. This study has provided a comprehensive review and development of proposed potable water rates, and potable water drought rates, for the City. Adoption of the proposed potable water rates and drought rates will allow the City to meet their current and projected potable water system financial obligations and capital improvement needs for the time period reviewed.

4. Development of the Recycled Water Rate Study

4.1 Introduction

In addition to potable water service, the City also purchases and supplies customers with recycled water for outdoor irrigation needs. The City is in the process of expanding and providing recycled water service to additional customers within the City's water system service area. This section of the report describes the development of the recycled water rate study. The recycled water rate study includes the development of the revenue requirement and rate design analyses. Each of these analyses is discussed in more detail, including the specific steps to develop the City's cost-based recycled water rates.

4.2 Development of the Recycled Water Revenue Requirement

The revenue requirement analysis is the first analytical step in the rate study process. This analysis determines the adequacy of the overall recycled water rates. From this analysis, a determination can be made as to the overall revenue needs to provide adequate and prudent funding for both operating and capital needs of the recycled water system.

4.2.1 Determining the Revenue Requirement

In developing the City's recycled water system revenue requirement, the utility, must financially "stand on its own" and be properly funded. As a result, the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the City's recycled water system on a financially sound and prudent basis.

Provided below is a more detailed discussion of the development of the revenue requirement analysis for the City's recycled water system.

4.2.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the City's recycled water system was to establish a time frame for the revenue requirement analysis. For this study, similar to the potable water rate study, the revenue requirement analysis was developed for a six-year projected time period (FY 2015 – FY 2020). This six year time frame was composed of Budget FY 2015 and the five projected years of FY 2016 – FY 2020. By anticipating future financial requirements, the City can begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most commonly used methodology by municipal utilities to set their revenue requirement. This is also the methodology that the City has historically used to establish their utility revenue requirements for its potable water rates.

Given a time period around which to develop the revenue requirement and a method to accumulate the costs; the focus shifts to the development and projection of the revenues and expenses of the City's recycled water system.

The primary financial inputs in the development of the revenue requirement were the City's FY 2015 budget documents, historical and projected recycled water consumption data, and the City's recycled water capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City's recycled water system revenue requirement analysis.

4.2.3 Projecting Rate and Other Miscellaneous Revenues

The first step in developing the recycled water revenue requirement was to develop a projection of the recycled water rate revenues, at present rate levels. In general, this process involved developing projected billing units for recycled water sales. The billing units were then multiplied by the applicable current recycled water rate to determine the current and proposed level of recycled water revenues.

A key aspect of the projection of recycled water revenues was to develop a projection of consumption levels given the expansion of the recycled water system and new customers connecting to the system. The analysis was based on the projection of potable water consumption data transitioning to recycled water service over the next several years. The City provided estimates of the number of customers and consumption that was used to develop the level of proposed consumption over the time period reviewed and used to establish the level of proposed revenues.

The City has charged recycled water customers a consumption charge established equal to 90% of the potable water irrigation rate. This rate relationship was maintained over the time period reviewed to determine if it adequately funded recycled water system costs. Based on the projection of recycled water consumption and the changes to the potable irrigation rate, the City's recycled water system is projected to receive approximately $103,000 in rate revenue in FY 2015. Given the transition of potable water customers to the recycled water system, the proposed rate revenues in FY 2020 are projected to be approximately $1.9 million.

In addition to rate revenues, the recycled water system also receives miscellaneous revenues. As noted in the potable water system revenue requirement, potable water rates transfer approximately $285,000 per year to the recycled water system to fund a portion of the overall recycled water system program costs. As noted, this transfer reflects customers being able to use potable water resources as the recycled water produced and distributed "frees up" additional potable water supply.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the City potable water utility has total projected revenues of approximately $388,000 in FY 2015, increasing to approximately $2.2 million in FY 2020.

4.2.4 Projecting Operation and Maintenance Expenses

As the City begins to expand the recycled water system additional operation and maintenance (O&M) expenses will be incurred to operate and maintain the existing plant in service and to purchase recycled water. The recycled water O&M was based on the FY 2015 and FY 2016 estimated budget. O&M costs are projected to be approximately $368,000 in FY 2016 increasing to approximately $449,000 in FY 2020 based on estimated inflation. The City also incurs costs to purchase recycled water from the Dublin San Ramon Services District and the City of Livermore. Projections of purchased recycled water were based on current rates and projected based on the increase in recycled water demands. In total, purchased recycled water supply costs are approximately $233,000 in FY 2016 increasing to approximately $703,000 in FY 2020, based on projected demands.

The total operation and maintenance expenses for the recycled water system are approximately $600,000 for FY 2016, based on the FY 2015 budget. Over the five year planning horizon, the total O&M expenses are projected to increase to approximately $1.2 million by FY 2020 based on additional O&M needs to maintain the expanded recycled water system and increase in purchased recycled water costs, as a result of increased demands.

4.2.5 Projecting Capital Funding Needs and Transfer Payments

At this time, the recycled water system does not have an established renewal and replacement (R&R) fund or expansion fund. As part of this study, the analysis reviewed the ability to establish a renewal and replacement fund for the recycled water system as rate revenues were available to support it. Table 4-1 is a summary of the amount of rate funded capital for each year.

Table 4-1
Summary of the Annual Recycled Water System Renewal and Replacement Funding ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Renewal and Replacement Funding	$0	$0	$0	$75	$200	$275

As can be seen, the projections of recycled water revenues, based on 90% of the potable irrigation rate, allow for the City to slowly begin to develop a transfer of funds to the renewal and replacement fund for the recycled water system over the time period reviewed. The City should increase this level of funding when revenues are available to support future replacement of the recycled water system. As the recycled water system matures and expands, the development of an expansion fund will also be necessary to include the revenues received from recycled water connection fees. .

4.2.6 Projection of Debt Service

The City has recently incurred long-term debt to fund the improvements necessary to provide recycled water system service to additional customers. The annual debt service payment is

estimated to be approximately $750,000 starting in FY 2017. At this time, no additional long-term debt has been included within the analysis. However, it should be noted that future capital needs will be necessary to continue to expand the recycled water system and the City will evaluate the funding available at that time.

4.2.7 Summary of the Recycled Water Revenue Requirements

Given the above projections of revenues and expenses, a summary of the recycled water revenue requirement analysis can be developed. In developing the revenue requirement analysis, consideration was given to the financial planning considerations of the City. A focus of the analysis, and resulting rate projections, is based on maintaining the rate relationship to the potable irrigation rate and begin to provide funding for the renewal and replacement fund. Presented below in Table 4-2 is a summary of the City's projected recycled water revenue requirement. Detailed exhibits of this analysis can be found in the Technical Appendices (Exhibits 1 – 4).

Table 4-2
Summary of the Recycled Water Revenue Requirement Analysis ($000)

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$103	$614	$1,174	$1,556	$1,777	$1,881
Other Revenues	285	288	291	294	297	300
Total Revenues	**$388**	**$902**	**$1,465**	**$1,850**	**$2,074**	**$2,181**
Expenses						
O&M Expenses	$44	$600	$854	$1,009	$1,102	$1,152
Transfers	0	0	0	75	200	275
Net Debt Service	0	0	750	750	750	750
Change in Working Capital	0	0	0	0	0	0
Total Expenses	**$44**	**$600**	**$1,604**	**$1,834**	**$2,052**	**$2,177**
Bal/(Def.) of Funds	$344	$301	($140)	$16	$21	$4
Balance as % of Rev from Rates	-335.5%	-49.1%	11.9%	-1.0%	-1.2%	-0.2%
Proposed Rate Adjustments	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

As can be seen, the recycled water revenue requirement has summed the O&M, transfers (i.e., rate funded capital), and debt service. The total revenue requirement is then compared to the total sources of funds which include the rate revenues, at projected levels, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. Over this project time period, the projected recycled water revenues, assuming adjustments based on the potable water irrigation rate are implemented, are sufficient to fund the operating and capital needs of the recycled water system.[5]

[5] Implicit to the recycled water rates and this conclusion is any adjustment to the potable irrigation water rate will result in a rate adjustment for recycled water since the recycled water rate is set at 90% of the potable irrigation rate.

The revenue requirements developed in Table 4-2 has been developed to meet financial planning objectives of the City's recycled water system. The proposed rate adjustments are based on maintaining the cost/price relationship between the proposed potable irrigation rate and the recycled water rate of 90%.

4.2.8 Consultant's Conclusions

Based on the revenue requirement analysis developed herein, HDR has concluded that the City's recycled water rates are sufficient when the rate relationship to the proposed potable water irrigation rate is maintained. HDR has reached this conclusion for the following reasons:

- The projected level of revenue sufficiently funds the O&M needs of the recycled water system.
- The projected level of revenues allows for the development of a renewal and replacement fund for the recycled water system.
- The proposed level of revenues adequately funds the annual long-term debt payments for providing recycled water system capital improvements.

4.3 Development of the Recycled Water Rate Design

The final step of the City's recycled water rate study is the design of recycled water rates to collect the desired levels of revenues and meet the recycled water system operating and capital needs. In reviewing City's recycled water rates, consideration is given to the level of the rates and the structure of the rates.

4.3.1 Development of the Recycled Water Rates

As noted, the recycled water rates are based on 90% of the potable irrigation rate. This is a common method of establishing recycled water rates in California. During the development of the study, this method of establishing the recycled water system rate was discussed and alternative methods reviewed with City staff and the City's Finance Committee. In those discussions it was determined that the current method, based on a percentage of potable irrigation rates, would be maintained over this rate setting period. This relationship reflects the fact that the use of recycled water offsets the need to develop additional supplies or purchase additional potable water from Zone 7. This provides an incentive for customers to use recycled water for outdoor watering needs, and is funded, in part, through potable water rates by customers using water in the upper tiers for residential customer which have been established as the tiers for outdoor watering. This provides the nexus for offsetting costs and maintaining the relationship to 90% of the irrigation rate as it is all outdoor watering needs. As a result, the analysis has assumed an increase in the recycled water rates based on the proposed potable irrigation rates over the 5-year time period (FY 2016 – FY 2020).

4.3.2 Review of the City's Present and Proposed Recycled Water Rates

Provided below in Table 4-3 is a summary of the City's present and proposed recycled water rates. The City currently charges a consumption charge only on all usage by the recycled water

customer. The proposed rates below assume the adoption of the potable irrigation rates and maintain the 90% relationship to that rate.

Table 4-3
Summary of the Present and Proposed Recycled Water Rates

	Present Rate	FY 2016 Oct. 1, 2015	FY 2016 Jan. 1, 2016	FY 2017 Jan. 1 2017	FY 2018 Jan. 1 2018	FY 2019 Jan. 1, 2019	FY 2020 Jan. 1, 2020
Consumption Charge ($/CCF)							
All Usage	$2.3537	$2.6237	$2.6330	$2.6426	$2.6524	$2.6625	$2.6728

As can be seen, the level of the rate adjustments shown in Table 4-3 is based upon the relationship to the potable irrigation rate. As noted in the revenue requirement analysis the resulting level of revenues result in sufficiently funding the operating and capital needs of the recycled water system. As noted in the potable water rate designs, the proposed adjustments for FY 2016 – FY 2020 are estimated values only as the actual rates will be based on the actual inflationary increases from the prior year in the potable irrigation rate.

4.4 Recycled Water Rate Study Recommendations

Based on the results of the recycled water rate study, HDR recommends the following:

- Maintain the existing basis for the recycled water rate of 90% of the potable water irrigation rate.
- Adjust the recycled water rate when adjusting the potable water rates.
- Begin to establish the replacement fund for the recycled water fund for future system repair and replacements.

4.5 Summary of the Recycled Water Rate Study

This completes the analysis for the City's recycled water system. This study has provided a comprehensive review and development of proposed recycled water rates for the City. Adoption of the proposed recycled water rates will allow the City to meet their current and projected recycled water system financial obligations and capital improvement needs for the time period reviewed.

Technical Appendix A – Potable Water Analysis

City of Pleasanton
Water Utility Rate Study
Summary of the Water Revenue Requirement - Potable Water
Exhibit 1

	Budgeted	Projected				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$16,417,940	$16,941,244	$16,935,515	$17,211,724	$17,651,960	$18,110,694
Miscellaneous Revenues	2,151,007	916,327	926,851	948,780	971,644	983,918
Total Revenues	**$18,568,947**	**$17,857,570**	**$17,862,366**	**$18,160,504**	**$18,623,603**	**$19,094,612**
Expenses						
Total	$15,742,853	$16,357,876	$16,686,858	$17,298,475	$17,948,119	$18,610,599
Total Operations & Maintenance	**$15,742,853**	**$16,357,876**	**$16,686,858**	**$17,298,475**	**$17,948,119**	**$18,610,599**
Transfers Out	**$1,928,000**	**$2,157,355**	**$2,451,791**	**$2,591,311**	**$2,895,916**	**$3,150,608**
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Change in Working Capital +/-	**$898,094**	**$235,428**	**$265,949**	**$277,174**	**$298,973**	**$403,398**
Total Revenue Requirement	**$18,568,947**	**$18,750,659**	**$19,404,599**	**$20,166,960**	**$21,143,008**	**$22,164,605**
Bal/(Def) of Funds	**$0**	**($893,088)**	**($1,542,232)**	**($2,006,456)**	**($2,519,405)**	**($3,069,993)**
Balance a % of Rate Adj. Required	**0.0%**	**5.3%**	**9.1%**	**11.7%**	**14.3%**	**17.0%**
Annual CPI Increases [1]	***0.0%***	***2.5%***	***2.5%***	***2.5%***	***2.5%***	***2.5%***
Proposed Rate Adjustment [1]	***0.0%***	***5.5%***	***0.0%***	***0.0%***	***0.0%***	***0.0%***
Total Proposed Annual Rate Adjustment	**0.0%**	**5.4%**	**1.3%**	**1.3%**	**1.3%**	**1.3%**
Total Additional Revenue	**$0**	**$893,088**	**$1,542,232**	**$2,006,456**	**$2,519,405**	**$3,069,993**
Total Bal/(Def) of Funds After Adj.	**$0**	**($0)**	**$0**	**($0)**	**$0**	**$0**
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Debt Service Coverage Ratio (all debt)						
Before Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A
After Needed Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A
After Proposed Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A
Average Residential Bi-Monthly Customer Bill	$77.84	(Current rates; 3/4" Meter + 24 CCF bi-monthly)				
Customer Bill on Proposed Adjustment	$77.84	$82.02	$83.05	$84.09	$85.14	$86.20
Bill Difference - Monthly	(0.00)	4.18	1.03	1.04	1.05	1.06
Cumulative Bill Difference	(0.00)	4.18	5.21	6.24	7.30	8.36
Operations Fund - Ending Balance	**$8,218,305**	**$8,453,732**	**$8,719,682**	**$8,996,855**	**$9,295,828**	**$9,699,227**

City of Pleasanton
Water Utility Rate Study
Escalations
Exhibit 2

	Budgeted	Projected					
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	*Notes:*
Revenues:							
Res - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Irr - Customer Growth	Budget	-5.0%	-15.0%	-15.0%	-10.0%	-5.0%	
Com - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Recycled Water - Cust. Growth	Budget	376.2%	140.0%	50.0%	5.6%	5.3%	
All - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Single-Family - Consumption Growth	Budget	7.5%	4.8%	6.9%	6.5%	4.8%	
Multi-Family - Consumption Growth	Budget	12.5%	7.5%	10.0%	7.0%	5.0%	
Irrigation - Consumption Growth	Budget	-5.0%	-15.0%	-15.0%	-10.0%	-5.0%	
Commercial - Consumption Growth	Budget	4.0%	4.0%	4.0%	3.5%	3.5%	
Miscellaneous Revenues	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses:							
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
General O&M	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Materials & Supplies	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Equipment	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
Miscellaneous	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	
Purchased Water - Recycled	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
Purchased Water - Zone 7	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	
Interest:	0.5%	0.5%	0.5%	0.8%	1.0%	1.0%	
New Debt Service:							
Low Interest Loans							
Term in Years	20	20	20	20	20	20	
Rate	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Revenue Bond							
Term in Years	20	20	20	20	20	20	
Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	

City of Pleasanton
Water Utility Rate Study
Revenue Requirement - Potable Water
Exhibit 3

	Budgeted	Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes:*
Revenues							
Rate Revenues							
Fixed Revenue							
Single Family Residential	$2,735,976	$2,763,335	$2,790,969	$2,818,879	$2,847,067	$2,875,538	As Res - Customer Growth
Mulit-Family	296,082	299,042	302,033	305,053	308,104	311,185	As Res - Customer Growth
Irrigation	624,034	592,832	503,907	428,321	385,489	366,215	As Irr - Customer Growth
Commercial	667,019	673,689	680,426	687,230	694,103	701,044	As Com - Customer Growth
Total Fixed Revenue	4,323,110	4,328,899	4,277,335	4,239,483	4,234,763	4,253,981	
Consumption Revenue							
Single Family Residential	$6,412,464	$6,893,398	$7,225,904	$7,721,144	$8,220,191	$8,617,711	As Single-Family - Consumption Growth
Mulit-Family	1,014,082	1,140,841	1,226,405	1,349,045	1,443,479	1,515,654	As Multi-Family - Consumption Growth
Irrigation	3,076,778	2,922,938	2,484,498	2,111,824	1,900,641	1,805,610	As Irrigation - Consumption Growth
Commercial	1,591,507	1,655,167	1,721,374	1,790,228	1,852,886	1,917,737	As Commercial - Consumption Growth
Total Consumption Revenue	$12,094,830	$12,612,345	$12,658,181	$12,972,241	$13,417,197	$13,856,713	
Total Rate Revenues	$16,417,940	$16,941,244	$16,935,515	$17,211,724	$17,651,960	$18,110,694	
Other Revenues:							
Meter Sales	$40,000	$40,400	$40,804	$41,212	$41,624	$42,040	As Miscellaneous Revenues
Federal/State Grants	0	0	0	0	0	0	As Miscellaneous Revenues
Backflow Admin Fees	180,000	181,800	183,618	185,454	187,309	189,182	As Miscellaneous Revenues
Drought Penalties	1,245,000	0	0	0	0	0	Projected FY 2015 Revenues
Miscellaneous	0	0	0	0	0	0	As Miscellaneous Revenues
Interfund Water Sales	0	0	0	0	0	0	Included in Revenue Projections
Interfund Reimbursement	386,386	390,250	394,152	398,094	402,075	406,096	As Miscellaneous Revenues
Interest Income	20,546	21,134	21,799	33,738	46,479	48,496	Calculated
In - Employee Benefit Fund/Implied Subsidy	35,075	36,303	37,573	38,888	40,249	41,658	As Benefits
In - Senior Discount (funded by General Fund)	244,000	246,440	248,904	251,393	253,907	256,446	As All - Customer Growth
Total Other Revenues	$2,151,007	$916,327	$926,851	$948,780	$971,644	$983,918	
Total Revenues	**$18,568,947**	**$17,857,570**	**$17,862,366**	**$18,160,504**	**$18,623,603**	**$19,094,612**	
Expenses							
Water Planning	$0	$0	$0	$0	$0	$0	As General O&M
Water Conservation	325,338	335,098	345,151	355,506	366,171	377,156	As General O&M
Water O&M	4,809,748	4,718,779	4,843,309	4,988,608	5,138,266	5,292,414	As General O&M
Water Purchase - Zone 7	9,667,359	10,335,378	10,500,720	10,926,753	11,385,245	11,850,838	Flat - Direct Pass Through
Utility Billing	940,408	968,620	997,679	1,027,609	1,058,437	1,090,191	As Salary
Total	$15,742,853	$16,357,876	$16,686,858	$17,298,475	$17,948,119	$18,610,599	
Total Operations & Maintenance	**$15,742,853**	**$16,357,876**	**$16,686,858**	**$17,298,475**	**$17,948,119**	**$18,610,599**	
Transfers Out							
Out - Replacment Fund for Recycled Water Rev	$285,000	$287,850	$290,729	$293,636	$296,572	$299,538	As All - Customer Growth
Out - Replacment Fund for Vineyard Ave 4th Tier f	43,000	44,505	46,063	47,675	49,343	51,071	As Equipment
Rate Funded Capital - To R&R Fund	1,600,000	1,825,000	2,115,000	2,250,000	2,550,000	2,800,000	2014 Dep = $3,327,239
Total Transfers Out	**$1,928,000**	**$2,157,355**	**$2,451,791**	**$2,591,311**	**$2,895,916**	**$3,150,608**	

City of Pleasanton
Water Utility Rate Study
Revenue Requirement - Potable Water
Exhibit 3

	Budgeted	Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes:*
Debt Service							
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0	$0	Calculated @ 5% for 20 yrs
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0	0	Calculated @ 5% for 20 yrs
Total Debt Service	$0	$0	$0	$0	$0	$0	
LESS: Other Funding							
Expansion Fund for Debt	$0	$0	$0	$0	$0	$0	
R&R Fund for Debt	0	0	0	0	0	0	
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Change in Working Capital +/-							
To/From Operating Reserve	$898,094	$235,428	$265,949	$277,174	$298,973	$403,398	
To/(From) Water Expansion Fund	0	0	0	0	0	0	
To/(From) Water Replacement Fund	0	0	0	0	0	0	
Total Change in Working Capital +/-	**$898,094**	**$235,428**	**$265,949**	**$277,174**	**$298,973**	**$403,398**	
Total Revenue Requirement	**$18,568,947**	**$18,750,659**	**$19,404,599**	**$20,166,960**	**$21,143,008**	**$22,164,605**	
Bal/(Def) of Funds	**$0**	**($893,088)**	**($1,542,232)**	**($2,006,456)**	**($2,519,405)**	**($3,069,993)**	
Balance a % of Rate Adj. Required	**0.0%**	**5.3%**	**9.1%**	**11.7%**	**14.3%**	**17.0%**	
Annual CPI Increases [1]	**0.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	
Months of Adjustment	**12**	**6**	**6**	**6**	**6**	**6**	
Add'l Revenue with CPI Adj	**$0**	**$207,695**	**$628,317**	**$1,077,211**	**$1,566,081**	**$2,091,782**	
Bal/(Def) After CIP Adj.	**$0**	**($685,393)**	**($913,916)**	**($929,245)**	**($953,324)**	**($978,212)**	
Proposed Rate Adjustment [1]	**0.0%**	**5.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	
Months of Adjustment	**12**	**9**	**12**	**12**	**12**	**12**	
Add'l Revenue with Rate Adj.	**$0**	**$685,393**	**$913,916**	**$929,245**	**$953,324**	**$978,212**	
Bal/(Def) After Rate Adj.	**$0**	**($0)**	**$0**	**($0)**	**($0)**	**$0**	
Total Proposed Annual Rate Adjustment	**0.0%**	**5.4%**	**1.3%**	**1.3%**	**1.3%**	**1.3%**	
Total Additional Revenue	**$0**	**$893,088**	**$1,542,232**	**$2,006,456**	**$2,519,405**	**$3,069,993**	
Total Bal/(Def) of Funds After Adj.	**$0**	**($0)**	**$0**	**($0)**	**$0**	**$0**	
Add'l Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

City of Pleasanton
Water Utility Rate Study
Revenue Requirement - Potable Water
Exhibit 3

	Budgeted	Projected					
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	***Notes:***
Average Residential Bi-Monthly Customer Bill	$77.84	(Current rates; 3/4" Meter + 24 CCF bi-monthly)					
Customer Bill on Proposed Adjustment	$77.84	$82.02	$83.05	$84.09	$85.14	$86.20	
Bill Difference - Monthly	(0.00)	4.18	1.03	1.04	1.05	1.06	
Cumulative Bill Difference	(0.00)	4.18	5.21	6.24	7.30	8.36	
Debt Service Coverage Ratio (all debt)							
Before Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A	
After Needed Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A	
After Proposed Rate Adjustment	N/A	N/A	N/A	N/A	N/A	N/A	
Reserve Funds							
Operations Fund							
Beginning Balance	$7,320,211	$8,218,305	$8,453,732	$8,719,682	$8,996,855	$9,295,828	
Plus: Additions	898,094	235,428	265,949	277,174	298,973	403,398	
Less: Uses of Funds	0	0	0	0	0	0	
Ending Balance	$8,218,305	$8,453,732	$8,719,682	$8,996,855	$9,295,828	$9,699,227	
Minimum Fund Balance - 90 days O&M	*$3,881,799*	*$4,033,449*	*$4,114,568*	*$4,265,377*	*$4,425,564*	*$4,588,915*	
Ending Fund Balance/(Deficiency)	*$4,336,506*	*$4,420,284*	*$4,605,114*	*$4,731,478*	*$4,870,265*	*$5,110,312*	

City of Pleasanton
Water Utility Rate Study
Exhibit 4
Purchased Water - Zone 7

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes*
Zone 7 Water Sales Est.	$9,821,095	$10,509,479	$10,679,897	$11,119,012	$11,591,583	$12,071,473	
Assumed Rate ($/CCF)	*$2.40*	*$2.40*	*$2.40*	*$2.40*	*$2.40*	*$2.40*	As Purchased Water - Zone 7
Assumed Volume (CCF)	*4,092,123*	*4,378,950*	*4,449,957*	*4,632,922*	*4,829,826*	*5,029,780*	As All - Customer Growth
Zone 7 Water Sales Calculation							
Fixed Charge							
# of Meters	3	3	3	3	3	3	
$/Meter/Month	$144.00	$148.00	$148.00	$148.00	$148.00	$148.00	
Total Fixed Charges	$5,184	$5,328	$5,328	$5,328	$5,328	$5,328	
Consumption Charge							***Rate ($/CCF)***
0 - 3,300 CCF	$13,723	$13,723	$13,723	$13,723	$13,723	$13,723	$4.159
3,300 - 33,300 CCF	98,886	98,886	98,886	98,886	98,886	98,886	$3.330
33,300 - 333,300 CCF	797,146	797,146	797,146	797,146	797,146	797,146	$2.655
333,300 + CCF	8,752,419	9,420,295	9,585,636	10,011,669	10,470,161	10,935,754	$2.329
Total Water Sales	$9,662,175	$10,330,050	$10,495,392	$10,921,425	$11,379,917	$11,845,510	
Total Zone 7 Water Sales Calculation	$9,667,359	$10,335,378	$10,500,720	$10,926,753	$11,385,245	$11,850,838	

City of Pleasanton
Water Utility Rate Study
Renewal & Replacement Fund
Exhibit 5a

Inflation	2.7%

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes:*
Beginning Fund Balance	**$12,833,709**	**$10,832,984**	**$7,821,641**	**$7,393,631**	**$7,738,795**	**$7,887,928**	
Revenue							
Rate Funded Capital	$1,600,000	$1,825,000	$2,115,000	$2,250,000	$2,550,000	$2,800,000	
Vineyard Ave 4th Tier Fee	43,000	44,505	46,063	47,675	49,343	51,071	
Transfer from O&M Fund	0	0	0	0	0	0	
Additional Revenue Bonds	0	0	0	0	0	0	
Total Revenue	$1,643,000	$1,869,505	$2,161,063	$2,297,675	$2,599,343	$2,851,071	
Water Repair and Replacement							
Bi-Electrical Panel Upgrades	$151,930	$0	$52,736	$0	$55,623	$0	
Pressure Reducing Valve Imp - Hill	98,801	0	52,736	0	55,623	0	
Bi-Annual Water Quality Imp	44,602	102,700	0	108,321	0	114,249	
Annual Water Pump and Motor Repairs	277,483	102,700	105,473	108,321	111,245	114,249	
Water System Master Plan Update	0	51,350	0	0	0	0	
Annual Replacement of Water Meters	487,023	513,500	527,365	216,641	222,491	57,124	
Annual Water Replacement Projects	450,000	513,500	527,365	920,726	945,585	1,085,365	
Bi-Annual Emergency Water Generator Overhaul	72,053	0	52,736	0	55,623	0	
Water Tank Corrosion Repairs	200,000	0	210,946	0	222,491	285,622	
Bi-Annual Control Valve Installations	155,942	0	131,841	0	166,868	0	
Annual polybutylene replacement	93,362	128,375	131,841	135,401	139,057	142,811	
General Fund - Utility Cut Patching	77,529	79,622	81,772	83,980	86,247	88,576	
General Fund - CIP Engineering	220,000	256,750	263,682	379,122	389,359	399,871	
Advance Metering Infrastructure	0	3,081,000	0	0	0	0	
Backflow Admin Database Develpmt	50,000	0	0	0	0	0	
Water Rate Analysis	60,000	0	0	0	0	0	
Water Telemetry Upgrades	0	51,350	52,736	0	0	0	
Del Valle Parkway Water Main Ext	0	0	397,843	0	0	0	
Total Water Repair and Replacement	$2,438,725	$4,880,847	$2,589,073	$1,952,511	$2,450,211	$2,287,868	
To O&M Fund for Debt Service	$0	$0	$0	$0	$0	$0	
To Recycled Water Fund	$1,205,000	$0	$0	$0	$0	$0	
Ending Fund Balance	**$10,832,984**	**$7,821,641**	**$7,393,631**	**$7,738,795**	**$7,887,928**	**$8,451,130**	

City of Pleasanton
Water Utility Rate Study
Expansion Fund
Exhibit 5b

Inflation	2.7%

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes:*
Beginning Fund Balance	$3,017,057	$3,277,057	$3,397,332	$2,264,351	$2,510,191	$2,476,455	
Revenue							
Plus: Connection Fees	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	*From Exhibit 5*
Transfers In	0	0	0	0	0	0	
Transfers Out	0	0	0	0	0	0	
SRF Loan - Recycled Water	0	0	0	0	0	0	
Additional Revenue Bonds	0	0	0	0	0	0	
Total Revenue	$300,000	$300,000	$300,000	$300,000	$300,000	$300,000	
Water Expansion							
Upper Ruby Hill Tank	$0	$102,700	$896,520	$0	$0	$0	
Pump and Motor Capacity Increase	0	0	263,682	0	278,113	0	
Del Valle Parkway Water Main Ext	0	0	220,043	0	0	0	
Water System Master Plan Update	0	25,675	0	0	0	0	
General Fund - CIP Engineering	40,000	51,350	52,736	54,160	55,623	57,124	
Total Water Expansion	$40,000	$179,725	$1,432,981	$54,160	$333,736	$57,124	
To O&M Fund for Debt Service	$0	$0	$0	$0	$0	$0	
To Recycled Water Fund	$0	$0	$0	$0	$0	$0	
Ending Fund Balance	**$3,277,057**	**$3,397,332**	**$2,264,351**	**$2,510,191**	**$2,476,455**	**$2,719,330**	

City of Pleasanton
Water Utility Rate Study
Connection Fee Calculation - Potable Water
Exhibit 6

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Expansion Fund											
Fee	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200	$1,200
# of New Cust.	250	250	250	250	250	250	250	250	250	250	250
Fee Revenue	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**	**$300,000**

City of Pleasanton
Water Utility Rate Study
Revenues at Present Rates
Exhibit 7

		Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Single Family Residential														
Bi-Monthly Fixed Fee	***$/Acct.***													
5/8"	$17.62	17,080		17,080		17,080		17,080		17,080		17,080		17,080
3/4"	26.41	70		70		70		70		70		70		70
1"	44.04	2,212		2,212		2,212		2,212		2,212		2,212		2,212
1 1/2"	88.07	11		11		11		11		11		11		11
2"	140.91	1		1		1		1		1		1		1
3"	308.27	0		0		0		0		0		0		0
4"	880.78	0		0		0		0		0		0		0
6"	1,761.55	0		0		0		0		0		0		0
8"	3,088.72	0		0		0		0		0		0		0
10"	4,844.27	0		0		0		0		0		0		0
Senior 5/8"	14.10	3,024		3,024		3,024		3,024		3,024		3,024		3,024
Senior 3/4"	21.13	13		13		13		13		13		13		13
Senior 1"	35.23	260		260		260		260		260		260		260
Senior 1 1/2"	70.46	3		3		3		3		3		3		3
Low Inc 5/8"	12.33	181		181		181		181		181		181		181
Low Inc 3/4"	18.49	9		9		9		9		9		9		9
		22,864	0	22,864	0	22,864	0	22,864	0	22,864	0	22,864	0	22,864
Consumpiton Charge	***$/CCF***													
0-20 CCF	$2.1000	129,230	151,239	147,667	127,109	122,161	162,891	97,454	164,392	135,411	199,072	120,169	135,890	1,692,686
21-40 CCF	2.3581	33,432	44,284	25,781	18,343	34,898	60,232	35,255	75,215	48,676	78,903	32,860	28,962	516,839
41-60 CCF	2.6825	6,605	15,765	5,752	4,620	13,226	24,568	11,849	40,121	14,960	38,664	10,852	10,925	197,909
60+ CCF	3.4520	8,728	19,014	6,795	3,290	16,529	42,502	14,515	91,430	14,188	80,046	13,230	10,757	321,024
		177,995	230,301	185,995	153,362	186,813	290,194	159,073	371,158	213,235	396,686	177,112	186,534	2,728,458
Revenues														
Bi-Monthly Fixed Fee		$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$2,735,976
Water Consumpiton Charge		398,067	529,952	409,782	333,933	431,366	696,727	369,678	945,828	488,253	984,149	404,625	420,104	6,412,464
Total Single Family Residential Revenues		$854,063	$529,952	$865,778	$333,933	$887,362	$696,727	$825,674	$945,828	$944,249	$984,149	$860,621	$420,104	$9,148,439

City of Pleasanton
Water Utility Rate Study
Revenues at Present Rates
Exhibit 7

		Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Mulit-Family														
Bi-Monthly Fixed Fee	***$/Acct. (Bi-Mo)***													
5/8"	$17.62	94		94		94		94		94		94		94
3/4"	26.41	12		12		12		12		12		12		12
1"	44.04	90		90		90		90		90		90		90
1 1/2"	88.07	135		135		135		135		135		135		135
2"	140.91	85		85		85		85		85		85		85
3"	308.27	19		19		19		19		19		19		19
4"	880.78	4		4		4		4		4		4		4
6"	1,761.55	4		4		4		4		4		4		4
8"	3,088.72	0		0		0		0		0		0		0
10"	4,844.27	0		0		0		0		0		0		0
Senior 5/8"	14.10	4		4		4		4		4		4		4
Senior 3/4"	21.13	0		0		0		0		0		0		0
Senior 1"	35.23	7		7		7		7		7		7		7
Senior 1 1/2"	70.46	13		13		13		13		13		13		13
Senior 2"	112.73	10		10		10		10		10		10		10
Senior 3"	246.62	3		3		3		3		3		3		3
Low Inc 5/8"	12.33	1		1		1		1		1		1		1
Low Inc 3/4"	18.49	1		1		1		1		1		1		1
		482	0	482	0	482	0	482	0	482	0	482	0	482
Consumpiton Charge	***$/CCF (Bi-Mo)***													
All Consumption	$2.4693	28,055	40,797	42,975	20,272	41,050	24,653	32,651	44,084	30,770	43,798	39,694	21,877	410,676
		28,055	40,797	42,975	20,272	41,050	24,653	32,651	44,084	30,770	43,798	39,694	21,877	410,676
Revenues														
Bi-Monthly Fixed Fee		$49,347	$0	$49,347	$0	$49,347	$0	$49,347	$0	$49,347	$0	$49,347	$0	$296,082
Water Consumpiton Charge		69,276	100,740	106,117	50,058	101,365	60,877	80,624	108,857	75,981	108,151	98,017	54,021	1,014,082
Total Mulit-Family Revenues		$118,622	$100,740	$155,464	$50,058	$150,712	$60,877	$129,971	$108,857	$125,328	$108,151	$147,364	$54,021	$1,310,164

City of Pleasanton
Water Utility Rate Study
Revenues at Present Rates
Exhibit 7

		Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Irrigation														
Bi-Monthly Fixed Fee	***$/Acct.***													
5/8"	$17.62	148		148		148		148		148		148		148
3/4"	26.41	62		62		62		62		62		62		62
1"	44.04	225		225		225		225		225		225		225
1 1/2"	88.07	303		303		303		303		303		303		303
2"	140.91	217		217		217		217		217		217		217
3"	308.27	20		20		20		20		20		20		20
4"	880.78	15		15		15		15		15		15		15
6"	1,761.55	2		2		2		2		2		2		2
8"	3,088.72	0		0		0		0		0		0		0
10"	4,844.27	2		2		2		2		2		2		2
		994	0	994	0	994	0	994	0	994	0	994	0	994
Consumpiton Charge	***$/CCF***													
All Consumption	$2.6152	78,654	34,784	61,632	19,966	106,798	62,757	171,310	137,747	199,193	122,004	145,909	35,745	1,176,498
		78,654	34,784	61,632	19,966	106,798	62,757	171,310	137,747	199,193	122,004	145,909	35,745	1,176,498
Revenues														
Bi-Monthly Fixed Fee		$104,006	$0	$104,006	$0	$104,006	$0	$104,006	$0	$104,006	$0	$104,006	$0	$624,034
Consumpiton Charge		205,695	90,968	161,180	52,214	279,299	164,121	448,009	360,237	520,930	319,065	381,580	93,479	3,076,778
Total Irrigation Revenues		$309,701	$90,968	$265,186	$52,214	$383,305	$164,121	$552,015	$360,237	$624,935	$319,065	$485,586	$93,479	$3,700,812

City of Pleasanton
Water Utility Rate Study
Revenues at Present Rates
Exhibit 7

		Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Total
Commercial														
Bi-Monthly Fixed Fee	***$/Acct.***													
5/8"	$17.62	235		235		235		235		235		235		235
3/4"	26.41	56		56		56		56		56		56		56
1"	44.04	201		201		201		201		201		201		201
1 1/2"	88.07	250		250		250		250		250		250		250
2"	140.91	248		248		248		248		248		248		248
3"	308.27	66		66		66		66		66		66		66
4"	880.78	11		11		11		11		11		11		11
6"	1,761.55	2		2		2		2		2		2		2
8"	3,088.72	2		2		2		2		2		2		2
10"	4,844.27	0		0		0		0		0		0		0
		1,071	0	1,071	0	1,071	0	1,071	0	1,071	0	1,071	0	1,071
Consumpiton Charge	**$/CCF**													
All Consumption	$2.4693	68,734	38,476	78,570	30,500	62,267	29,705	65,706	53,869	64,571	51,960	67,388	32,771	644,517
		68,734	38,476	78,570	30,500	62,267	29,705	65,706	53,869	64,571	51,960	67,388	32,771	644,517
Revenues														
Bi-Monthly Fixed Fee		$111,170	$0	$111,170	$0	$111,170	$0	$111,170	$0	$111,170	$0	$111,170	$0	$667,019
Consumpiton Charge		169,724	95,009	194,014	75,314	153,757	73,350	162,248	133,019	159,444	128,306	166,401	80,921	1,591,507
Total Commercial Revenues		$280,894	$95,009	$305,183	$75,314	$264,927	$73,350	$273,418	$133,019	$270,614	$128,306	$277,571	$80,921	$2,258,526

Summary

Number of Customers													
Single Family Residential	22,864	0	22,864	0	22,864	0	22,864	0	22,864	0	22,864	0	11,432
Mulit-Family	482	0	482	0	482	0	482	0	482	0	482	0	241
Irrigation	994	0	994	0	994	0	994	0	994	0	994	0	497
Commercial	1,071	0	1,071	0	1,071	0	1,071	0	1,071	0	1,071	0	536
Total Number of Customers	25,411	0	25,411	0	25,411	0	25,411	0	25,411	0	25,411	0	12,706
Consumption (CCF)													
Single Family Residential	177,995	230,301	185,995	153,362	186,813	290,194	159,073	371,158	213,235	396,686	177,112	186,534	2,728,458
Mulit-Family	28,055	40,797	42,975	20,272	41,050	24,653	32,651	44,084	30,770	43,798	39,694	21,877	410,676
Irrigation	78,654	34,784	61,632	19,966	106,798	62,757	171,310	137,747	199,193	122,004	145,909	35,745	1,176,498
Commercial	68,734	38,476	78,570	30,500	62,267	29,705	65,706	53,869	64,571	51,960	67,388	32,771	644,517
Total Consumption	353,437	344,359	369,172	224,099	396,929	407,308	428,739	606,858	507,769	614,448	430,103	276,927	4,960,149
Revenues													
Fixed													
Single Family Residential	$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$455,996	$0	$2,735,976
Mulit-Family	49,347	0	49,347	0	49,347	0	49,347	0	49,347	0	49,347	0	296,082
Irrigation	104,006	0	104,006	0	104,006	0	104,006	0	104,006	0	104,006	0	624,034
Commercial	111,170	0	111,170	0	111,170	0	111,170	0	111,170	0	111,170	0	667,019
Total Consumption	$720,518	$0	$720,518	$0	$720,518	$0	$720,518	$0	$720,518	$0	$720,518	$0	$4,323,110
Variable													
Single Family Residential	$398,067	$529,952	$409,782	$333,933	$431,366	$696,727	$369,678	$945,828	$488,253	$984,149	$404,625	$420,104	$6,412,464
Mulit-Family	69,276	100,740	106,117	50,058	101,365	60,877	80,624	108,857	75,981	108,151	98,017	54,021	1,014,082
Irrigation	205,695	90,968	161,180	52,214	279,299	164,121	448,009	360,237	520,930	319,065	381,580	93,479	3,076,778
Commercial	169,724	95,009	194,014	75,314	153,757	73,350	162,248	133,019	159,444	128,306	166,401	80,921	1,591,507
Total Consumption	$842,761	$816,669	$871,093	$511,519	$965,787	$995,074	$1,060,560	$1,547,941	$1,244,608	$1,539,670	$1,050,623	$648,525	$12,094,830
Total													
Single Family Residential	$854,063	$529,952	$865,778	$333,933	$887,362	$696,727	$825,674	$945,828	$944,249	$984,149	$860,621	$420,104	$9,148,439
Mulit-Family	118,622	100,740	155,464	50,058	150,712	60,877	129,971	108,857	125,328	108,151	147,364	54,021	1,310,164
Irrigation	309,701	90,968	265,186	52,214	383,305	164,121	552,015	360,237	624,935	319,065	485,586	93,479	3,700,812
Commercial	280,894	95,009	305,183	75,314	264,927	73,350	273,418	133,019	270,614	128,306	277,571	80,921	2,258,526
Total Revenues	$1,563,280	$816,669	$1,591,611	$511,519	$1,686,305	$995,074	$1,781,079	$1,547,941	$1,965,126	$1,539,670	$1,771,142	$648,525	$16,417,940

FY 15 Budget Target	$16,412,017
Difference	*$5,923*
Percent	0.04%

FY 14 Actuals	
	$16,038,746
Difference	*$379,195*
Percent	2.36%

City of Pleasanton
Water Utility Rate Study
Development of Commodity Allocation Factor
Exhibit 8

	Consumption in CCF	10.0% Unaccounted Water	Net Water Delivered	Average Day Use (MGD)	% of Total
Single Family Residential	2,728,458	272,846	3,001,304	6.15	55.0%
Mulit-Family	410,676	41,068	451,743	0.93	8.3%
Irrigation	1,176,498	117,650	1,294,148	2.65	23.7%
Commercial	644,517	64,452	708,969	1.45	13.0%
Total	4,960,149		5,456,164	11.18	100.0%
Allocation Factor		Actual Production [1]		11.69	**(COMM)**

NOTES:
[1] Actual production for CY 2014 provided by City

City of Pleasanton
Water Utility Rate Study
Development of Capacity Allocation Factor
Exhibit 9

	Average Consumption (MGD)	Peaking Factors [1]	Peak Day Use (MGD)	% of Total
Single Family Residential	6.15	1.65	10.15	54.2%
Mulit-Family	0.93	1.35	1.25	6.7%
Irrigation	2.65	2.00	5.30	28.3%
Commercial	1.45	1.40	2.03	10.9%
Total	11.18		18.74	100.00%
Allocation Factor		Actual Peak Day [2]	16.72	**(CAP)**

NOTES:
[1] Developed from peak month to average month
[2] Provided by the District - July 2014

City of Pleasanton
Water Utility Rate Study
Development of the Customer Allocation Factor
Exhibit 10

	Actual Customer		Customer Service & Accounting			
	Number of Accounts	% of Total	Number of Customers	Weighting Factor	Weighted Customer	% of Total
Single Family Residential	11,432	90.0%	11,432	1.0	11,432	59.3%
Mulit-Family	241	1.9%	6,814	1.0	6,814	35.3%
Irrigation	497	3.9%	497	1.0	497	2.6%
Commercial	536	4.2%	536	1.0	536	2.8%
Total	12,706	100.0%	19,279		19,279	100.0%
Allocation Factor		**(AC)**				**(WCA)**

	Meters & Services	
	Weighted Customer	% of Total
Single Family Residential	2,097,704	64.4%
Mulit-Family	213,956	6.6%
Irrigation	437,863	13.4%
Commercial	509,588	15.6%
Total	3,259,111	100.0%
		(WCMS)

NOTES:

City of Pleasanton
Water Utility Rate Study
Development of the Public Fire Protection Allocation Factor
Exhibit 11

	Number of Customers	Fire Prot. Requirements (gals/min)	Duration (minutes)	Total FP Required (1,000 g/min)	% of Total
Single Family Residential	11,432	750	60	514,440	56.1%
Mulit-Family	6,814	750	60	306,630	33.4%
Irrigation	497	0	0	0	0.0%
Commercial	536	1,500	120	96,390	10.5%
Unused	0	0	0	0	0.0%
Total	19,279			917,460	100.0%

Allocation Factor **(FP)**

NOTES:

City of Pleasanton
Water Utility Rate Study
Development of the Revenue Related Allocation Factor
Exhibit 12

	Revenue FY 2016	% of Total
Single Family Residential	$9,656,734	57.0%
Mulit-Family	1,439,884	8.5%
Irrigation	3,515,770	20.8%
Commercial	2,328,856	13.7%
Total	$16,941,244	100.0%
Allocation Factor		**(RR)**

NOTES:

City of Pleasanton
Water Utility Rate Study
Functionalization and Classification of the Revenue Requirement
Exhibit 13

	Expenses FY 2016	Commodity (COMM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification			
Expenses													
Water Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	60%	Comm	40%	Cap
Water Conservation	335,098	0	0	0	0	0	0	0	335,098	100%	DA		
Water O&M	4,718,779	2,816,016	1,902,763	0	0	0	0	0	0	60%	Comm	40%	Cap
Water Purchase - Zone 7	10,335,378	10,335,378	0	0	0	0	0	0	0	100%	Comm		
Utility Billing	968,620	0	0	968,620	0	0	0	0	0	100%	AC		
Total	$16,357,876	$13,151,395	$1,902,763	$968,620	$0	$0	$0	$0	$335,098				
Total Operations & Maintenance	**$16,357,876**	**$13,151,395**	**$1,902,763**	**$968,620**	**$0**	**$0**	**$0**	**$0**	**$335,098**				
Transfers Out													
Out - Replacment Fund for Recycled Water Rev	$287,850	$171,780	$116,070	$0	$0	$0	$0	$0	$0	60%	Comm	40%	Cap
Out - Replacment Fund for Vineyard Ave 4th Tier fee	44,505	0	0	0	0	0	0	0	44,505	100%	DA		
Rate Funded Capital - To R&R Fund	1,825,000	1,089,101	735,899	0	0	0	0	0	0	60%	Comm	40%	Cap
Total Transfers Out	**$2,157,355**	**$1,260,881**	**$851,969**	**$0**	**$0**	**$0**	**$0**	**$0**	**$44,505**				

City of Pleasanton
Water Utility Rate Study
Functionalization and Classification of the Revenue Requirement
Exhibit 13

	Expenses FY 2016	Commodity (COMM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
Debt Service										
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0	As Total O&M
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0	0	0	0	0	As Total O&M
Total Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	
LESS: Other Funding										
Expansion Fund for Debt	$0	$0	$0	$0	$0	$0	$0	$0	$0	As Debt Service
R&R Fund for Debt	0	0	0	0	0	0	0	0	0	As Debt Service
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Change in Working Capital +/-										
To/From Operating Reserve	$235,428	$140,496	$94,932	$0	$0	$0	$0	$0	$0	60% Comm 40% Cap
To/(From) Water Expansion Fund	0	0	0	0	0	0	0	0	0	60% Comm 40% Cap
To/(From) Water Replacement Fund	0	0	0	0	0	0	0	0	0	60% Comm 40% Cap
Total Change in Working Capital +/-	**$235,428**	**$140,496**	**$94,932**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Revenue Requirement	**$18,750,659**	**$14,552,771**	**$2,849,664**	**$968,620**	**$0**	**$0**	**$0**	**$0**	**$379,603**	
Less: Other Revenues:										
Meter Sales	$40,400	$32,003	$6,267	$2,130	$0	$0	$0	$0	$0	As Total Revenue Requirement < DA
Federal/State Grants	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Backflow Admin Fees	181,800	144,014	28,200	9,585	0	0	0	0	0	As Total Revenue Requirement < DA
Miscellaneous	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Interfund Water Sales	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Interfund Reimbursement	390,250	309,139	60,534	20,576	0	0	0	0	0	As Total Revenue Requirement < DA
Interest Income	21,134	16,742	3,278	1,114	0	0	0	0	0	As Total Revenue Requirement < DA
In - Employee Benefit Fund/Implied Subsidy	36,303	28,757	5,631	1,914	0	0	0	0	0	As Total Revenue Requirement < DA
In - Senior Discount (funded by General Fund)	246,440	195,219	38,227	12,994	0	0	0	0	0	As Total Revenue Requirement < DA
Total Other Revenues	$916,327	725,875	142,138	48,314	0	0	0	0	0	
Total Net Revenue Requirement	**$17,834,332**	**$13,826,896**	**$2,707,526**	**$920,307**	**$0**	**$0**	**$0**	**$0**	**$379,603**	
		77.5%	***15.2%***	***5.2%***	***0.0%***	***0.0%***	***0.0%***	***0.0%***	***2.1%***	

City of Pleasanton
Water Utility Rate Study
Direct Assignment
Exhibit 13.2

	Total	Single Family Residential	Mulit-Family	Irrigation	Commercial	*Notes:*
Expenses						
Water Planning	$0	$0	$0	$0	$0	
Water Conservation	335,098	181,503	22,352	94,865	36,379	*As Capacity*
Water O&M	0	0	0	0	0	
Water Purchase - Zone 7	0	0	0	0	0	
Utility Billing	0	0	0	0	0	
Total	$335,098	$181,503	$22,352	$94,865	$36,379	
Total Operations & Maintenance	**$335,098**	**$181,503**	**$22,352**	**$94,865**	**$36,379**	
Transfers Out						
Out - Replacment Fund for Recycled Water Rev	$0	$0	$0	$0	$0	
Out - Replacment Fund for Vineyard Ave 4th Tier fee	$44,505	44,505	0	0	0	
Rate Funded Capital - To R&R Fund	0	0	0	0	0	
Total Transfers Out	**$44,505**	**$44,505**	**$0**	**$0**	**$0**	

City of Pleasanton
Water Utility Rate Study
Direct Assignment
Exhibit 13.2

	Total	Single Family Residential	Mulit-Family	Irrigation	Commercial	*Notes:*
Debt Service						
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0	
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0	
Total Debt Service	$0	$0	$0	$0	$0	
LESS: Other Funding						
Expansion Fund for Debt	$0	$0	$0	$0	$0	
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	
Change in Working Capital +/-						
To/From Operating Reserve	$0	$0	$0	$0	$0	
To/(From) Water Expansion Fund	0	0	0	0	0	
To/(From) Water Replacement Fund	0	0	0	0	0	
Total Change in Working Capital +/-	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Revenue Requirement	**$379,603**	**$226,008**	**$22,352**	**$94,865**	**$36,379**	
Less: Other Revenues:						
Meter Sales	$0	$0	$0	$0	$0	*As Above*
Federal/State Grants	0	0	0	0	0	*As Above*
Backflow Admin Fees	0	0	0	0	0	*As Above*
Miscellaneous	0	0	0	0	0	*As Above*
Interfund Water Sales	0	0	0	0	0	*As Above*
Interfund Reimbursement	0	0	0	0	0	*As Above*
Interest Income	0	0	0	0	0	*As Above*
In - Employee Benefit Fund/Implied Subsidy	0	0	0	0	0	*As Above*
In - Senior Discount (funded by General Fund)	0	0	0	0	0	*As Above*
Total Other Revenues	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Net Revenue Requirement	**$379,603**	**$226,008**	**$22,352**	**$94,865**	**$36,379**	

City of Pleasanton
Water Utility Rate Study
Allocation of Revenue Requirement
Exhibit 14

	Net Revenue Requirement	Single Family Residential	Mulit-Family	Irrigation	Commercial	*Basis of Allocation*
Commodity	$13,826,896	$7,605,840	$1,144,799	$3,279,603	$1,796,654	*(COMM)*
Capacity	$2,707,526	$1,466,508	$180,599	$766,487	$293,931	*(CAP)*
Actual Customer	$920,307	$828,062	$17,457	$36,000	$38,788	*(AC)*
Cust. Acctg.	$0	$0	$0	$0	$0	*(WCA)*
Meters & Services	$0	$0	$0	$0	$0	*(WCMS)*
Public Fire Protection	$0	$0	$0	$0	$0	*(FP)*
Revenue Related	$0	$0	$0	$0	$0	*(RR)*
Direct Assign.	$379,603	$226,008	$22,352	$94,865	$36,379	*(DA)*
Net Revenue Requirement	**$17,834,332**	**$10,126,419**	**$1,365,207**	**$4,176,953**	**$2,165,753**	

City of Pleasanton
Water Utility Rate Study
Summary of Cost of Service Analysis
Exhibit 15

	FY 2016 Expenses	Single Family Residential	Mulit-Family	Irrigation	Commercial	*Notes:*
Revenues at Present Rates	$16,941,244	$9,656,734	$1,439,884	$3,515,770	$2,328,856	
Allocated Revenue Requirement	$17,834,332	$10,126,419	$1,365,207	$4,176,953	$2,165,753	
Bal/Def of Funds	($893,088)	($469,686)	$74,677	($661,183)	$163,103	
Required % Change in Rates	**5.3%**	**4.9%**	**-5.2%**	**18.8%**	**-7.0%**	

City of Pleasanton
Water Utility Rate Study
Average Unit Costs
Exhibit 16

	Total	Single Family Residential	Mulit-Family	Irrigation	Commercial	*Notes:*
Consumption Related						
Commodity $/CCF	$2.79	$2.79	$2.79	$2.79	$2.79	
Capacity $/CCF	$0.55	$0.54	$0.44	$0.65	$0.46	
Fire/Revenue/Direct $/CCF	$0.08	$0.08	$0.05	$0.08	$0.06	
Total $/CCF	$3.41	$3.41	$3.28	$3.52	$3.30	
Customer Related						
Total $/Account	$6.04	$6.04	$6.04	$6.04	$6.04	
Current Cost ($/CCF)	$3.42	$3.54	$3.51	$2.99	$3.61	
Allocated Cost ($/CCF)	$3.60	$3.71	$3.32	$3.55	$3.36	

Rate Schedule
Single Family Residential Rates
Alternative 1

		Proposed Rates					
	Present	**FY 2016[1]**		**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
	Rates	*October 1,2015*	*January 1,2016*	*January 1,2017*	*January 1,2018*	*January 1,2019*	*January 1,2020*
	Rate Adj.	*5.5%*	*N/A*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
	CPI Adj. [2]	*N/A*	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Bi-Monthly Fixed Fee							
5/8"	$17.62	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
10"	4,844.27	4,844.27	4,965.38	5,089.51	5,216.75	5,347.17	5,480.85
Senior 5/8"	$14.10	$14.10	$15.35	$15.73	$16.12	$16.52	$16.94
Senior 3/4"	21.13	21.13	23.01	23.59	24.17	24.78	25.40
Senior 1"	35.23	35.23	38.37	39.33	40.32	41.33	42.36
Senior 1 1/2"	70.46	70.46	76.73	78.65	80.61	82.63	84.69
Low Inc 5/8"	12.33	12.33	12.64	12.96	13.28	13.61	13.95
Low Inc 3/4"	18.49	18.49	18.95	19.43	19.91	20.41	20.92
Consumpiton Charge							
0-20 CCF	$2.1000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000	$2.4000
21-40 CCF	2.3581	2.7581	2.7646	2.7712	2.7780	2.7849	2.7920
41-60 CCF	2.6825	2.9825	2.9946	3.0070	3.0197	3.0327	3.0460
60+ CCF	3.4520	3.7520	3.7801	3.8089	3.8384	3.8686	3.8996

[1] - 5.5% rate adjustment assumed to be effective October 1, 2015
[2] - CPI adjustments are effective January 1 of each year

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 1 - FY 2016
October 1 2015

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$17.62	$17.62	$0.00	0.00%
5	28.12	29.62	1.50	5.33%
10	38.62	41.62	3.00	7.77%
15	49.12	53.62	4.50	9.16%
25	71.41	79.41	8.00	11.20%
35	94.99	106.99	12.00	12.63%
45	120.19	135.69	15.50	12.90%
60	160.43	180.43	20.00	12.47%
80	229.47	255.47	26.00	11.33%
100	298.51	330.51	32.00	10.72%
125	384.81	424.31	39.50	10.26%
150	471.11	518.11	47.00	9.98%
180	574.67	630.67	56.00	9.74%
225	730.01	799.51	69.50	9.52%
300	988.91	1,080.91	92.00	9.30%

PRESENT RATES	
Bi-Monthly Fixed Fee	**$/Acct.**
5/8"	$17.62
Consumpiton Charge	**$/CCF**
0-20 CCF	$2.1000
21-40 CCF	2.3581
41-60 CCF	2.6825
60+ CCF	3.4520

PROPOSED RATES	
Bi-Monthly Fixed Fee	**$/Acct.**
5/8"	$17.62
Consumpiton Charge	**$/CCF**
0-20 CCF	$2.4000
21-40 CCF	2.7581
41-60 CCF	2.9825
60+ CCF	3.7520

City of Pleasanton
Single Family Residential Rates
Combined Water & Sewer Bill: Year 1 - FY 2016
October 1 2015

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$94.17	$94.90	$0.73	0.78%
5	104.67	106.90	2.23	2.13%
10	115.17	118.90	3.73	3.24%
15	125.67	130.90	5.23	4.16%
25	147.96	156.69	8.73	5.90%
35	171.54	184.27	12.73	7.42%
45	196.74	212.97	16.23	8.25%
60	236.98	257.71	20.73	8.75%
80	306.02	332.75	26.73	8.73%
100	375.06	407.79	32.73	8.73%
125	461.36	501.59	40.23	8.72%
150	547.66	595.39	47.73	8.72%
180	651.22	707.95	56.73	8.71%
225	806.56	876.79	70.23	8.71%
300	1,065.46	1,158.19	92.73	8.70%

PRESENT RATES		PROPOSED RATES	
Water			
Bi-Monthly Fixed Fee	**$/Acct.**	**Bi-Monthly Fixed Fee**	**$/Acct.**
5/8"	$17.62	5/8"	$17.62
Consumpiton Charge	**$/CCF**	**Consumpiton Charge**	**$/CCF**
0-20 CCF	$2.1000	0-20 CCF	$2.4000
21-40 CCF	2.3581	21-40 CCF	2.7581
41-60 CCF	2.6825	41-60 CCF	2.9825
60+ CCF	3.4520	60+ CCF	3.7520
Sewer			
Bi-Monthly Fixed Charge	**$/Acct.**	**Bi-Monthly Fixed Charge**	**$/Acct.**
Local - Single Family	$24.46	Local - Single Family	$25.19
DSRSD - Single Family	52.09	DSRSD - Single Family	52.09

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 1 - FY 2016
January 1 2016

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$17.62	$18.06	$0.44	2.50%
5	29.62	30.06	0.44	1.49%
10	41.62	42.06	0.44	1.06%
15	53.62	54.06	0.44	0.82%
25	79.41	79.88	0.47	0.60%
35	106.99	107.53	0.54	0.50%
45	135.69	136.33	0.63	0.46%
60	180.43	181.24	0.81	0.45%
80	255.47	256.85	1.37	0.54%
100	330.51	332.45	1.94	0.59%
125	424.31	426.95	2.64	0.62%
150	518.11	521.45	3.34	0.64%
180	630.67	634.86	4.18	0.66%
225	799.51	804.96	5.45	0.68%
300	1,080.91	1,088.47	7.56	0.70%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$17.62

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7581
41-60 CCF	2.9825
60+ CCF	3.7520

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.06

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7646
41-60 CCF	2.9946
60+ CCF	3.7801

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 2 - FY 2017
January 1 2017

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$18.06	$18.51	$0.45	2.49%
5	30.06	30.51	0.45	1.50%
10	42.06	42.51	0.45	1.07%
15	54.06	54.51	0.45	0.83%
25	79.88	80.37	0.48	0.60%
35	107.53	108.08	0.55	0.51%
45	136.33	136.97	0.64	0.47%
60	181.24	182.07	0.83	0.46%
80	256.85	258.25	1.41	0.55%
100	332.45	334.43	1.98	0.60%
125	426.95	429.65	2.70	0.63%
150	521.45	524.88	3.42	0.66%
180	634.86	639.14	4.29	0.68%
225	804.96	810.54	5.58	0.69%
300	1,088.47	1,096.21	7.74	0.71%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.06

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7646
41-60 CCF	2.9946
60+ CCF	3.7801

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.51

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7712
41-60 CCF	3.0070
60+ CCF	3.8089

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 3 - FY 2018
January 1 2018

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$18.51	$18.97	$0.46	2.49%
5	30.51	30.97	0.46	1.51%
10	42.51	42.97	0.46	1.08%
15	54.51	54.97	0.46	0.84%
25	80.37	80.86	0.49	0.61%
35	108.08	108.64	0.56	0.52%
45	136.97	137.63	0.66	0.48%
60	182.07	182.92	0.85	0.47%
80	258.25	259.69	1.44	0.56%
100	334.43	336.46	2.03	0.61%
125	429.65	432.42	2.77	0.64%
150	524.88	528.38	3.51	0.67%
180	639.14	643.53	4.39	0.69%
225	810.54	816.26	5.72	0.71%
300	1,096.21	1,104.14	7.93	0.72%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.51

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7712
41-60 CCF	3.0070
60+ CCF	3.8089

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.97

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7780
41-60 CCF	3.0197
60+ CCF	3.8384

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 4 - FY 2019
January 1 2019

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$18.97	$19.44	$0.47	2.48%
5	30.97	31.44	0.47	1.52%
10	42.97	43.44	0.47	1.09%
15	54.97	55.44	0.47	0.86%
25	80.86	81.36	0.50	0.62%
35	108.64	109.21	0.57	0.53%
45	137.63	138.30	0.67	0.49%
60	182.92	183.79	0.87	0.47%
80	259.69	261.16	1.47	0.57%
100	336.46	338.54	2.08	0.62%
125	432.42	435.25	2.83	0.65%
150	528.38	531.97	3.59	0.68%
180	643.53	648.02	4.49	0.70%
225	816.26	822.11	5.85	0.72%
300	1,104.14	1,112.26	8.12	0.74%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$18.97

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7780
41-60 CCF	3.0197
60+ CCF	3.8384

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$19.44

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7849
41-60 CCF	3.0327
60+ CCF	3.8686

City of Pleasanton
Water Utility Rate Study
Single Family Residential Rates - 5/8"
Alternative 1: Year 5 - FY 2020
January 1 2020

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$19.44	$19.93	$0.49	2.52%
5	31.44	31.93	0.49	1.56%
10	43.44	43.93	0.49	1.13%
15	55.44	55.93	0.49	0.88%
25	81.36	81.89	0.53	0.65%
35	109.21	109.81	0.60	0.55%
45	138.30	139.00	0.70	0.51%
60	183.79	184.69	0.90	0.49%
80	261.16	262.68	1.52	0.58%
100	338.54	340.67	2.14	0.63%
125	435.25	438.16	2.91	0.67%
150	531.97	535.65	3.69	0.69%
180	648.02	652.64	4.62	0.71%
225	822.11	828.12	6.01	0.73%
300	1,112.26	1,120.59	8.34	0.75%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$19.44

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7849
41-60 CCF	3.0327
60+ CCF	3.8686

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
5/8"	$19.93

Consumpiton Charge	$/CCF
0-20 CCF	$2.4000
21-40 CCF	2.7920
41-60 CCF	3.0460
60+ CCF	3.8996

Rate Schedule
Multi-Family Rates
Alternative 1

		FY 2016[1]	FY 2017	FY 2018	FY 2019	FY 2020
Rate Adj.	***Present***	*5.5%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
CPI Adj. [2]	***Rates***	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Bi-Monthly Fixed Fee						
5/8"	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
10"	4,844.27	4,965.38	5,089.51	5,216.75	5,347.17	5,480.85
Senior 5/8"	14.10	15.35	15.73	16.12	16.52	16.94
Senior 3/4"	21.13	23.01	23.59	24.17	24.78	25.40
Senior 1"	35.23	38.37	39.33	40.32	41.33	42.36
Senior 1 1/2"	70.46	76.73	78.65	80.61	82.63	84.69
Senior 2"	112.73	122.77	125.83	128.98	132.20	135.51
Senior 3"	246.62	268.58	275.30	282.18	289.24	296.47
Low Inc 5/8"	12.33	12.64	12.96	13.28	13.61	13.95
Low Inc 3/4"	18.49	18.95	19.43	19.91	20.41	20.92
Consumpiton Charge						
All Consumption	$2.4693	$2.7760	$2.7829	$2.7900	$2.7973	$2.8047

[1] - 5.5% rate adjustment assumed to be effective October 1, 2015
[2] - CPI adjustments are effective January 1 of each year

City of Pleasanton
Water Utility Rate Study
Multi-Family Rates - 1 1/2" Meter
Alternative 1: Year 1 - 2016
Includes 5.5% rate adj. plus 2.5% CPI

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$88.07	$90.27	$2.20	2.50%
5	100.42	104.15	3.73	3.72%
10	112.76	118.03	5.27	4.67%
15	125.11	131.91	6.80	5.44%
25	149.80	159.67	9.87	6.59%
35	174.50	187.43	12.93	7.41%
50	211.54	229.07	17.54	8.29%
75	273.27	298.47	25.20	9.22%
100	335.00	367.87	32.87	9.81%
125	396.73	437.27	40.54	10.22%
150	458.47	506.67	48.21	10.51%
175	520.20	576.07	55.87	10.74%
200	581.93	645.47	63.54	10.92%
250	705.40	784.27	78.88	11.18%
300	828.86	923.07	94.21	11.37%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$88.07

Consumpiton Charge	$/CCF
All Consumption	$2.4693

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$90.27

Consumpiton Charge	$/CCF
All Consumption	$2.7760

City of Pleasanton
Water Utility Rate Study
Multi-Family Rates - 1 1/2" Meter
Alternative 1: Year 2 - 2017
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$90.27	$92.53	$2.26	2.50%
5	104.15	106.44	2.29	2.20%
10	118.03	120.36	2.33	1.97%
15	131.91	134.27	2.36	1.79%
25	159.67	162.10	2.43	1.52%
35	187.43	189.93	2.50	1.33%
50	229.07	231.68	2.61	1.14%
75	298.47	301.25	2.78	0.93%
100	367.87	370.82	2.95	0.80%
125	437.27	440.39	3.12	0.71%
150	506.67	509.97	3.30	0.65%
175	576.07	579.54	3.47	0.60%
200	645.47	649.11	3.64	0.56%
250	784.27	788.26	3.98	0.51%
300	923.07	927.40	4.33	0.47%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$90.27

Consumpiton Charge	$/CCF
All Consumption	$2.7760

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$92.53

Consumpiton Charge	$/CCF
All Consumption	$2.7829

City of Pleasanton
Water Utility Rate Study
Multi-Family Rates - 1 1/2" Meter
Alternative 1: Year 3 - 2018
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$92.53	$94.84	$2.31	2.50%
5	106.44	108.79	2.35	2.20%
10	120.36	122.74	2.38	1.98%
15	134.27	136.69	2.42	1.80%
25	162.10	164.59	2.49	1.53%
35	189.93	192.49	2.56	1.35%
50	231.68	234.34	2.66	1.15%
75	301.25	304.09	2.84	0.94%
100	370.82	373.84	3.02	0.81%
125	440.39	443.59	3.20	0.73%
150	509.97	513.34	3.38	0.66%
175	579.54	583.09	3.55	0.61%
200	649.11	652.84	3.73	0.57%
250	788.26	792.34	4.09	0.52%
300	927.40	931.84	4.44	0.48%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$92.53

Consumpiton Charge	$/CCF
All Consumption	$2.7829

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$94.84

Consumpiton Charge	$/CCF
All Consumption	$2.7900

City of Pleasanton
Water Utility Rate Study
Multi-Family Rates - 1 1/2" Meter
Alternative 1: Year 4 - 2019
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$94.84	$97.21	$2.37	2.50%
5	108.79	111.20	2.41	2.21%
10	122.74	125.18	2.44	1.99%
15	136.69	139.17	2.48	1.81%
25	164.59	167.14	2.55	1.55%
35	192.49	195.12	2.63	1.36%
50	234.34	237.08	2.74	1.17%
75	304.09	307.01	2.92	0.96%
100	373.84	376.94	3.10	0.83%
125	443.59	446.87	3.28	0.74%
150	513.34	516.81	3.46	0.67%
175	583.09	586.74	3.65	0.63%
200	652.84	656.67	3.83	0.59%
250	792.34	796.54	4.19	0.53%
300	931.84	936.40	4.56	0.49%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$94.84

Consumpiton Charge	$/CCF
All Consumption	$2.7900

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$97.21

Consumpiton Charge	$/CCF
All Consumption	$2.7973

City of Pleasanton
Water Utility Rate Study
Multi-Family Rates - 1 1/2" Meter
Alternative 1: Year 5 - 2020
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$97.21	$99.64	$2.43	2.50%
5	111.20	113.66	2.47	2.22%
10	125.18	127.69	2.50	2.00%
15	139.17	141.71	2.54	1.83%
25	167.14	169.76	2.61	1.56%
35	195.12	197.80	2.69	1.38%
50	237.08	239.88	2.80	1.18%
75	307.01	309.99	2.99	0.97%
100	376.94	380.11	3.17	0.84%
125	446.87	450.23	3.36	0.75%
150	516.81	520.35	3.54	0.68%
175	586.74	590.46	3.73	0.63%
200	656.67	660.58	3.91	0.60%
250	796.54	800.82	4.28	0.54%
300	936.40	941.05	4.65	0.50%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$97.21

Consumpiton Charge	$/CCF
All Consumption	$2.7973

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$99.64

Consumpiton Charge	$/CCF
All Consumption	$2.8047

Rate Schedule
Irrigation Rates
Alternative 1

		FY 2016[1]	FY 2017	FY 2018	FY 2019	FY 2020
Rate Adj.	***Present***	*5.5%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
CPI Adj. [2]	***Rates***	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Bi-Monthly Fixed Fee						
5/8"	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	902.80	925.37	948.50	972.21	996.52
8"	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
10"	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
Consumpiton Charge						
All Consumption	$2.6152	$2.9256	$2.9362	$2.9471	$2.9583	$2.9698

[1] - 5.5% rate adjustment assumed to be effective October 1, 2015
[2] - CPI adjustments are effective January 1 of each year

City of Pleasanton
Water Utility Rate Study
Irrigation Rates - 1 1/2" Meter
Alternative 1: Year 1 - 2016
Includes 5.5% rate adj. plus 2.5% CPI

Meter Size	Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
1 1/2"	0	$88.07	$90.27	$2.20	2.50%
	10	114.22	119.53	$5.30	4.64%
	20	140.37	148.78	$8.41	5.99%
	35	179.60	192.67	$13.06	7.27%
	50	218.83	236.55	$17.72	8.10%
	70	271.13	295.06	$23.93	8.83%
	90	323.44	353.57	$30.14	9.32%
	110	375.74	412.09	$36.34	9.67%
	135	441.12	485.23	$44.10	10.00%
	170	532.65	587.62	$54.97	10.32%
	205	624.19	690.02	$65.83	10.55%
	250	741.87	821.67	$79.80	10.76%
	300	872.63	967.95	$95.32	10.92%
	350	1,003.39	1,114.23	$110.84	11.05%
	500	1,395.67	1,553.07	$157.40	11.28%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$88.07

Consumpiton Charge	$/CCF
All Consumption	$2.6152

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$90.27

Consumpiton Charge	$/CCF
All Consumption	$2.9256

City of Pleasanton
Water Utility Rate Study
Irrigation Rates - 1 1/2" Meter
Alternative 1: Year 2 - 2017
Includes 2.5% CPI Adj

Meter Size	Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
1 1/2"	0	$90.27	$92.53	$2.26	2.50%
	10	119.53	121.89	$2.37	1.98%
	20	148.78	151.25	$2.47	1.66%
	35	192.67	195.30	$2.63	1.37%
	50	236.55	239.34	$2.79	1.18%
	70	295.06	298.06	$3.00	1.02%
	90	353.57	356.79	$3.21	0.91%
	110	412.09	415.51	$3.43	0.83%
	135	485.23	488.92	$3.69	0.76%
	170	587.62	591.68	$4.06	0.69%
	205	690.02	694.45	$4.43	0.64%
	250	821.67	826.58	$4.91	0.60%
	300	967.95	973.39	$5.44	0.56%
	350	1,114.23	1,120.20	$5.97	0.54%
	500	1,553.07	1,560.63	$7.56	0.49%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$90.27

Consumpiton Charge	$/CCF
All Consumption	$2.9256

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$92.53

Consumpiton Charge	$/CCF
All Consumption	$2.9362

City of Pleasanton
Water Utility Rate Study
Irrigation Rates - 1 1/2" Meter
Alternative 1: Year 3 - 2018
Includes 2.5% CPI Adj

Meter Size	Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
1 1/2"	0	$92.53	$94.84	$2.31	2.50%
	10	121.89	124.31	$2.42	1.98%
	20	151.25	153.78	$2.53	1.67%
	35	195.30	197.99	$2.69	1.38%
	50	239.34	242.20	$2.85	1.19%
	70	298.06	301.14	$3.07	1.03%
	90	356.79	360.08	$3.29	0.92%
	110	415.51	419.02	$3.51	0.84%
	135	488.92	492.70	$3.78	0.77%
	170	591.68	595.85	$4.16	0.70%
	205	694.45	699.00	$4.54	0.65%
	250	826.58	831.62	$5.04	0.61%
	300	973.39	978.97	$5.58	0.57%
	350	1,120.20	1,126.33	$6.12	0.55%
	500	1,560.63	1,568.39	$7.76	0.50%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$92.53

Consumpiton Charge	$/CCF
All Consumption	$2.9362

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$94.84

Consumpiton Charge	$/CCF
All Consumption	$2.9471

City of Pleasanton
Water Utility Rate Study
Irrigation Rates - 1 1/2" Meter
Alternative 1: Year 4 - 2019
Includes 2.5% CPI Adj

Meter Size	Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
1 1/2"	0	$94.84	$97.21	$2.37	2.50%
	10	124.31	126.79	$2.48	2.00%
	20	153.78	156.38	$2.59	1.69%
	35	197.99	200.75	$2.76	1.40%
	50	242.20	245.13	$2.93	1.21%
	70	301.14	304.29	$3.15	1.05%
	90	360.08	363.46	$3.38	0.94%
	110	419.02	422.62	$3.60	0.86%
	135	492.70	496.58	$3.88	0.79%
	170	595.85	600.12	$4.27	0.72%
	205	699.00	703.66	$4.67	0.67%
	250	831.62	836.79	$5.17	0.62%
	300	978.97	984.70	$5.73	0.59%
	350	1,126.33	1,132.62	$6.29	0.56%
	500	1,568.39	1,576.36	$7.97	0.51%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$94.84

Consumpiton Charge	$/CCF
All Consumption	$2.9471

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$97.21

Consumpiton Charge	$/CCF
All Consumption	$2.9583

City of Pleasanton
Water Utility Rate Study
Irrigation Rates - 1 1/2" Meter
Alternative 1: Year 5 - 2020
Includes 2.5% CPI Adj

Meter Size	Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
1 1/2"	0	$97.21	$99.64	$2.43	2.50%
	10	126.79	129.34	$2.54	2.01%
	20	156.38	159.04	$2.66	1.70%
	35	200.75	203.58	$2.83	1.41%
	50	245.13	248.13	$3.01	1.23%
	70	304.29	307.53	$3.24	1.06%
	90	363.46	366.92	$3.46	0.95%
	110	422.62	426.32	$3.69	0.87%
	135	496.58	500.56	$3.98	0.80%
	170	600.12	604.51	$4.38	0.73%
	205	703.66	708.45	$4.79	0.68%
	250	836.79	842.09	$5.30	0.63%
	300	984.70	990.58	$5.88	0.60%
	350	1,132.62	1,139.07	$6.45	0.57%
	500	1,576.36	1,584.54	$8.18	0.52%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$97.21

Consumpiton Charge	$/CCF
All Consumption	$2.9583

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1 1/2"	$99.64

Consumpiton Charge	$/CCF
All Consumption	$2.9698

Rate Schedule
Commercial Rates
Alternative 1

		FY 2016[1]	FY 2017	FY 2018	FY 2019	FY 2020
Rate Adj.	***Present***	*5.5%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
CPI Adj. [2]	***Rates***	*2.5%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Bi-Monthly Fixed Fee						
5/8"	$17.62	$18.06	$18.51	$18.97	$19.44	$19.93
3/4"	26.41	27.07	27.75	28.44	29.15	29.88
1"	44.04	45.14	46.27	47.43	48.62	49.84
1 1/2"	88.07	90.27	92.53	94.84	97.21	99.64
2"	140.91	144.43	148.04	151.74	155.53	159.42
3"	308.27	315.98	323.88	331.98	340.28	348.79
4"	880.78	902.80	925.37	948.50	972.21	996.52
6"	1,761.55	1,805.59	1,850.73	1,897.00	1,944.42	1,993.03
8"	3,088.72	3,165.94	3,245.09	3,326.22	3,409.38	3,494.61
10"	4,844.27	4,965.38	5,089.51	5,216.75	5,347.17	5,480.85
Consumpiton Charge						
All Consumption	$2.4693	$2.7760	$2.7829	$2.7900	$2.7973	$2.8047

[1] - 5.5% rate adjustment assumed to be effective October 1, 2015
[2] - CPI adjustments are effective January 1 of each year

City of Pleasanton
Water Utility Rate Study
Commercial Rates - 1" Meter
Alternative 1: Year 1 - 2016
Includes 5.5% rate adj. plus 2.5% CPI

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$44.04	$45.14	$1.10	2.50%
10	68.73	72.90	4.17	6.06%
20	93.43	100.66	7.23	7.74%
35	130.47	142.30	11.83	9.07%
50	167.51	183.94	16.44	9.81%
70	216.89	239.46	22.57	10.41%
90	266.28	294.98	28.70	10.78%
110	315.66	350.50	34.84	11.04%
135	377.40	419.90	42.50	11.26%
170	463.82	517.06	53.24	11.48%
205	550.25	614.22	63.97	11.63%
250	661.37	739.14	77.78	11.76%
300	784.83	877.94	93.11	11.86%
350	908.30	1,016.74	108.45	11.94%
500	1,278.69	1,433.14	154.45	12.08%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$44.04

Consumpiton Charge	$/CCF
All Consumption	$2.4693

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$45.14

Consumpiton Charge	$/CCF
All Consumption	$2.7760

City of Pleasanton
Water Utility Rate Study
Commercial Rates - 1" Meter
Alternative 1: Year 2 - 2017
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$45.14	$46.27	$1.13	2.50%
10	72.90	74.10	1.20	1.64%
20	100.66	101.93	1.27	1.26%
35	142.30	143.67	1.37	0.96%
50	183.94	185.42	1.48	0.80%
70	239.46	241.07	1.61	0.67%
90	294.98	296.73	1.75	0.59%
110	350.50	352.39	1.89	0.54%
135	419.90	421.96	2.06	0.49%
170	517.06	519.36	2.30	0.45%
205	614.22	616.76	2.54	0.41%
250	739.14	742.00	2.85	0.39%
300	877.94	881.14	3.20	0.36%
350	1,016.74	1,020.29	3.54	0.35%
500	1,433.14	1,437.72	4.58	0.32%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$45.14

Consumpiton Charge	$/CCF
All Consumption	$2.7760

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$46.27

Consumpiton Charge	$/CCF
All Consumption	$2.7829

City of Pleasanton
Water Utility Rate Study
Commercial Rates - 1" Meter
Alternative 1: Year 3 - 2018
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$46.27	$47.43	$1.16	2.51%
10	74.10	75.33	1.23	1.66%
20	101.93	103.23	1.30	1.28%
35	143.67	145.08	1.41	0.98%
50	185.42	186.93	1.51	0.82%
70	241.07	242.73	1.66	0.69%
90	296.73	298.53	1.80	0.61%
110	352.39	354.33	1.94	0.55%
135	421.96	424.08	2.12	0.50%
170	519.36	521.73	2.37	0.46%
205	616.76	619.38	2.62	0.42%
250	742.00	744.93	2.93	0.40%
300	881.14	884.43	3.29	0.37%
350	1,020.29	1,023.93	3.64	0.36%
500	1,437.72	1,442.43	4.71	0.33%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$46.27

Consumpiton Charge	$/CCF
All Consumption	$2.7829

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$47.43

Consumpiton Charge	$/CCF
All Consumption	$2.7900

City of Pleasanton
Water Utility Rate Study
Commercial Rates - 1" Meter
Alternative 1: Year 4 - 2019
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$47.43	$48.62	$1.19	2.51%
10	75.33	76.59	1.26	1.68%
20	103.23	104.57	1.34	1.29%
35	145.08	146.53	1.45	1.00%
50	186.93	188.49	1.56	0.83%
70	242.73	244.43	1.70	0.70%
90	298.53	300.38	1.85	0.62%
110	354.33	356.32	1.99	0.56%
135	424.08	426.26	2.18	0.51%
170	521.73	524.16	2.43	0.47%
205	619.38	622.07	2.69	0.43%
250	744.93	747.95	3.01	0.40%
300	884.43	887.81	3.38	0.38%
350	1,023.93	1,027.68	3.75	0.37%
500	1,442.43	1,447.27	4.84	0.34%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$47.43

Consumpiton Charge	$/CCF
All Consumption	$2.7900

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$48.62

Consumpiton Charge	$/CCF
All Consumption	$2.7973

City of Pleasanton
Water Utility Rate Study
Commercial Rates - 1" Meter
Alternative 1: Year 5 - 2020
Includes 2.5% CPI Adj

Consumption (CCF)	Present Rates	Proposed Rates	Difference Amount	Difference Percent
0	$48.62	$49.84	$1.22	2.51%
10	76.59	77.89	1.29	1.69%
20	104.57	105.93	1.37	1.31%
35	146.53	148.00	1.48	1.01%
50	188.49	190.08	1.59	0.84%
70	244.43	246.17	1.74	0.71%
90	300.38	302.26	1.89	0.63%
110	356.32	358.36	2.03	0.57%
135	426.26	428.47	2.22	0.52%
170	524.16	526.64	2.48	0.47%
205	622.07	624.80	2.74	0.44%
250	747.95	751.02	3.07	0.41%
300	887.81	891.25	3.44	0.39%
350	1,027.68	1,031.49	3.81	0.37%
500	1,447.27	1,452.19	4.92	0.34%

PRESENT RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$48.62

Consumpiton Charge	$/CCF
All Consumption	$2.7973

PROPOSED RATES

Bi-Monthly Fixed Fee	$/Acct.
1"	$49.84

Consumpiton Charge	$/CCF
All Consumption	$2.8047

Technical Appendix B – Recycled Water Analysis

City of Pleasanton
Water Utility Rate Study
Summary of the Water Revenue Requirement - Recycled Water
Exhibit 1

	Budgeted	Projected				
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Revenues						
Rate Revenues	$102,534	$613,701	$1,174,074	$1,556,406	$1,777,321	$1,881,355
Miscellaneous Revenues	285,000	287,850	290,729	293,636	296,572	299,538
Total Revenues	**$387,534**	**$901,551**	**$1,464,803**	**$1,850,042**	**$2,073,893**	**$2,180,893**
Expenses						
Total Water O & M Division	$43,503	$600,412	$854,458	$1,009,088	$1,102,422	$1,151,783
Total Operations & Maintenance	**$43,503**	**$600,412**	**$854,458**	**$1,009,088**	**$1,102,422**	**$1,151,783**
Transfers	**$0**	**$0**	**$0**	**$75,000**	**$200,000**	**$275,000**
Net Debt Service	**$0**	**$0**	**$750,000**	**$750,000**	**$750,000**	**$750,000**
Total Change in Working Capital +/-	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Revenue Requirement	**$43,503**	**$600,412**	**$1,604,458**	**$1,834,088**	**$2,052,422**	**$2,176,783**
Bal/(Def) of Funds	**$344,031**	**$301,139**	**($139,655)**	**$15,955**	**$21,472**	**$4,110**
Balas a % of Rate Adj. Required	**-335.5%**	**-49.1%**	**11.9%**	**-1.0%**	**-1.2%**	**-0.2%**
Proposed Rate Adjustment [1]	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Additional Revenue with Rate Adj.	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Bal/(Def) After Rate Adjustment	**$344,031**	**$301,139**	**($139,655)**	**$15,955**	**$21,472**	**$4,110**
Balance as a % of Rate Revenues	**-335.5%**	**-49.1%**	**11.9%**	**-1.0%**	**-1.2%**	**-0.2%**
Average Residential Customer Bill	$2.35 ($ / CCF)					
Customer Bill on Proposed Adjustment	$2.35	$2.35	$2.35	$2.35	$2.35	$2.35
Bill Difference - Monthly	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative Bill Difference	0.00	0.00	0.00	0.00	0.00	0.00
Debt Service Coverage Ratio (all debt)						
Before Rate Adjustment	N/A	N/A	0.81	1.12	1.30	1.37
After Needed Rate Adjustment	N/A	N/A	1.00	1.12	1.30	1.37
After Proposed Rate Adjustment	N/A	N/A	0.81	1.12	1.30	1.37

City of Pleasanton
Water Utility Rate Study
Escalations
Exhibit 2

	Budgeted	Projected					
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	*Notes:*
Revenues:							
Res - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Irr - Customer Growth	Budget	-5.0%	-15.0%	-15.0%	-10.0%	-5.0%	
Com - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Recycled Water - Cust. Growth	Budget	376.2%	140.0%	50.0%	5.6%	5.3%	
All - Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Single-Family - Consumption Growth	Budget	7.5%	4.8%	6.9%	6.5%	4.8%	
Multi-Family - Consumption Growth	Budget	12.5%	7.5%	10.0%	7.0%	5.0%	
Irrigation - Consumption Growth	Budget	-5.0%	-15.0%	-15.0%	-10.0%	-5.0%	
Commercial - Consumption Growth	Budget	4.0%	4.0%	4.0%	3.5%	3.5%	
Miscellaneous Revenues	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses:							
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
General O&M	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Materials & Supplies	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Equipment	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
Miscellaneous	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	
Purchased Water - Recycled	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
Purchased Water - Zone 7	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	
Interest:	0.5%	0.5%	0.5%	0.8%	1.0%	1.0%	
New Debt Service:							
Low Interest Loans							
Term in Years	20	20	20	20	20	20	
Rate	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Revenue Bond							
Term in Years	20	20	20	20	20	20	
Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	

City of Pleasanton
Water Utility Rate Study
Revenue Requirement - Recycled Water
Exhibit 3

	Budgeted	Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes:*
Revenues							
Rate Revenues							
Recycled Water Sales	$102,534	$613,701	$1,174,074	$1,556,406	$1,777,321	$1,881,355	As Recycled Water Exhibit 4
Total Rate Revenues	$102,534	$613,701	$1,174,074	$1,556,406	$1,777,321	$1,881,355	
Other Revenues:							
Transfer from Potable Water	$285,000	$287,850	$290,729	$293,636	$296,572	$299,538	
Interest Income	0	0	0	0	0	0	Calculated
Total Other Revenues	$285,000	$287,850	$290,729	$293,636	$296,572	$299,538	
Total Revenues	**$387,534**	**$901,551**	**$1,464,803**	**$1,850,042**	**$2,073,893**	**$2,180,893**	
Expenses							
Water O & M Division							
O&M Expenses	$0	$367,656	$410,779	$423,102	$435,795	$448,869	As General O&M
Water Purchase - Recycled Water	43,503	232,756	443,679	585,986	666,626	702,914	As Recycled Water Exhibit 4
Total Water O & M Division	$43,503	$600,412	$854,458	$1,009,088	$1,102,422	$1,151,783	
Total Operations & Maintenance	**$43,503**	**$600,412**	**$854,458**	**$1,009,088**	**$1,102,422**	**$1,151,783**	
Transfers							
In	$0	$0	$0	$0	$0	$0	As Miscellaneous
Out	0	0	0	0	0	0	As Miscellaneous
Rate Funded Capital	0	0	0	75,000	200,000	275,000	
Total Transfers	**$0**	**$0**	**$0**	**$75,000**	**$200,000**	**$275,000**	
Debt Service							
Existing Debt - Recycled Water	$0	$0	$750,000	$750,000	$750,000	$750,000	From City
Additional Long Term Debt	0	0	0	0	0	0	Calculated @ 5% for 20 yrs
Total Debt Service	$0	$0	$750,000	$750,000	$750,000	$750,000	
LESS: Other Funding							
Expansion & Repair Replace. Fund for Debt	$0	$0	$0	$0	$0	$0	
Net Debt Service	**$0**	**$0**	**$750,000**	**$750,000**	**$750,000**	**$750,000**	

City of Pleasanton
Water Utility Rate Study
Revenue Requirement - Recycled Water
Exhibit 3

	Budgeted	Projected					
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	***Notes:***
Change in Working Capital +/-							
To/(From) Water Expansion Fund	$0	$0	$0	$0	$0	$0	
To/(From) Water Replacement Fund	0	0	0	0	0	0	
To/(From) Recycled O&M Fund	0	0	0	0	0	0	
Total Change in Working Capital +/-	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Revenue Requirement	**$43,503**	**$600,412**	**$1,604,458**	**$1,834,088**	**$2,052,422**	**$2,176,783**	
Bal/(Def) of Funds	**$344,031**	**$301,139**	**($139,655)**	**$15,955**	**$21,472**	**$4,110**	
Balas a % of Rate Adj. Required	**-335.5%**	**-49.1%**	**11.9%**	**-1.0%**	**-1.2%**	**-0.2%**	
Proposed Rate Adjustment [1]	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	Proposed Rates Included in Revenu
Months of Adjustment	**12**	**12**	**12**	**12**	**12**	**12**	
Additional Revenue with Rate Adj.	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Bal/(Def) After Rate Adjustment	**$344,031**	**$301,139**	**($139,655)**	**$15,955**	**$21,472**	**$4,110**	
Balance as a % of Rate Revenues	**-335.5%**	**-49.1%**	**11.9%**	**-1.0%**	**-1.2%**	**-0.2%**	
[1] Rate Adjustment included in proposed rates							
Average Residential Customer Bill	$2.35	($ / CCF)					
Customer Bill on Proposed Adjustment	$2.35	$2.35	$2.35	$2.35	$2.35	$2.35	
Bill Difference - Monthly	0.00	0.00	0.00	0.00	0.00	0.00	
Cumulative Bill Difference	0.00	0.00	0.00	0.00	0.00	0.00	
Debt Service Coverage Ratio (all debt)							
Before Rate Adjustment	N/A	N/A	0.81	1.12	1.30	1.37	
After Proposed Rate Adjustment	N/A	N/A	0.81	1.12	1.30	1.37	
Reserve Funds							
Operations Fund							
Beginning Balance	$0	$344,031	$645,170	$505,515	$521,470	$542,941	
Plus: Additions	344,031	301,139	0	15,955	21,472	4,110	
Less: Uses of Funds	0	0	(139,655)	0	0	0	
Ending Balance	$344,031	$645,170	$505,515	$521,470	$542,941	$547,051	
Minimum Fund Balance - 90 days O&M	*$10,727*	*$148,047*	*$210,688*	*$248,816*	*$271,830*	*$284,001*	
Ending Fund Balance/(Deficiency)	*$333,304*	*$497,123*	*$294,827*	*$272,654*	*$271,111*	*$263,050*	

City of Pleasanton
Water Utility Rate Study
Exhibit 4
Purchased Water - Recycled Water

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	*Notes*
Revenues							
Assumed Rate ($/CCF)	$2.3537	$2.6330	$2.6426	$2.6524	$2.6625	$2.6728	90% of Irrigation Rate
Assumed Volume (CCF)	43,563	233,077	444,291	586,794	667,546	703,884	As Recycled Water - Cust. Growth
Calculated Revenue	$102,534	$613,701	$1,174,074	$1,556,406	$1,777,321	$1,881,355	
Expenses							
Purchased Water Projection	$40,000	$200,000	$480,000	$720,000	$760,000	$800,000	As Purchased Water - Recycled
Source							
DSRSD ($/AF)	$430	$445	$461	$477	$493	$511	As Purchased Water - Recycled
Purchased CCF	39,207	209,769	399,862	528,115	600,791	633,496	**90%**
Calculated Purchased Water	$38,703	$207,073	$394,721	$521,325	$593,068	$625,351	
Livermore ($/AF)	$480	$497	$514	$532	$551	$570	As Purchased Water - Recycled
Purchased CCF	4,356	23,308	44,429	58,679	66,755	70,388	**10%**
Calculated Purchased Water	$4,800	$25,683	$48,958	$64,660	$73,559	$77,563	
Total Purchased Water Cost	$43,503	$232,756	$443,679	$585,986	$666,626	$702,914	

City of Pleasanton
Water Utility Rate Study
Recycled Water Fund
Exhibit 5

Inflation	0.0%

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Notes:
Beginning Fund Balance	**$0**	**$1,366**	**$1,366**	**$1,366**	**$76,366**	**$276,366**	
Revenue							
Plus: Connection Fees	$0	$0	$0	$0	$0	$0	*Exhibit 6*
SRF Loan - Recycled Water	10,000,000	9,000,000	0	0	0	0	
Plus: Rate Funded Capital	0	0	0	75,000	200,000	275,000	
Plus: From RR Fund	1,205,000	0	0	0	0	0	
Plus: From Expansion Fund	0	0	0	0	0	0	
Additional Revenue Bonds	0	0	0	0	0	0	
Total Revenue	$11,205,000	$9,000,000	$0	$75,000	$200,000	$275,000	
Water Expansion							
Recycled Water Project	$10,000,000	$9,000,000	$0	$0	$0	$0	
Recycled Water Project	118,634	0	0	0	0	0	
Recycled Water Infras Exp - Design	1,085,000	0	0	0	0	0	
Total Water Expansion	$11,203,634	$9,000,000	$0	$0	$0	$0	
To O&M Fund for Debt Service	$0	$0	$0	$0	$0	$0	
Ending Fund Balance	**$1,366**	**$1,366**	**$1,366**	**$76,366**	**$276,366**	**$551,366**	

City of Pleasanton
Water Utility Rate Study
Connection Fee Calculation - Recycled Water
Exhibit 6

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025
Recycled Water Fund											
Fee	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
# of New Cust.	0	0	0	0	0	0	0	0	0	0	0
Fee Revenue	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

City of Pleasanton
Recycled Water
Alternative 1

	Present	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Total Rate Adj.	***Rates***	*0.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Bi-Monthly Fixed Fee						
All Customers	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Consumpiton Charge						
All Consumption	$2.3537	$2.6330	$2.6426	$2.6524	$2.6625	$2.6728

Technical Appendix C – Tier Pricing Analysis

Technical Memorandum – Cost Basis for Tiered Pricing

Introduction

HDR Engineering, Inc. (HDR) was retained by the City of Pleasanton (City) to develop a water, sewer, and recycled water rate study. During the development of the study, the Capistrano Taxpayers Association, Inc. v. City of San Juan Capistrano decision was rendered by the Appellate Court, which determined that a cost basis must be established for each of the pricing tiers of a tiered or increasing block rate structure. This decision has implications for all California utilities designing and implementing rates.

California has always recognized the importance and value of water supply. Efficient water use, and discouragement of inefficient or wasteful use, has been at the heart of many water utility conservation programs. In particular, one of the important conservation tools used by water utilities is conservation pricing and conservation-oriented rate structures to encourage efficient use through price signals. It is a well recognized economic principle that as the price of a commodity increases the demand for the commodity will go down. By creating water rate structures which increase in per unit price as consumption becomes less efficient, the high use or inefficient water user is provided with a "price signal" to be more efficient in their usage. In *Capistrano*, the issue of penalty or punitive pricing for inefficient or wasteful users was a point of contention. In short, the Capistrano decision determined among other things that, in order to be compliant with Proposition 218, there must be a cost-basis for each of the pricing tiers. Given that, the purpose of this technical memorandum is to briefly review the Capistrano decision and discuss the cost basis for the City's tiered pricing water rate structure.

San Juan Capistrano and Proposition 218

It has always been important for a utility to have cost-based rates that are fair, equitable, and defendable. The basis for establishing water rates that are fair, equitable, and defendable has traditionally been cost of service principles and methodologies.[1] At the same time, the courts have historically recognized that municipal entities can take into account policy objectives other than strictly cost of service when establishing rates (e.g., conservation, efficient use, ability to pay, etc.). In most parts of the U.S., that policy latitude in establishing utility rates remains intact.

In contrast to above discussion regarding policy latitude, the State of California has certain well established legal constraints regarding utility ratemaking, of which Proposition 218 is at the forefront. At its very core, Proposition 218 requires a water utility to establish cost-based rates for the services provided. However, like most propositions or voter's initiatives, Proposition 218 provided certain direction, but lacked clarity and definition in certain areas. Hence, there have been a number of lawsuits in recent years related to utility rates and Proposition 218. In the *Capistrano Taxpayers Association, Inc.* v. *City of San Juan Capistrano*, the City of San Juan Capistrano (Capistrano) was challenged, among other items, over the cost-basis for the tiers (price blocks) of their tiered water rate

[1] Generally-accepted cost of service principles and methodologies are best defined and discussed within the American Water Works Association M-1 Manual, Principles of Water Rates, Fees and Charges.

structure. In this specific case, it appears that the key issue was the pricing of the upper blocks (3rd and 4th blocks) and the price/cost difference between the prior tiers pricing. The change in prices between the Capistrano's tiers was significant, and was the main challenge by the plaintiffs claiming that the "punitive" pricing was not cost justified under Proposition 218. Capistrano believed that the pricing was justified under the constitutional requirement to use water efficiently and Capistrano viewed the pricing as penalty blocks for inefficient or wasteful use.

The initial ruling of the court in this case was not favorable to Capistrano. Capistrano appealed the court's decision, and the Appellate Court hearing this case recently upheld the lower court's decision as it pertained to the pricing of the tiers within Capistrano's water rate design. In summary, the Appellate Court ruled that tiered rates are a valid rate structure under Proposition 218, but to be legally compliant with Proposition 218, the pricing of the tiers must be cost-based. Unless there is an appeal of this ruling to the California State Supreme Court, the San Juan Capistrano decision will continue the trend of more narrowly defining "cost-based" rates, particularly as they relate to the pricing used in rate design. The Court's decision has greatly diminished the latitude for policy input of the legislative body in establishing a local utility's rates.

While much of the focus of the *San Juan Capistrano* decision was on the issue of tiered pricing, there was a second important and over-arching legal issue for water utilities within the *San Juan Capistrano* decision. Capistrano's inclusion of a portion of the costs associated with water reuse (i.e. recycled water) within the potable water rates was also challenged by the Capistrano Taxpayers Association. The initial court ruling was that if a customer did not "touch" the reuse water, then they should not be charged for it. In appeal, this was overturned and the Appellate Court recognized that water reuse and recycled water programs are a part of utility's overall water supply portfolio and as such, potable water customers do benefit from those types of reuse programs. Essentially, the court agreed that a gallon of reuse water provided to an irrigation customer essentially frees up a gallon of potable water for use on the potable water system.

In summary, and for purposes of the development of the Capistrano's rates, the use of tiered pricing is not illegal and the Appellate Court specifically noted " . . . tiered, or inclined rates that go up progressively in relation to usage are perfectly consonant with article XIII D, section 6, subdivision (b)(3) . . ." However, what this means is that the pricing of the tiers must be cost-based and reflect the costs incurred to provide water service at the various tiers established by the utility. In addition, as the utility develops their potable water rates, a portion of the costs associated with recycled water may be included within the potable water rates since those costs are incurred to supplement and benefit the utility's total water supply resources.

Overview of Tiered Pricing

At first glance, one might think that all water costs the same, no matter how much you use. However, in reality, as usage increases the costs may change significantly, depending upon a number of different factors which are all primarily drive by consumption levels and capacity use. Traditionally, tiered pricing has been based upon the premise that each consumption block should represent some portion of a customer's usage and the price should reflect the changes in costs associated with those higher levels of usage. For example, the tiers or usage blocks for a residential customer may be categorized around:

- Tier 1 – Efficient indoor use

- Tier 2 – Efficient outdoor use
- Tier 3 – Inefficient outdoor use
- Tier 4 – Wasteful use

While there are no specific technical limitations or legal requirements on the number of tiers, most utilities have established tiered rate structures with two to four tiers.

Given the establishment of the number of tiers and the basis for the sizing of the tiers, the focus can now shift to the cost-basis for the pricing of the tiers. After the *San Juan Capistrano* decision, HDR concluded that utilities have at least three technical approaches to be able to demonstrate (i.e. cost justify) the individual pricing of the tiers. These costing techniques encompass the following areas:

- Cost differences in water supply (i.e., stacking of water supply resources to tiers)
- Direct assignment of costs to specific (upper) tiers (e.g., conservation program costs, recycled water costs, etc.)
- Capacity cost differences from high peak use consumers (relationship of average use to peak use)

Each of these technical approaches is discussed in more detail below.

Cost Differences in Water Supply Costs - In the *San Juan Capistrano* case, the court primarily focused its attention on the cost of water supply as the explanatory variable for tiered pricing. For some utilities, this may be the case and the differences in water supply costs from a utility's array of water resources are easily identifiable. When a utility has multiple sources of supply, a utility may use least cost planning for supply planning and will most likely use water from their cheapest (least cost) resource first. Once that resource is fully utilized then the next most expensive water resource is utilized, and so on. The last available resource (e.g. a desalination plant, water reuse, recycled water, etc.) is typically very expensive (i.e. the marginal cost of supply). In this example, it can be seen that the water resources and corresponding costs can be assigned to pricing tiers with the lowest cost water resource applied to the first price tier and subsequent water resources and costs "stacked" to the water rate tiers, with the most expensive water resource likely assigned to the top tier (e.g. inefficient or wasteful usage). The logic of assigning the most expensive water resources to the upper tiers is because most utilities have a limited and finite source of water supply available. The impact of high volume water users on water supply costs can be profound. As an example, if everyone used water similar to an average residential customer, there may not be a need for the additional water resources and the utility would potentially be able to avoid the cost of the next or last increment of water supply. Taken to an extreme, imagine the water supply resources needed if all residential customers on the system consumed water in the same manner as the largest residential user on the system.[2] Thus, the assignment of the highest cost water supplies to large volume users is consistent with the manner in which the costs are incurred.

Direct Assignment of Specific Costs - The next method that may be used to cost justify pricing tiers is the direct assignment of specific costs to tiers. Under this method, the utility may incur a cost simply as a function of or benefit to the large volume or upper tier customers. A good example of this is a

[2] At the City of Pleasanton, an average residential customer uses 20 gallons per bi monthly billing period. Some of the largest residential water users consume over 200 gallons per bi-month billing period, or 10 times greater than the average residential customer.

conservation program that targets outdoor use or a turf buy-back program. Clearly, this program is targeting the usage associated with the high volume upper tiers and, given that, the costs associated with this type of conservation program should be assigned to the upper tiers (i.e. those being targeted). This seems reasonably justified since little or no outdoor use is typically incurred in first block (indoor) usage.

Capacity Cost Differences From High Peak Use Customers – The final area in which costs may vary by tier is related to meeting peak use demands on a system. As customers use water, the delivery of the water is a function of the volume of water being delivered, but also the rate of flow. The rate of flow translates into the concept of capacity and the sizing of facilities needed to meet peak use demands at any point in time. To better understand the distinction between volume and capacity use, imagine a 100,000 gallon tank that needs to be filled with water. Using a garden hose to fill the tank would certainly provide the 100,000 gallons of water to fill the tank, but due to a lack of capacity, the rate of flow is very low and it would take a long time to fill the tank (approximately 83 hours at a flow (capacity) rate of 20 gallons per minute). Now, if you want to fill the tank quickly with water, you could use a fire hose with a flow (capacity) rate of 1,000 gallons per minute and fill it in approximately 1.6 hours. That difference is the time required to fill tank is related to capacity.

Capacity is an important concept for water utilities since utilities must incur the cost to construct facilities to meet these high customer demands on the system. The capital investment needed to size and meet higher levels of water demands is greater than that of a system with lower (flatter) demand. The large peak demands placed on the system by large volume users requires additional oversizing of facilities to meet their peak demand requirements. A basic cost of service principle is "those who create the cost should pay the cost." In this case, the customers creating the large peak demand (i.e. upper tier customers) should pay the costs associated with the oversizing of facilities needed to meet their extraordinary high demands. Simply stated, the costs associated with high volume users is not solely a function of the volume of water, but rather, the sizing of facilities needed to meet their excessive peak use requirements. Similar to the issue noted on water supply, if all residential customers used water in the same volumes and capacity demand patterns[3] of the largest residential users on the City's system, the distribution (i.e. capacity-related) costs of the system would be significantly greater. That is, the distribution system would need to be over-sized more than it is today.

Development of the City's Residential Tiered Pricing

A traditional cost of service methodology equitably allocates a utility's costs to specific customer classes of service (e.g. residential, commercial, etc.), but not to distinct usage tiers. Traditionally, rates were developed and proposed which met the allocated costs to the particular customer class of service, but then incorporated other policy considerations other than strictly cost of service (e.g. revenue stability, conservation, etc.) The *San Juan Capistrano* case, however, ruled that costs must be established for the price tiers, which implies that the cost of service will need to allocate costs to not only customer classes but also to each consumption tier, or alternatively, an analysis be used to demonstrate the cost-basis for the pricing of the tiers. This portion of the technical memorandum describes the process which HDR used to develop the cost basis for the City of Pleasanton's residential tiered pricing.

[3] Capacity demand patterns refers to the fact that low use residential customer's summer peak use is relatively low compared to the average day or average hour residential demand. In contrast to this, a high volume customer's peak day or peak hour demand is many times greater than the average residential customer's demands.

Establishment of the Tier Sizes – For the City's residential tiered rate structure, the City has established 4 blocks. These are defined as follows:

- **Tier 1** – 0 to 20 CCF[4] 0 – 14,960 gallons
- **Tier 2** – 20 – 40 CCF 14,961 – 29,920 gallons
- **Tier 3** – 40 to 60 CCF 29,921 – 44,880 gallons
- **Tier 4** – Over 60 CCF Over 44,880 gallons

The above tier sizes and break points have historically been utilized by the City for a number of years and the City desires to maintain them. These tiers were developed during prior rate structure reviews and reflect the City's specific customers and use (e.g., average indoor use, average outdoor use). For example, the average use of the City's residential customers is 20 CCF bi-monthly. That is reflected in the sizing of the first tier of 0 – 20 CCF. HDR in reviewing these block sizes and the tiered pricing issue considered the customer demand patterns of the customers using water in each tier block. Provided below is a summary of this review.

Table 1
Summary of Customer Bi-Monthly Demand Patterns

	Tier 1 *(0–20 CCF)*	Tier 2 *(20–40 CCF)*	Tier 3 *(40–60 CCF)*	Tier 4 *(60+ CCF)*
Total Use In CCF ('13&'14)	***1,692,686***	***516,839***	***197,909***	***321,024***
Average Use In CCF ('13&'14)	**11.57**	**27.50**	**47.80**	**108.48**
Peak Use Factor	**1.41**	**1.83**	**2.43**	**3.42**
Peak Use Factor in Relation to Tier 1	**1.00**	**2.38**	**4.13**	**9.37**
Proportion A – All Tiers	15.5%	20.1%	26.8%	37.6%
Proportion B – Tiers 3 and 4	0.0%	0.0%	41.6%	58.4%
Proportion C – Tier 4	0.0%	0.0%	0.0%	100.0%
Proportion D – Tiers 2, 3, and 4	0.0%	23.8%	31.7%	44.5%

As Table 1 indicates, the average use of a Tier 1 customer, or the customer that does not exceed 20 CCF, is approximately 12 CCF. This volume, when compared to a Tier 4 customer that uses on average 108 CCF, which is about nine times greater than the Tier 1 customer's demand. Stated another way, a customer in Tier 4 is approximately the same as nine (9) – Tier 1 customers. The utility can serve nine – Tier 1 customers for every Tier 4 customer that it serves. However, on a peaking factor basis, which would represent the customers impact on system capacity or the need to design the system to peak demand characteristics, the Tier 4 customers is approximately three and a half times a Tier 1 customer.

Using the peak use factors, proportions can be developed based upon the amount of capacity that is demanded by a consumer when they consume water in a specific tier. The implications of customer

[4] A CCF is one hundred cubic feet. 1 CCF = 748 gallons

demands upon a water system are immense and for the most part relate to the sizing and construction of facilities to meet these excessively large demands. The demand relationships shown in Table 1 will be used later in this analysis in the assignment of certain and specific costs to tiers. Given that overview of the residential tier blocks, the discussion can shift to the pricing used for each rate tier.

Pricing of the City's Water Rate Tiers - As discussed previously, there are at least three techniques or approaches that may be used to demonstrate (i.e. cost justify) the individual pricing of the City's tiered rates. These techniques or approaches were:

- Cost differences in the City's water supply (i.e., stacking of water supply resources to tiers)
- Direct assignment of costs to specific (upper) tiers (e.g., conservation program costs, etc.)
- Capacity cost differences from high peak use consumers (relationship of average use to peak use)

Each of these technical approaches, as they relate to the City's analysis and development of tiered rates are discussed in more detail below.

Cost Differences in the City's Water Supply Costs – The City purchases the bulk of its potable water supply from Zone 7, with the remaining supply coming from City owned groundwater wells. The cost of the water supply is $2.40/CCF from Zone 7 and does not vary based upon lower or higher volumes of water consumed. While groundwater is much cheaper, it only provides a minimal component of the City's overall water supply needs. As a result, there does not appear to be any cost justification for assigning a higher or lower cost of water supply to the various tiers. At the same time, the City has established a rate philosophy of having the price of the first tier reflect the cost of water from Zone 7. Given that, the first tier is established at $2.40/CCF. By establishing the first Tier rate based on the cost of Zone 7 water purchases, the City is recognizing the fact that a portion of the water supply costs from groundwater supply is much cheaper and the pricing at the purchase water price would include a component for distribution expenses for Tier 1 customers.

Direct Assignment of the City's Specific Costs – In the City's analysis, there were two costs which appeared to benefit specific tiers and, as such, they were directly assigned to tiers. The two specific costs in the City's rate study which were directly assigned were:

- Conservation Program Costs
- Vineyard Avenue Capacity Improvements (Enhancements)

The water conservation program costs were assigned to Tiers 3 and 4 to reflect where the City incurs the costs for the conservation program. In this case, primarily for large residential water users in Tiers 2 through 4. The conservation costs have been allocated between the tiers based on where the City spends it's time and effort and based on the difference in overall consumption in each tier and the peaking factor between the tiers. Given this, approximately 30% of the capacity demand profile is related to Tier 3 and the balance, or approximately 70%, were assigned to Tier 4. The residential share of the conservation program costs are $181,503. Of this amount, approximately $55,000 was assigned to Tier 3 and the balance, or approximately $126,000 was assigned to Tier 4. Conservation program costs were not assigned to Tier 1 since that tier is strictly related strictly water supply (Zone 7) costs and Tier 2 reflects typical outdoor use.

The final direct assignment cost for the City was the transfer of costs for the Vineyard Avenue capacity improvements. This was a transfer payment of $44,505 which was assigned entirely to Tier 4. These improvements were necessary to meet peak day demands of the system. As a result, the City oversized the improvements in this area to meet those maximum demands. As a result, the costs associated providing additional capacity is allocated to the highest or 4th tier to reflect those maximum demands on the system.

Capacity Cost Differences from the City's High Peak Use Consumers – The final type of cost incurred by the City that may reflect cost differences by price tiers is capacity related costs. As noted in the prior discussion, as capacity use increases, there is an impact to infrastructure. At the same time, not all capacity costs are related to, or a function of the sizing of infrastructure. To better understand the City's capacity costs and the assignment of certain capacity-related costs to the various pricing tiers, the focus of the analysis shifted to the cost of service analysis conducted by HDR.

HDR developed a water cost of service analysis as part of the City's comprehensive water rate study. A cost of service performs three analytical steps with the data. First, the cost data is *functionalized* and sorted by function (e.g. supply, pumping, distribution, etc.). Next, the costs are *allocated* to cost categories based upon how the costs are incurred. The costs are allocated to various categories based upon total usage (commodity), peak day demands (capacity), number of customers, public fire protection needs, revenues, or directly assigned.

The analysis used the commodity demand methodology as established in the American Water Works M1 Manual. The focus of establishing the cost basis for the City's tiered rates was focused on the costs allocated, or related to, providing capacity. Using this generally accepted methodology[5] the capacity costs are based on the relationship of the customer's peak demands need regardless of when it occurs. This is also known as the non-coincident peak demand as it may occur outside of the system peak demand. The use of non-coincident peak demands is essential to developing the pricing analysis as the City must plan for meeting peak demands regardless of when they occur. As a result, and as noted previously, the greater demands on the system, the larger the sizing of the system will need to be. Therefore, those customers that place the greater demands on the system should bear a greater proportion of the costs related to providing the available capacity in the system.

Given this discussion, and based on a generally accepted cost of service approach, Table 2, shown below, summarizes the allocation of the City's costs.

Table 2
Summary of the Allocation of the FY 2016 Total Water Revenue Requirement ($000)

	Commodity	Capacity	Actual Customer	Cust. Acct.	Meters & Services	Public Fire Protect.	Revenue Related	Direct Assign.
Total Net Rev. Req.	$13,827	$2,708	$920	$0	$0	$0	$0	$380

[5] The generally accepted water cost of service methodologies and techniques used within the City's study is based upon the American Water Works Association, Principles of Water Rates, Fees and Charges, 6th Edition.

The costs shown in Table 2 reflect the total water revenue requirements of the City. As noted above in the introductory discussion, certain costs may vary by pricing tier based upon capacity. Given that, the next step was to analyze the capacity related costs ($2.7 million) contained in Table 2, which is the focus of developing the cost-basis for the tier are pricing.

In reviewing the capacity-related costs they were split into two types of capacity: operational capacity and infrastructure capacity. The operational capacity costs are, as the name suggests, related to the operation and maintenance of the utility. These costs do not vary by tier. In contrast, infrastructure capacity costs are related to the physical capital costs associated with infrastructure capacity. The $2.7 million in capacity costs is not entirely related to residential customers. Of that amount, approximately $1.5 million is the cost responsibility of the residential customers. This detail is shown below in Table 3.

Table 3
Summary of the FY 2016 Single-Family Residential Capacity Costs ($000)

	Total Capacity	SFR Capacity	Operational Capacity	Infrastructure Capacity
O&M Costs	$1,903	$1,031	$1,031	$0
Transfers	852	461	0	461
Change in Working Capital	95	51	51	0
Total Costs	**$2,850**	**$1,543**	**$1,082**	**$461**
Less: Misc Revenues	*142*	*77*	*54*	*23*
Net Total Costs	***$2,708***	***$1,467***	***$1,028***	***$438***

As shown in Table 3, the residential capacity costs of approximately $1.5 million were then segregated between operational capacity and infrastructure capacity. The operational capacity costs are not the focus of this discussion since they are not related to over-sizing of infrastructure. Rather, the focus of the analysis is on the infrastructure capacity costs which totaled approximately $438,000.

There were two primary costs associated with the infrastructure capacity costs of $438,000. These were the recycled water costs and the repair and replacement funding. Recycled water costs reflect a component of potable water rates that are used to offset the capital component of funding the recycled water system. The repair and replacement funding is the annual transfer to fund capital replacements on the system on an annual basis.

For the recycled water costs, it was assumed that the capacity related portion of recycled water ($62,689) is related to tiers 2, 3, and 4 which are primarily related to outdoor use. In other words, the use of recycled water for outdoor consumption, which is use in tiers 2-4, frees up potable water for other customers. The cost is split approximately 23.8% to Tier 2, 31.7% to Tier 3 and 44.5% to Tier 4, using the residential customer demand patterns shown in Table 1 (Proportion D).

The capacity related portion of repair and replacement capital costs ($398,593) are assigned to all four tiers, but assigned to be reflective of the differences in capacity use (peaking factors) by the various tiers. To assign these costs, Proportion A factors (Table 1) were utilized. In essence, the largest users on the system, placing the greatest demands receives a larger proportion of the costs than the lower use/low demand customers.

There were some other minor miscellaneous revenues ($23,017) which were assigned to tiers based upon the way in which all other capacity-related costs were assigned. This method of assignment is consistent with the cost of service analysis methodology developed for the City.

Table 4
Summary of the FY 2016 Infrastructure Capacity Costs by Tier ($000s)

	Infrastructure Costs	Tier 1 *(0–20 CCF)*	Tier 2 *(20–40 CCF)*	Tier 3 *(40–60 CCF)*	Tier 4 *(60+ CCF)*
O&M Costs	$0	$0	$0	$0	$0
Transfers					
-Recycled Water	63	0	15	20	28
- Repair and Replacement	399	62	80	107	150
Direct Assignment	0	0	0	0	0
Change in Working Capital	0	0	0	0	0
Total Costs	**$462**	**$62**	**$95**	**$127**	**$178**
Less: Misc. Revenues	23	2	3	6	12
Net Total Costs	**$439**	**$60**	**$92**	**$121**	**$166**

The totals shown in Table 4 reflect only the costs associated with infrastructure capacity.

Summarizing the Analysis of Pricing to Tiers – The final step in the analysis is to summarize the costs which were assigned to each of the pricing tiers using the above analysis. As was noted in the discussion, only direct assignments and infrastructure capacity costs were assigned to different pricing tiers. A summary of those analyses is shown below in Table 5.

Table 5
Summary of the FY 2016 Total Assigned Cost Pricing by Tier ($000s)

	Infrastructure Costs	Tier 1 *(0–20 CCF)*	Tier 2 *(20–40 CCF)*	Tier 3 *(40–60 CCF)*	Tier 4 *(60+ CCF)*
O&M Costs –					
Water Conservation	$182	$0	$0	$55	$126
Transfers					
-Recycled Water	63	0	15	20	28
- Vineyard Ave. Capacity	45	0	0	0	45
- Repair and Replacement	399	62	80	107	150
Direct Assignment	0	0	0	0	0
Change in Working Capital	0	0	0	0	0
Total Costs	**$687**	**$62**	**$95**	**$182**	**$348**
Less: Misc. Revenues	23	2	3	6	12
Net Total Costs	**$664**	**$60**	**$92**	**$176**	**$336**

Utilizing the costs from Table 5 and the total consumption in each tier, Table 6 provides a summary of the average unit costs for each tier. The unit cost shown are on a $/CCF basis and reflect the assigned

costs that are incurred to provide water service for each tier under the assumptions of the allocation proportions development.

Table 6
Summary of the Average Unit Costs for the Total Assigned Costs by Tier ($000s)

	Total Assigned Costs	Tier 1 *(0–20 CCF)*	Tier 2 *(20–40 CCF)*	Tier 3 *(40–60 CCF)*	Tier 4 *(60+ CCF)*
O&M Costs –					
- Conservation Costs	$182	$0.0000	$0.0000	$0.1834	$0.3392
Transfers					
- Recycled Water	$63	0.0000	0.0290	0.1006	0.0871
- Vineyard Ave. Capacity	$45	0.0000	0.0000	0.0000	0.1386
- Repair and Replacement	$399	0.0365	0.1554	0.5388	0.4666
Direct Assign.	0	0.0000	0.0000	0.0000	0.0000
Change in Work. Capital	0	0.0000	0.0000	0.0000	0.0000
Total Costs	**$687**	**$0.0140**	**$0.1970**	**$0.7588**	**$1.2830**
Less: Misc. Revenue	23	$0.0012	$0.0062	$0.0308	$0.0363
Net Total Costs	**$664**	**$0.0353**	**$0.1782**	**$0.8883**	**$1.0490**
CCF Consumption	**2,728,458**	**1,692,686**	**516,839**	**197,909**	**321,024**

Unit Costs for each tier are calculated by dividing the cost for each tier (Table 5) by the CCF consumption in each tier

Given the calculated cost per tier, the final step is to summarize the rates by including all other costs; Zone 7 purchased water and O&M operational capacity costs. Table 7 provides a summary of this analysis.

Table 7
Summary of the Rates By Tiers (FY 2016)

	Tier 1 *(0–20 CCF)*	Tier 2 *(20–40 CCF)*	Tier 3 *(40–60 CCF)*	Tier 4 *(60+ CCF)*
Zone 7 Purchases	$2.4000	$2.4000	$2.4000	$2.4000
Operational Capacity	0.3768	0.3768	0.3768	0.3768
Assigned By Tiers (Table 6)	0.0353	0.1782	0.8883	1.0490
Total Tier Related Cost	**$2.8121**	**$2.9550**	**$3.6651**	**$3.8258**
Proposed Rates (10/1/15)	$2.4000	$2.7581	$2.9825	$3.7520

As can be seen in Table 7, Zone 7 water supply purchases and the O&M expenses related to operational capacity do not vary by tier. The portion of the rate which does vary by tier are the specific costs discussed above which are primarily related to the City's water conservation program, recycled water, the Vineyard Avenue capacity enhancements and the repair and replacement (infrastructure) funding. As can be seen, the calculated pricing for tiered rates is relatively in line with the City's proposed

residential tiered pricing, and all proposed tiered prices are below the maximum price calculation for each tier. This would suggest that the City's proposed tiered rates are justified and cost-based.

It should be noted that the proposed rates in total are on average approximately 89% of the calculated unit rates for each tier. In other words, the City could effectively increase the consumption charges but has chosen to collect the difference through the fixed meter charge, which also varies based on the capacity of the meter. This methodology of allocating costs to tiers was developed to reflect to the *San Juan Capistrano* decision, as well as conform to Proposition 218 requirements. The methodology was derived based upon generally accepted cost of service analysis principles and methodologies.

Considerations

The basis for establishing tiered water pricing is based upon the specific costs, characteristics and usage patterns of a utility's customers. Two geographically similar utilities may have totally different tiered rates and pricing due to a variety of factors such as water supply, climate, topography, seasonality of customers, average lot size, and so on. This would suggest that it is substantially difficult to compare the tiered pricing of any two utilities and reach any conclusions about the cost-basis of their pricing without having an intimate understanding of how the utility incurs its costs. Finally, the pricing by tier is subject to change over time as costs change, but more importantly as customer usage by tiers changes. Changing consumption in each tier can change the unit costs from year to year and care should be taken to try and have stable rates and pricing over time.

Summary

The development of a cost-basis for City's tiered pricing has recently become essential in order to be legally compliant with Proposition 218 and the recent *San Juan Capistrano* decision. The analysis developed herein has calculated prices for the City's tiered rates which indicate that the City of Pleasanton's residential tiered rate structure is cost based. This finding will enable the City to establish cost-based tiered rates.

City of Pleasanton
Water Utility Rate Study

	Expenses FY 2016	Commodity (COMM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
Expenses										
Water Planning	$0	$0	$0	$0	$0	$0	$0	$0	$0	60% Comm 40% Cap
Water Conservation	335,098	0	0	0	0	0	0	0	335,098	100% DA
Water O&M	4,718,779	2,816,016	1,902,763	0	0	0	0	0	0	60% Comm 40% Cap
Water Purchase - Zone 7	10,335,378	10,335,378	0	0	0	0	0	0	0	100% Comm
Utility Billing	968,620	0	0	968,620	0	0	0	0	0	100% AC
Total	$16,357,876	$13,151,395	$1,902,763	$968,620	$0	$0	$0	$0	$335,098	
Total Operations & Maintenance	**$16,357,876**	**$13,151,395**	**$1,902,763**	**$968,620**	**$0**	**$0**	**$0**	**$0**	**$335,098**	$0 $0 $0 $0
Transfers Out										
Out - Replacment Fund for Recycled Water Rev	$287,850	$171,780	$116,070	$0	$0	$0	$0	$0	$0	60% Comm 40% Cap
Out - Replacment Fund for Vineyard Ave 4th Tier fee	44,505	0	0	0	0	0	0	0	44,505	100% DA
Rate Funded Capital - To R&R Fund	1,825,000	1,089,101	735,899	0	0	0	0	0	0	60% Comm 40% Cap
Total Transfers Out	$2,157,355	$1,260,881	$851,969	$0	$0	$0	$0	$0	$44,505	
Debt Service										
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0	As Total O&M
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0	0	0	0	0	As Total O&M
Total Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	
LESS: Other Funding										
Expansion Fund for Debt	$0	$0	$0	$0	$0	$0	$0	$0	$0	As Debt Service
R&R Fund for Debt	0	0	0	0	0	0	0	0	0	As Debt Service
Net Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Change in Working Capital +/-										
To/From Operating Reserve	$235,428	$140,496	$94,932	$0	$0	$0	$0	$0	$0	60% Comm 40% Cap
To/(From) Water Expansion Fund	0	0	0	0	0	0	0	0	0	60% Comm 40% Cap
To/(From) Water Replacement Fund	0	0	0	0	0	0	0	0	0	60% Comm 40% Cap
Total Change in Working Capital +/-	$235,428	$140,496	$94,932	$0	$0	$0	$0	$0	$0	
Total Revenue Requirement	**$18,750,659**	**$14,552,771**	**$2,849,664**	**$968,620**	**$0**	**$0**	**$0**	**$0**	**$379,603**	
Less: Other Revenues:										
Meter Sales	$40,400	$32,003	$6,267	$2,130	$0	$0	$0	$0	$0	As Total Revenue Requirement < DA
Federal/State Grants	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Backflow Admin Fees	181,800	144,014	28,200	9,585	0	0	0	0	0	As Total Revenue Requirement < DA
Miscellaneous	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Interfund Water Sales	0	0	0	0	0	0	0	0	0	As Total Revenue Requirement < DA
Interfund Reimbursement	390,250	309,139	60,534	20,576	0	0	0	0	0	As Total Revenue Requirement < DA
Interest Income	21,134	16,742	3,278	1,114	0	0	0	0	0	As Total Revenue Requirement < DA
In - Employee Benefit Fund/Implied Subsidy	36,303	28,757	5,631	1,914	0	0	0	0	0	As Total Revenue Requirement < DA
In - Senior Discount (funded by General Fund)	246,440	195,219	38,227	12,994	0	0	0	0	0	As Total Revenue Requirement < DA
Total Other Revenues	$916,327	725,875	142,138	48,314	0	0	0	0	0	
Total Net Revenue Requirement	**$17,834,332**	**$13,826,896**	**$2,707,526**	**$920,307**	**$0**	**$0**	**$0**	**$0**	**$379,603**	

City of Pleasanton
Water Utility Rate Study

	Total Capacity	SFR Capacity	Operational Capacity	Infrastructure Capacity	Direct Assignment	*Notes:*
Expenses						
Water Planning	$0	$0	$0	$0	$0	
Water Conservation	0	0	0	0	181,503	
Water O&M	1,902,763	1,030,615	1,030,615	0	0	
Water Purchase - Zone 7	0	0	0	0	0	
Utility Billing	0	0	0	0	0	
Total	$1,902,763	$1,030,615	$1,030,615	$0	$181,503	
Total Operations & Maintenance	**$1,902,763**	**$1,030,615**	**$1,030,615**	**$0**	**$181,503**	
Transfers Out						
Out - Replacment Fund for Recycled Water Rev	$116,070	$62,869	$0	$62,869	$0	
Out - Replacment Fund for Vineyard Ave 4th Tier fee	0	0	0	0	44,505	
Rate Funded Capital - To R&R Fund	735,899	398,593	0	398,593	0	
Total Transfers Out	**$851,969**	**$461,462**	**$0**	**$461,462**	**$44,505**	
Debt Service						
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0	
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0	
Total Debt Service	$0	$0	$0	$0	$0	
LESS: Other Funding						
Expansion Fund for Debt	$0	$0	$0	$0	$0	
R&R Fund for Debt	0	0	0	0	0	
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	
Change in Working Capital +/-						
To/From Operating Reserve	$94,932	$51,419	$51,419	$0	$0	
To/(From) Water Expansion Fund	0	0	0	0	0	
To/(From) Water Replacement Fund	0	0	0	0	0	
Total Change in Working Capital +/-	**$94,932**	**$51,419**	**$51,419**	**$0**	**$0**	
Total Revenue Requirement	**$2,849,664**	**$1,543,496**	**$1,082,035**	**$461,462**	**$226,008**	
Less: Other Revenues:						
Meter Sales	$6,267	$3,394	$2,380	$1,015	$0	*As Above*
Federal/State Grants	0	0	0	0	0	*As Above*
Backflow Admin Fees	28,200	15,274	10,708	4,567	0	*As Above*
Miscellaneous	0	0	0	0	0	*As Above*
Interfund Water Sales	0	0	0	0	0	*As Above*
Interfund Reimbursement	60,534	32,788	22,985	9,803	0	*As Above*
Interest Income	3,278	1,776	1,245	531	0	*As Above*
In - Employee Benefit Fund/Implied Subsidy	5,631	3,050	2,138	912	0	*As Above*
In - Senior Discount (funded by General Fund)	38,227	20,705	14,515	6,190	0	*As Above*
Total Other Revenues	**$142,138**	**$76,988**	**$53,971**	**$23,017**	**$0**	
Total Net Revenue Requirement	**$2,707,526**	**$1,466,508**	**$1,028,064**	**$438,445**	**$226,008**	

City of Pleasanton
Water Utility Rate Study

	Allocation of DA	*Tier 1*	*Tier 2*	*Tier 3*	*Tier 4*					*Notes:*
Expenses										
Water Planning	$0	$0	$0	$0	$0					
Water Conservation	181,503	0	0	55,356	126,147	0%	0%	30%	70%	
Water O&M	0	0	0	0	0					
Water Purchase - Zone 7	0	0	0	0	0					
Utility Billing	0	0	0	0	0					
Total	**$181,503**	**$0**	**$0**	**$55,356**	**$126,147**					
Total Operations & Maintenance	**$181,503**	**$0**	**$0**	**$55,356**	**$126,147**					
Transfers Out										
Out - Replacment Fund for Recycled Water Rev	$62,869	$0	$14,992	$19,908	$27,969	0.0%	23.8%	31.7%	44.5%	*Figure 1 (Proportion D)*
Out - Replacment Fund for Vineyard Ave 4th Tier fee	44,505	0	0	0	44,505	0.0%	0.0%	0.0%	100.0%	*Figure 1 (Proportion C)*
Rate Funded Capital - To R&R Fund	398,593	61,860	80,299	106,631	149,804	####	20.1%	26.8%	37.6%	*Figure 1 (Proportion A)*
Total Transfers Out	**$505,967**	**$61,860**	**$95,291**	**$126,539**	**$222,277**					
Debt Service										
Add'l Revenue Bonds - Replacement Fund	$0	$0	$0	$0	$0					
Add'l Revenue Bonds - Expansion Fund	0	0	0	0	0					
Total Debt Service	$0	$0	$0	$0	$0					
LESS: Other Funding										
Expansion Fund for Debt	$0	$0	$0	$0	$0					
R&R Fund for Debt	0	0	0	0	0					
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**					
Change in Working Capital +/-										
To/From Operating Reserve	$0	$0	$0	$0	$0					
To/(From) Water Expansion Fund	0	0	0	0	0					
To/(From) Water Replacement Fund	0	0	0	0	0					
Total Change in Working Capital +/-	**$0**	**$0**	**$0**	**$0**	**$0**					
Total Revenue Requirement	**$687,470**	**$61,860**	**$95,291**	**$181,895**	**$348,424**					
Less: Other Revenues:										
Meter Sales	$1,015	$91	$141	$269	$514	9%	14%	26%	51%	*As Above*
Federal/State Grants	0	0	0	0	0					
Backflow Admin Fees	4,567	411	633	1,208	2,314	9%	14%	26%	51%	*As Above*
Miscellaneous	0	0	0	0	0					
Interfund Water Sales	0	0	0	0	0					
Interfund Reimbursement	9,803	882	1,359	2,594	4,968	9%	14%	26%	51%	*As Above*
Interest Income	531	48	74	140	269	9%	14%	26%	51%	*As Above*
In - Employee Benefit Fund/Implied Subsidy	912	82	126	241	462	9%	14%	26%	51%	*As Above*
In - Senior Discount (funded by General Fund)	6,190	557	858	1,638	3,137	9%	14%	26%	51%	*As Above*
Total Other Revenues	**$23,017**	**$2,071**	**$3,190**	**$6,090**	**$11,666**					
Total Net Revenue Requirement	**$664,453**	**$59,788**	**$92,101**	**$175,805**	**$336,759**					

City of Pleasanton
Water Utility Rate Study

	Infrastructure Capacity + DA	*Tier 1*	*Tier 2*	*Tier 3*	*Tier 4*					*Notes:*
Expenses										
Water Planning	$0	$0.0000	$0.0000	$0.0000	$0.0000					
Water Conservation	181,503	0.0000	0.0000	0.2797	0.3930	0%	0%	30%	70%	
Water O&M	0	0.0000	0.0000	0.0000	0.0000					
Water Purchase - Zone 7	0	0.0000	0.0000	0.0000	0.0000					
Utility Billing	0	0.0000	0.0000	0.0000	0.0000					
Total	**$181,503**	**$0.0000**	**$0.0000**	**$0.2797**	**$0.3930**					
Total Operations & Maintenance	**$181,503**	**$0.0000**	**$0.0000**	**$0.2797**	**$0.3930**					
Transfers Out										
Out - Replacment Fund for Recycled Water Rev	$62,869	$0.0000	$0.0290	$0.1006	$0.0871	0.0%	23.8%	31.7%	44.5%	*Figure 1 (Proportion D)*
Out - Replacment Fund for Vineyard Ave 4th Tier fee	44,505	0.0000	0.0000	0.0000	0.1386	0.0%	0.0%	0.0%	100.0%	*Figure 1 (Proportion C)*
Rate Funded Capital - To R&R Fund	398,593	0.0365	0.1554	0.5388	0.4666	15.5%	20.1%	26.8%	37.6%	*Figure 1 (Proportion A)*
Total Transfers Out	**$505,967**	**$0.0365**	**$0.1844**	**$0.6394**	**$0.6924**					
Debt Service										
Add'l Revenue Bonds - Replacement Fund	$0	$0.0000	$0.0000	$0.0000	$0.0000					
Add'l Revenue Bonds - Expansion Fund	0	0.0000	0.0000	0.0000	0.0000					
Total Debt Service	$0	$0.000	$0.000	$0.000	$0.000					
LESS: Other Funding										
Expansion Fund for Debt	$0	$0.0000	$0.0000	$0.0000	$0.0000					
R&R Fund for Debt	0	0.0000	0.0000	0.0000	0.0000					
Net Debt Service	**$0**	**$0.0000**	**$0.0000**	**$0.0000**	**$0.0000**					
Change in Working Capital +/-										
To/From Operating Reserve	$0	$0.0000	$0.0000	$0.0000	$0.0000					
To/(From) Water Expansion Fund	0	0.0000	0.0000	0.0000	0.0000					
To/(From) Water Replacement Fund	0	0.0000	0.0000	0.0000	0.0000					
Total Change in Working Capital +/-	**$0**	**$0.0000**	**$0.0000**	**$0.0000**	**$0.0000**					
Total Revenue Requirement	**$687,470**	**$0.0365**	**$0.1844**	**$0.9191**	**$1.0854**					
Less: Other Revenues:										
Meter Sales	$1,015	$0.0001	$0.0003	$0.0014	$0.0016	9%	14%	26%	51%	*As Above*
Federal/State Grants	0	0.0000	0.0000	0.0000	0.0000					
Backflow Admin Fees	4,567	0.0002	0.0012	0.0061	0.0072	9%	14%	26%	51%	*As Above*
Miscellaneous	0	0.0000	0.0000	0.0000	0.0000					
Interfund Water Sales	0	0.0000	0.0000	0.0000	0.0000					
Interfund Reimbursement	9,803	0.0005	0.0026	0.0131	0.0155	9%	14%	26%	51%	*As Above*
Interest Income	531	0.0000	0.0001	0.0007	0.0008	9%	14%	26%	51%	*As Above*
In - Employee Benefit Fund/Implied Subsidy	912	0.0000	0.0002	0.0012	0.0014	9%	14%	26%	51%	*As Above*
In - Senior Discount (funded by General Fund)	6,190	0.0003	0.0017	0.0083	0.0098	9%	14%	26%	51%	*As Above*
Total Other Revenues	**$23,017**	**$0.0012**	**$0.0062**	**$0.0308**	**$0.0363**					
Total Net Revenue Requirement	**$664,453**	**$0.0353**	**$0.1782**	**$0.8883**	**$1.0490**					

City of Pleasanton
Water Utility Rate Study
Residential Tier Cost Calculation

Bi-Monthly Consumption	**Tier 1** *(0 - 20 CCF)*	**Tier 2** *(20 - 40 CCF)*	**Tier 3** *(40 - 60 CCF)*	**Tier 4** *(60 + CCF)*	*Notes:*
Zone 7 Water Purchases	$2.4000	$2.4000	$2.4000	$2.4000	
Operational Capacity	$0.3768	$0.3768	$0.3768	$0.3768	
Infrastructure Capacity	$0.0353	$0.1782	$0.8883	$1.0490	
Total Tier Related Cost	**$2.8121**	**$2.9550**	**$3.6651**	**$3.8258**	

City of Pleasanton
Water Utility Rate Study
Figure 1

Bi-Monthly Consumption	**Tier 1** *(0 - 20 CCF)*	**Tier 2** *(20 - 40 CCF)*	**Tier 3** *(40 - 60 CCF)*	**Tier 4** *(60 + CCF)*
Average Use ('13&'14)	**11.57**	**27.50**	**47.80**	**108.48**
Proportion A	***15.5%***	***20.1%***	***26.8%***	***37.6%***
Proportion B	***0.0%***	***0.0%***	***41.6%***	***58.4%***
Proportion C	***0.0%***	***0.0%***	***0.0%***	**100.0%**
Proportion D	***0.0%***	***23.8%***	***31.7%***	**44.5%**

Technical Appendix D – Drought Rate Analysis

Technical Memorandum - Drought Rates

Introduction

HDR Engineering, Inc. (HDR) was retained by the City of Pleasanton (City) to develop a water, sewer, and recycled water rate study. As part of the water rate study the City requested the development of drought rates to maintain sufficient revenues during drought periods. Drought rates are an important tool that allows the City to maintain adequate revenues when consumption declines due to voluntary or mandatory conservation due to drought conditions, such as the current drought California is experiencing, or other water shortage emergencies.

Overview of Drought Rates

A drought, or water shortage emergency, certainly creates operational challenges for the City, but it also creates certain financial/rate challenges. As the City is required to increase water conservation efforts and reduce the amount of consumptive use from their customers, the financial impacts are obvious. Reduced consumptive billings will translate into reduced overall revenue. For example, a simple request for a reduction in 10% consumptive use may translate into nearly a 10% reduction in revenues, depending upon the mix of fixed and variable charges in the rates.

Drought or water shortage rates are often adopted in advance of the drought or water emergency. At the point when the City declares a drought (specifying the drought stage) the drought rates can be implemented by the City Council. By reviewing and adopting drought rates in advance of the actual event, the City is being proactive, but more importantly the City is provided with sufficient time to carefully analyze the policy and costing decisions associated with such rates.

A water management plan or drought management plan is the foundation for the development of drought rates. This document provides a number of key items of information needed to develop drought rates (triggers for restrictions, phases or stages of restrictions, targeted level of savings, etc.). The City's water conservation plan provides the necessary information to tie the drought rates to specific conservation savings levels and was used in the development of the proposed drought rates.

Drought rates are one of several "tools" to assist during a drought or water emergency. In the City's case, the drought rates will work in tandem with the City's other conservation programs, and specifically the City's excess use penalties (Ord. 2097) previously adopted by the City. It should be noted that the existing excess use penalty rates were reviewed and discussed with City staff. It was determined that the current approach for the excess use penalty rates is meeting the City's goals and objectives and no changes to the excess use penalty rates were recommended.

Customer Responsiveness to Price

When properly designed, drought rates address the issue of the financial/revenue impacts of decreased consumption. In a drought, water rates are one mechanism or tool used to encourage or create conservation savings. When a utility enters a drought stage, it is not uncommon for a utility to have a set of water drought rates to maintain sufficient revenues due to reductions in usage. Economic theory suggests that as the price of a commodity increases there should be a corresponding decrease in consumption of that commodity. That change in consumption, in relation to the change in price, is technically referred to as the "price elasticity" of a commodity.

If the demand for commodity is very sensitive to price (i.e., small changes in price create large changes in demand) then this commodity is referred to as being "price elastic." In contrast, a commodity that is relatively insensitive to price (i.e., large changes in price create small changes in demand) is referred to as being "price inelastic." For the most part, water is "price inelastic" meaning that even with large changes in price the City will likely not see large changes in consumption. There are a number of reasons for this lack of consumer response to price. One of the key reasons is that that there is no substitute for water; we need it for drinking, food preparation and healthy living. At the same time, the current price of water is low meaning that it has high value to consumers at a very low price.

The point to be made from this discussion is that in establishing drought rates, certain portions of consumption are more price elastic than others. As an example, outdoor watering is more discretionary use than the water used for drinking, food preparation and health needs. As an example, water that is more non-discretionary may have a price elasticity of only -0.10, meaning that a 100% increase in price may result in only a 10% decrease in consumption. In contrast to this, outdoor use is far more discretionary and may have a price elasticity of -0.35, meaning that a 100% increase in price may result in a 35% decrease in consumption of that segment of water use. Given this observation, outdoor water use is typically where customers begin to cut back in response to the drought and required reductions in consumption. However, as the drought progresses into stage 3 and 4, indoor use will also be affected to meet the required reduction in consumption. It is through the use of the following proposed drought surcharges that will allow the City to maintain sufficient revenues during times of drought or water shortage situations.

Development of the Drought Rates

The potable water rates being proposed in this water rate study assume "normal" water conditions. The current drought in California extends back several years which means that the current usage characteristics cannot be considered normal use. The historical 2013 and 2014 consumption data used in the rate study was adjusted to reflect current conservation requirements (State mandated conservation) not in place during those time periods. Under drought conditions, the City will need to have customers reduce their consumption and provide sufficient conservation savings to meet the City's conservation savings goals under the various stages of drought.

For purposes of establishing drought rates, four stages for water shortage and a target water savings for each stage were established in the City's water conservation plan. These water shortage stages are summarized below.

Stage 1 – Up to 20% water savings: Voluntary

Stage 2 – Up to 20% water savings: Mandatory

Stage 3 – Up to 35% water savings: Mandatory

Stage 4 – Over 35% water savings: Mandatory

To achieve these water savings under each stage, the City would take a number of different actions. The targeted water savings would be achieved via a combination of voluntary savings and savings achieved through price signals (i.e., as the price increases, consumption will be reduced). While the purpose of drought rates is not to provide a price signal, the purpose is to maintain sufficient revenues, a customer's responsiveness to price does impact their willingness to conserve. However, each customer's response will vary based upon a number of different factors (e.g., price levels, income level of the customer, and perception of the need for conservation savings).

To help achieve the needed savings in each drought stage, HDR developed a set of rates applicable to each stage. The overall targeted savings, or reductions in use, will be achieved through both "voluntary" savings and via price incentives. In developing the water shortage surcharges HDR has assumed that under each stage there will be some level of "voluntary" savings by the customers based on education and individual conservation practices. The remaining savings will need to be achieved through price incentives and price elasticity, responsiveness to changes in price. As noted, the drought rates will be supplemented with the City's excessive use penalties and other conservation programs to achieve the total savings in each drought stage. For purposes of developing the drought rate pricing, it was assumed that the savings in each stage would target the typical reduction in consumption based on past City experience. In addition, the savings are set at a level so that the City will not overcollect revenues should customers not respond as requested. In this way, the savings for each stage reflect a conservative level of consumption savings to meet the City's revenue needs. Provided below in Table 1 is a summary of the assumptions regarding voluntary versus customer's decreased consumption due to the pricing.

Table 1
Summary of the Estimated Voluntary Versus Price Induced Conservation Savings

	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
Targeted Reduction Goal	**0%**	**20%**	**20%**	**35%**	**>35%**
Voluntary Savings	0.0%	5.0%	10.0%	15.5%	25.0%
Price Induced Savings	0.0%	0.0%	5.0%	12.0%	20.0%
Total Targeted Conservation Savings	0.0%	5.0%	15.0%	27.5%	45.0%

At the same time, during drought stages, the City would anticipate incurring additional expenses over and above the revenue requirements incurred during normal water conditions as

a result of each stage of the drought. These additional expenses will be incurred for items such as advertising and notification, additional customer outreach, temporary staffing, enforcement, etc. As a part of developing the drought charges these additional or incremental costs, which are not included in the current revenue requirement used to establish rates, have been considered and factored into the drought rates to attempt to minimize the financial impacts of these incremental costs.

Based on the City's water conservation plan, the development of the drought charges takes into consideration where the consumption savings will occur. Typically this first targets discretionary use and then, if needed, non-discretionary use. As an example, discretionary use for a residential customer is often defined as outdoor usage, while non-discretionary water use is typically considered indoor use.

In developing the water shortage rates, the monthly meter charge remains fixed at the same level regardless of the drought stage. For purposes of this discussion, it is also assumed that the Zone 7 rate is also fixed, but it will change if Zone 7 modifies their wholesale rate to the City. Therefore, the portion of the water rate impacted by the water shortage rate is the local consumption charges of the water rates. Provided below is a summary of the water shortage rates developed for the City.

Overview of the Drought Rates

Based on the conservation savings estimated for each drought stage, the drought rates were developed to maintain the current level of revenues for each customer class of service. As noted, in addition to maintaining the current level of revenue to support current operating and capital costs, additional costs the City incurs during the drought were included to reflect the changes in costs at each stage. These were based on recent conservation related costs during the past several years that were over and above the current budgeted expenses. Provided below in Table 2 is a summary of the drought rates for each block.

Table 2
Summary of the Drought Rates – $/CCF

	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
Single-Family					
Tier 1 – 0-20 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 2 – 21-40 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 3 – 41-60 CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Tier 4 – 60+ CCF	$0.0000	$0.1619	$0.5689	$1.2266	$2.5611
Multi-Family and Commercial					
All Consumption	$0.0000	$0.1385	$0.5400	$1.1631	$2.5145
Irrigation					
All Consumption	$0.0000	$0.1458	0.5655	$1.2244	$2.6470

The drought rates in Table 2 are added to the current rates in place at the time the drought stage is declared. For example, if the first tier rate is currently $2.4000/CCF and the City declares a Stage 2 drought, then the first tier rate will change to $2.9689/CCF ($2.4000 + $0.5689) for single-family customers. These drought rates can be added to the City's proposed rates, effective October 1, 2015, as directed by the City Council. Implementation of these drought rates will help the City maintain revenue levels during drought related consumption reductions, provide additional pricing incentives to reduce consumption, and work in tandem with the City's excessive use penalties for inefficient water users. Provided below is a more detailed discussion of the combined base rates and drought rates.

Development of the Single-Family Base Rates + Drought Rates

Based on the proposed rates and proposed drought rates, the combined rate for each drought stage can be developed. Provided below in Table 3 is a summary of the single-family rates in each stage of the drought.

Table 3
Proposed Single-Family Combined Base Rates and Drought Rates – $/CCF

	Normal Conditions [1]	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
Tier 1 – 0-20 CCF	$2.4000	$2.5619	$2.9689	$3.6266	$4.9611
Tier 2 – 21-40 CCF	$2.7581	2.9200	3.3270	3.9847	5.3192
Tier 3 – 41-60 CCF	$2.9825	3.1444	3.5514	4.2091	5.5436
Tier 4 – 60+ CCF	$3.7520	3.9139	4.3209	4.9786	6.3131

[1] Normal water condition rates reflect the proposed single-family rates effective October 1, 2015.

To better understand how the drought rates work, Table 4 shows a comparison of the residential bi-monthly bill assuming a customer does, and does not, adjust their consumption in response to the requested savings in each drought stage.

Table 4 Single-Family Drought Rates Bill Impacts [1]					
	Normal Conditions	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
Water Conservation Plan Targeted Goals	**0%**	**20%**	**20%**	**35%**	**>35%**
Drought Rate Conservation Target	0.0%	5.0%	15.0%	27.5%	45.0%
Customer Using 20 CCF					
Assuming No Change in Use – 20 CCF	$65.62	$68.86	$77.00	$90.15	$116.84
Assuming Reduced Usage -					
Revised CCF Usage	20.0	19.0	17.0	15.0	11.0
Total Bi-Monthly Bill	$65.62	$66.30	$68.09	$72.02	$72.19
Customer Using 40 CCF					
Assuming No Change in Use – 40 CCF	$120.78	$127.26	$143.54	$169.85	$223.23
Assuming Reduced Usage -					
Revised CCF Usage	40.0	38.0	34.0	29.0	22.0
Total Bi-Monthly Bill	$120.78	$121.42	$123.58	$126.01	$127.48
Customer Using 60 CCF					
Assuming No Change in Use – 60 CCF	$180.43	$190.15	$214.57	$254.03	$334.10
Assuming Reduced Usage -					
Revised CCF Usage	60.0	57.0	51.0	44.0	33.0
Total Bi-Monthly Bill	$180.43	$180.71	$182.60	$186.68	$185.99

[1] Assumes a 5/8" single-family customer and bi-monthly billing period.

As can be seen in the above table, if a customer does not modify their consumption, their utility bill will increase substantially. However, if they do provide the requested savings, their bill will be similar to the "normal" water conditions bill. For example, a customer using 40 CCF currently pays $120.78/bi-monthly. If the City is in Stage 2 and the customer does not change their usage, then their bi-monthly bill will increase to $127.26. However, if they reduce their 40 CCF of usage by 6 CCF (15% reduction), their revised use of 34 CCF will be billed at $123.58/bi-monthly.

Development of the Multi-Family and Commercial Base Rates + Drought Rates

The same approach was developed for the multi-family and commercial customers. The estimated conservation savings were used to reduce the annual consumption and the drought rates were developed to maintain the current level of revenue plus the additional costs associated with each level of the drought that were over and above current budgeted expenses. Provided in Table 5 is a summary of the multi-family and commercial proposed rates including the drought rates.

Table 5 Proposed Multi-Family and Commercial Combined Base and Drought Rates – $/CCF					
	Normal Conditions [1]	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
All Consumption - CCF	$2.7693	$2.9078	$3.3093	$3.9324	$5.2838

[1] Normal water condition rates reflect the proposed rates effective October 1, 2015.

As can be seen, the current uniform consumption charge has been increased by the drought rate for each stage from Table 2.

Development of the Irrigation Base Rates +Drought Rates

Similar to the prior drought rates the proposed rates combined with the drought rates for the irrigation customer class was developed.

Table 6 Proposed Irrigation Combined Base Rates and Drought Rates – $/CCF					
	Normal Conditions [1]	Voluntary Stage 1	Mandatory Stage 2	Mandatory Stage 3	Mandatory Stage 4
	0%	20%	20%	35%	>35%
All Consumption - CCF	$2.9152	$3.0610	$3.4807	$4.1396	$5.5622

[1] Normal water condition rates reflect the proposed rates effective October 1, 2015.

As shown in Table 6, the irrigation rates reflect the proposed rates and the drought rates for each stage. It should be noted that irrigation use should be essentially zero in stages 3 and 4 based on the City's current water conservation plan which limits, or eliminates, outdoor watering.

Annual Adjustments to the Drought Rates

As noted, the purpose of the drought rates is to maintain sufficient revenues during times of declining consumption. Therefore, as potable water rates are adjusted for CPI each January 1st, or Zone 7 wholesale rates are increased, the drought rates will need to be adjusted to reflect the target revenue needs as the development of the drought rates are based on current potable water rates and revenue levels.

The adjustment of the drought rates to reflect the changes in CPI to the local potable water distribution rates, can be passed through based on the percentage basis to reflect the change in the overall revenues. For example, if the CPI adjustment is 2.5% then the drought rates, less the portion related to Zone 7, can be increased by 2.5%.

A similar approach can be used to update the drought rates based on the adoption of a new wholesale water rate by Zone 7. However, in this case if the Zone 7 rate is increased, it is recommended that the change in the percentage rate be added to the drought rates component related to Zone 7. For example, if the Zone 7 rate in increased from the current rate of $2.40 to $2.50, then the drought rates component related to Zone 7, can be increased by $4.2% ($2.50/2.40) in each stage and for each tier.

Updating the drought rates each time the potable water rates are updated will maintain the sufficient revenue levels necessary to fund the operating and capital needs of the potable water utility during times of drought and reduced consumption levels.

Summary

The development of drought rates is essential to maintaining the financial stability of the City's water utility. Combining the drought rates and excessive use penalties to inefficient water users, combined with the City's water conservation plan will provide the City with a method to manage the current, and future, drought impacts on revenue and utility operations.

Rate Schedule
Drought Rates - Uniform
All Classes

	Proposed	*Drought Rate*			
	10/1/2015	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
Single Family Residential					
0-20 CCF	$2.4000	$0.1619	$0.5689	$1.2266	$2.5611
21-40 CCF	2.7581	0.1619	0.5689	1.2266	2.5611
41-60 CCF	2.9825	0.1619	0.5689	1.2266	2.5611
60+ CCF	3.7520	0.1619	0.5689	1.2266	2.5611
Multi-Family Residential					
All Consumption	$2.7693	$0.1385	$0.5400	$1.1631	$2.5145
Commercial					
All Consumption	$2.7693	$0.1385	$0.5400	$1.1631	$2.5145
Irrigation					
All Consumption	$2.9152	$0.1458	$0.5655	$1.2244	$2.6470

Rate Schedule
Total Drought Rates - Uniform
All Classes

	Proposed	*Base Rate + Drought Rate*			
	10/1/2015	**Stage 1**	**Stage 2**	**Stage 3**	**Stage 4**
Single Family Residential					
0-20 CCF	$2.4000	$2.5619	$2.9689	$3.6266	$4.9611
21-40 CCF	2.7581	2.9200	3.3270	3.9847	5.3192
41-60 CCF	2.9825	3.1444	3.5514	4.2091	5.5436
60+ CCF	3.7520	3.9139	4.3209	4.9786	6.3131
Multi-Family Residential					
All Consumption	$2.7693	$2.9078	$3.3093	$3.9324	$5.2838
Commercial					
All Consumption	$2.7693	$2.9078	$3.3093	$3.9324	$5.2838
Irrigation					
All Consumption	$2.9152	$3.0610	$3.4807	$4.1396	$5.5622

	Total Bi-Monthly 5/8" Meter Bill (Uniform)				
	Normal Water Conditions	**Voluntary Conservation Stage 1**	**Mandatory Conservation Stage 2**	**Mandatory Conservation Stage 3**	**Mandatory Conservation Stage 4**
Target Reduction Goal	**0.0%**	**5.0%**	**15.0%**	**27.5%**	**45.0%**
Residential Customer Using 20 CCF					
Assuming No Change in Use - 20 CCF	$65.62	$68.86	$77.00	$90.15	$116.84
Assuming Reduced Usage -					
Revised CCF Usage	20.0	19.0	17.0	15.0	11.0
Total Bi-Monthly Bill	$65.62	$66.30	$68.09	$72.02	$72.19
Residential Customer Using 40 CCF					
Assuming No Change in Use - 40 CCF	$120.78	$127.26	$143.54	$169.85	$223.23
Assuming Reduced Usage -					
Revised CCF Usage	40.0	38.0	34.0	29.0	22.0
Total Bi-Monthly Bill	$120.78	$121.42	$123.58	$126.01	$127.48
Residential Customer Using 60 CCF					
Assuming No Change in Use - 60 CCF	$180.43	$190.15	$214.57	$254.03	$334.10
Assuming Reduced Usage -					
Revised CCF Usage	60.0	57.0	51.0	44.0	33.0
Total Bi-Monthly Bill	$180.43	$180.71	$182.60	$186.68	$185.99

City of Pleasanton

Water Utility Rate Study
Single Family Residential Drought Rates - Uniform

Stage 1 Drought Conditions

Step 1 - Determine Total Targeted Stage 1 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 1 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 1 - Target Conservation (Savings)	5.0%	145,595 CCF
- Savings Achieved From Voluntarily (Education, etc.)	5.0%	145,595 CCF
- Saving Achieved Via Price Elasticity (Rates)	0.0%	0 CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
0-20 CCF	1,806,495	5.0%	90,325	1,716,170	0.0%	0	1,716,170
21-40 CCF	551,589	5.0%	27,579	524,010	0.0%	0	524,010
41-60 CCF	211,216	5.0%	10,561	200,655	0.0%	0	200,655
60+ CCF	342,608	5.0%	17,130	325,478	0.0%	0	325,478
Total Consumption	2,911,908		145,595	2,766,313		0	2,766,313
Target Savings			145,595			0	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	Present Rates Rate $/CCF	Projected Commodity Revenue
0-20 CCF	1,716,170	$2.4000	$4,118,809
21-40 CCF	524,010	$2.7581	1,445,271
41-60 CCF	200,655	$2.9825	598,454
60+ CCF	325,478	$3.7520	1,221,192
Total	2,766,313		$7,383,725
Current Consumption Revenues			*$7,772,343*
Plus: Targeted Additional Stage 1 Costs (Residential Share)			*$59,133*
Target Revenues			$7,831,476
Deficiency			($447,750)
Drought Surcharge ($447,750 / 2,766,313)			*($0.1619)*

	Usage After Vol. & Rate Impact (CCF)	STAGE 1: Proposed Rate $/CCF [1]	STAGE 1: Proposed Commodity Revenue
0-20 CCF	1,716,170	$2.5619	$4,396,585
21-40 CCF	524,010	$2.9200	1,530,086
41-60 CCF	200,655	$3.1444	630,932
60+ CCF	325,478	$3.9139	1,273,873
Total	2,766,313		$7,831,476
Target - Total Revenue			$7,831,476
$ Difference			$0

[1] Proposed rates plus drought surcharge

Stage 2 Drought Conditions

Step 1 - Determine Total Targeted Stage 2 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 2 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 2 - Target Conservation (Savings)	15.0%	436,786 CCF
- Savings Achieved From Voluntarily (Education, etc.)	10.0%	291,191 CCF
- Saving Achieved Via Price Elasticity (Rates)	5.0%	145,595 CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
0-20 CCF	1,806,495	5.0%	90,325	1,716,170	4.0%	68,647	1,647,523
21-40 CCF	551,589	10.0%	55,159	496,430	6.0%	29,786	466,644
41-60 CCF	211,216	20.0%	42,243	168,973	10.0%	16,897	152,076
60+ CCF	342,608	30.0%	102,782	239,826	12.5%	29,978	209,847
Total Consumption	2,911,908		290,509	2,621,399		145,308	2,476,091
Target Savings			291,191			145,595	
Difference (CCF)			(682)			(287)	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	Present Rates Rate $/CCF	Projected Commodity Revenue
0-20 CCF	1,647,523	$2.4000	$3,954,056
21-40 CCF	466,644	$2.7581	1,287,052
41-60 CCF	152,076	$2.9825	453,565
60+ CCF	209,847	$3.7520	787,347
Total	2,476,091		$6,482,021
Current Consumption Revenues			*$7,772,343*
Plus: Targeted Additional Stage 1 Costs (Residential Share)			*$118,266*
Target Revenues			$7,890,609
Deficiency			($1,408,588)
Drought Surcharge ($1,408,588 / 2,476,091)			*($0.5689)*

	Usage After Vol. & Rate Impact (CCF)	STAGE 2: Proposed Rate $/CCF [1]	STAGE 2: Proposed Commodity Revenue
0-20 CCF	1,647,523	$2.9689	$4,891,293
21-40 CCF	466,644	3.3270	1,552,514
41-60 CCF	152,076	3.5514	540,077
60+ CCF	209,847	4.3209	906,725
Total	2,476,091		$7,890,609
Target - Total Revenue			$7,890,609
$ Difference			$0

[1] Proposed rates plus drought surcharge

Stage 3 Drought Conditions

Step 1 - Determine Total Targeted Stage 3 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 3 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 3 - Target Conservation (Savings)	27.5%	800,775 CCF
- Savings Achieved From Voluntarily (Education, etc.)	15.5%	451,346 CCF
- Saving Achieved Via Price Elasticity (Rates)	12.0%	349,429 CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
0-20 CCF	1,806,495	9.4%	169,811	1,636,684	7.5%	122,751	1,513,933
21-40 CCF	551,589	20.0%	110,318	441,271	16.1%	71,045	370,227
41-60 CCF	211,216	25.0%	52,804	158,412	35.0%	55,444	102,968
60+ CCF	342,608	35.0%	119,913	222,695	45.0%	100,213	122,482
Total Consumption	2,911,908		452,845	2,459,063		349,453	2,109,610
							72.4%
Target Savings			451,346			349,429	
Difference (CCF)			1,499			24	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	Present Rates Rate $/CCF	Projected Commodity Revenue
0-20 CCF	1,513,933	$2.4000	$3,633,440
21-40 CCF	370,227	$2.7581	1,021,122
41-60 CCF	102,968	$2.9825	307,101
60+ CCF	122,482	$3.7520	459,554
Total	2,109,610		$5,421,217
Current Consumption Revenues			*$7,772,343*
Plus: Targeted Additional Stage 1 Costs (Residential Share)			*$236,533*
Target Revenues			$8,008,875
Deficiency			($2,587,659)
Drought Surcharge ($2,587,659 / 2,109,610)			*($1.2266)*

	Usage After Vol. & Rate Impact (CCF)	STAGE 3: Proposed Rate $/CCF [1]	STAGE 3: Proposed Commodity Revenue
0-20 CCF	1,513,933	$3.6266	$5,490,438
21-40 CCF	370,227	3.9847	1,475,244
41-60 CCF	102,968	4.2091	433,402
60+ CCF	122,482	4.9786	609,791
Total	2,109,610		$8,008,875
Target - Total Revenue			$8,008,875
$ Difference			$0

[1] Proposed rates plus drought surcharge

Stage 4 Drought Conditions

Step 1 - Determine Total Targeted Stage 4 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 4 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 4 - Target Conservation (Savings)	45.0%	1,310,359 CCF
- Savings Achieved From Voluntarily (Education, etc.)	25.0%	727,977 CCF
- Saving Achieved Via Price Elasticity (Rates)	20.0%	582,382 CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
0-20 CCF	1,806,495	15.0%	270,974	1,535,521	18.0%	276,394	1,259,127
21-40 CCF	551,589	30.0%	165,477	386,112	40.0%	154,445	231,667
41-60 CCF	211,216	41.0%	86,599	124,617	50.0%	62,309	62,309
60+ CCF	342,608	60.0%	205,565	137,043	65.0%	89,078	47,965
Total Consumption	2,911,908		728,614	2,183,294		582,225	1,601,068
Target Savings			727,977			582,382	
Difference (CCF)			637			(156)	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	Present Rates Rate $/CCF	Projected Commodity Revenue
0-20 CCF	1,259,127	$2.4000	$3,021,905
21-40 CCF	231,667	$2.7581	638,962
41-60 CCF	62,309	$2.9825	185,836
60+ CCF	47,965	$3.7520	179,965
Total	1,601,068		$4,026,668
Current Consumption Revenues			*$7,772,343*
Plus: Targeted Additional Stage 1 Costs (Residential Share)			*$354,799*
Target Revenues			$8,127,141
Deficiency			($4,100,474)
Drought Surcharge ($4,100,474 / 1,601,068)			*($2.5611)*

	Usage After Vol. & Rate Impact (CCF)	STAGE 4: Proposed Rate $/CCF [1]	STAGE 4: Proposed Commodity Revenue
0-20 CCF	1,259,127	$4.9611	$6,246,638
21-40 CCF	231,667	5.3192	1,232,282
41-60 CCF	62,309	5.5436	345,414
60+ CCF	47,965	6.3131	302,808
Total	1,601,068		$8,127,141
Target - Total Revenue			$8,127,141
$ Difference			$0

[1] Proposed rates plus drought surcharge

Stage 1 Drought Conditions

Step 1 - Determine Total Targeted Stage 1 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 1 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 1 - Target Conservation (Savings)	5.0%	21,914	CCF
- Savings Achieved From Voluntarily (Education, etc.)	5.0%	21,914	CCF
- Saving Achieved Via Price Elasticity (Rates)	0.0%	-	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	438,288	5.0%	21,914	416,374	0.0%	0	416,374
Total Consumption	438,288		21,914	416,374		0	416,374
Target Savings			21,914			-	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 1		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	416,374	5.0%	$2.9078	$1,210,731
Total	416,374			$1,210,731
Plus: Targeted Additional Stage 1 Costs Multi-Family Share)				*$8,900*
Target - Total Revenue				$1,222,651
$ Difference				($11,920)

Stage 2 Drought Conditions

Step 1 - Determine Total Targeted Stage 2 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 2 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 2 - Target Conservation (Savings)	15.0%	65,743 CCF
- Savings Achieved From Voluntarily (Education, etc.)	10.0%	43,829 CCF
- Saving Achieved Via Price Elasticity (Rates)	5.0%	21,914 CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
All Consumption	438,288	10.0%	43,829	394,459	5.0%	21,914	372,545
Total Consumption	438,288		43,829	394,459		21,914	372,545
Target Savings			43,829			21,914	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 2: % Adjst. to Rates	STAGE 2: Rate $/CCF	STAGE 2: Commodity Revenue
All Consumption	372,545	19.5%	$3.3093	$1,232,863
Total	372,545			$1,232,863
Plus: Targeted Additional Stage 2 Costs (Multi-Family Share)				*$17,801*
Target - Total Revenue				$1,231,552
$ Difference				$1,311

Stage 3 Drought Conditions

Step 1 - Determine Total Targeted Stage 3 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 3 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 3 - Target Conservation (Savings)	27.5%	120,529	CCF
- Savings Achieved From Voluntarily (Education, etc.)	15.5%	67,935	CCF
- Saving Achieved Via Price Elasticity (Rates)	12.0%	52,595	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
All Consumption	438,288	15.5%	67,935	370,353	12.0%	52,595	317,759
Total Consumption	438,288		67,935	370,353		52,595	317,759
Target Savings			67,935			52,595	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 3: % Adjst. to Rates	STAGE 3: Rate $/CCF	STAGE 3: Commodity Revenue
All Consumption	317,759	42.0%	$3.9324	$1,249,555
Total	317,759			$1,249,555
Plus: Targeted Additional Stage 3 Costs (Multi-Family Share)				*$35,602*
Target - Total Revenue				$1,249,353
$ Difference				$202

Stage 4 Drought Conditions

Step 1 - Determine Total Targeted Stage 4 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 4 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 4 - Target Conservation (Savings)	45.0%	197,230	CCF
- Savings Achieved From Voluntarily (Education, etc.)	25.0%	109,572	CCF
- Saving Achieved Via Price Elasticity (Rates)	20.0%	87,658	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	438,288	25.0%	109,572	328,716	20.0%	87,658	241,058
Total Consumption	438,288		109,572	328,716		87,658	241,058
Target Savings			109,572			87,658	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 4		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	241,058	90.8%	$5.2838	$1,273,704
Total	241,058			$1,273,704
Plus: Targeted Additional Stage 4 Costs (Multi-Family Share)				*$53,403*
Target - Total Revenue				$1,267,154
$ Difference				$6,551

Stage 1 Drought Conditions

Step 1 - Determine Total Targeted Stage 1 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 1 - REQUIRED TOTAL SAVINGS	
	Estimated % Savings	Est. Savings in Total CCF
Stage 1 - Target Conservation (Savings)	5.0%	34,393 CCF
- Savings Achieved From Voluntarily (Education, etc.)	5.0%	34,393 CCF
- Saving Achieved Via Price Elasticity (Rates)	0.0%	- CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	687,852	5.0%	34,393	653,459	0.0%	0	653,459
Total Consumption	687,852		34,393	653,459		0	653,459
Target Savings			34,393			-	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 1		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	653,459	5.0%	$2.9078	$1,900,129
Total	653,459			$1,900,129
Plus: Targeted Additional Stage 1 Costs (Commercial Share)				*$13,968*
Target - Total Revenue				$1,918,837
$ Difference				($18,708)

Stage 2 Drought Conditions

Step 1 - Determine Total Targeted Stage 2 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 2 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 2 - Target Conservation (Savings)	15.0%	103,178	CCF
- Savings Achieved From Voluntarily (Education, etc.)	10.0%	68,785	CCF
- Saving Achieved Via Price Elasticity (Rates)	5.0%	34,393	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	687,852	10.0%	68,785	619,067	5.0%	34,393	584,674
Total Consumption	687,852		68,785	619,067		34,393	584,674
Target Savings			68,785			34,393	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 2		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	584,674	19.5%	$3.3093	$1,934,862
Total	584,674			$1,934,862
Plus: Targeted Additional Stage 2 Costs (Commercial Share)				*$27,937*
Target - Total Revenue				$1,932,805
$ Difference				$2,057

Stage 3 Drought Conditions

Step 1 - Determine Total Targeted Stage 3 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 3 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 3 - Target Conservation (Savings)	27.5%	189,159	CCF
- Savings Achieved From Voluntarily (Education, etc.)	15.5%	106,617	CCF
- Saving Achieved Via Price Elasticity (Rates)	12.0%	82,542	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
All Consumption	687,852	15.5%	106,617	581,235	12.0%	82,542	498,693
Total Consumption	687,852		106,617	581,235		82,542	498,693
Target Savings			106,617			82,542	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 3: % Adjst. to Rates	STAGE 3: Rate $/CCF	STAGE 3: Commodity Revenue
All Consumption	498,693	42.0%	$3.9324	$1,961,059
Total	498,693			$1,961,059
Plus: Targeted Additional Stage 3 Costs (Commercial Share)				*$55,874*
Target - Total Revenue				$1,960,742
$ Difference				$317

Stage 4 Drought Conditions

Step 1 - Determine Total Targeted Stage 4 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 4 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 4 - Target Conservation (Savings)	45.0%	309,533	CCF
- Savings Achieved From Voluntarily (Education, etc.)	25.0%	171,963	CCF
- Saving Achieved Via Price Elasticity (Rates)	20.0%	137,570	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	687,852	25.0%	171,963	515,889	20.0%	137,570	378,319
Total Consumption	687,852		171,963	515,889		137,570	378,319
Target Savings			171,963			137,570	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 4		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	378,319	90.8%	$5.2838	$1,998,960
Total	378,319			$1,998,960
Plus: Targeted Additional Stage 4 Costs (Commercial Share)				*$83,811*
Target - Total Revenue				$1,988,679
$ Difference				$10,281

Stage 1 Drought Conditions

Step 1 - Determine Total Targeted Stage 1 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 1 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 1 - Target Conservation (Savings)	5.0%	62,780	CCF
- Savings Achieved From Voluntarily (Education, etc.)	5.0%	62,780	CCF
- Saving Achieved Via Price Elasticity (Rates)	0.0%	-	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	1,255,601	5.0%	62,780	1,192,821	0.0%	0	1,192,821
Total Consumption	1,255,601		62,780	1,192,821		0	1,192,821
Target Savings			62,780			-	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 1		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	1,192,821	5.0%	$3.0610	$3,651,225
Total	1,192,821			$3,651,225
Plus: Targeted Additional Stage 1 Costs (Irrigation Share)				*$25,498*
Target - Total Revenue				$3,685,826
$ Difference				($34,601)

Stage 2 Drought Conditions

Step 1 - Determine Total Targeted Stage 2 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 2 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 2 - Target Conservation (Savings)	15.0%	188,340	CCF
- Savings Achieved From Voluntarily (Education, etc.)	10.0%	125,560	CCF
- Saving Achieved Via Price Elasticity (Rates)	5.0%	62,780	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
All Consumption	1,255,601	10.0%	125,560	1,130,041	5.0%	62,780	1,067,261
Total Consumption	1,255,601		125,560	1,130,041		62,780	1,067,261
Target Savings			125,560			62,780	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 2: % Adjst. to Rates	STAGE 2: Rate $/CCF	STAGE 2: Commodity Revenue
All Consumption	1,067,261	19.4%	$3.4807	$3,714,815
Total	1,067,261			$3,714,815
Plus: Targeted Additional Stage 2 Costs (Irrigation Share)				*$50,996*
Target - Total Revenue				$3,711,324
$ Difference				$3,491

Stage 3 Drought Conditions

Step 1 - Determine Total Targeted Stage 3 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 3 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 3 - Target Conservation (Savings)	27.5%	345,290	CCF
- Savings Achieved From Voluntarily (Education, etc.)	15.5%	194,618	CCF
- Saving Achieved Via Price Elasticity (Rates)	12.0%	150,672	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts: Estimated % Savings by Block	Voluntary Savings Impacts: Estimated Savings (CCF)	Voluntary Savings Impacts: After Vol. Savings (CCF)	Price Elasticity Savings Impact: Targeted Savings By Block	Price Elasticity Savings Impact: Elasticity Savings (CCF)	Price Elasticity Savings Impact: After Vol. & Rate Impact (CCF)
All Consumption	1,255,601	15.5%	194,618	1,060,983	12.0%	150,672	910,311
Total Consumption	1,255,601		194,618	1,060,983		150,672	910,311
Target Savings			194,618			150,672	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 3: % Adjst. to Rates	STAGE 3: Rate $/CCF	STAGE 3: Commodity Revenue
All Consumption	910,311	42.0%	$4.1396	$3,768,322
Total	910,311			$3,768,322
Plus: Targeted Additional Stage 3 Costs (Irrigation Share)				*$101,992*
Target - Total Revenue				$3,762,320
$ Difference				$6,003

Stage 4 Drought Conditions

Step 1 - Determine Total Targeted Stage 4 Savings and Savings Achieved from Voluntary and Price Elasticity Impacts

	STAGE 4 - REQUIRED TOTAL SAVINGS		
	Estimated % Savings	Est. Savings in Total CCF	
Stage 4 - Target Conservation (Savings)	90.0%	1,130,041	CCF
- Savings Achieved From Voluntarily (Education, etc.)	45.0%	565,020	CCF
- Saving Achieved Via Price Elasticity (Rates)	45.0%	565,020	CCF

Step 2 - Estimate the Voluntary and Price Elasticity Impacts (Savings) By Price Block

	Normal Water Conditions (CCF)	Voluntary Savings Impacts			Price Elasticity Savings Impact		
		Estimated % Savings by Block	Estimated Savings (CCF)	After Vol. Savings (CCF)	Targeted Savings By Block	Elasticity Savings (CCF)	After Vol. & Rate Impact (CCF)
All Consumption	1,255,601	45.0%	565,020	690,581	45.0%	565,020	125,560
Total Consumption	1,255,601		565,020	690,581		565,020	125,560
Target Savings			565,020			565,020	
Difference (CCF)			0			0	

Step 3 - Determine the Price (Rate) By Block Needed to Achieve Needed Savings and Meet Revenue Requirement

	Usage After Vol. & Rate Impact (CCF)	STAGE 4		
		% Adjst. to Rates	Rate $/CCF	Commodity Revenue
All Consumption	125,560	90.8%	$5.5622	$698,390
Total	125,560			$698,390
Plus: Targeted Additional Stage 4 Costs (Irrigation Share)				*$152,988*
Target - Total Revenue				$3,813,316
$ Difference				($3,114,925)