MOTION

Moved by Council Member _____, seconded by Council Member _____, that, having considered the information presented by Glendale Water and Power Department at the November 29, 2011 City Council Study Session concerning proposed water rate redesign and rate increase, and based on such information, as well as the recommendation of the Glendale Water and Power Commission rendered on October 3, 2011, the City Council hereby authorizes the Glendale Water and Power Department to proceed with the issuance of the Notice Of Proposed Rate Redesign And Increase In Water Rates And Charges (Prop 218 Notice) in accordance with the applicable statutory provisions governing same.

The Prop 218 Notice shall provide notice of the City's proposed rate redesign with an increase of:

[Four annual rate increases of 3% per year]

or

[Annual rate increases of 2% in year one, 2% in year two, 4% in year three, and 5% in year four].

Vote as follows:

Ayes:

Noes:

Absent:

Abstain:

J:\FileNetCopy\Dorine\Ordinances\WaterRateRedesign2011\CouncilMotionAuthorizingIssuanceOfProp218Notice

APPROVED AS TO FORM

Assistant City Attorney

DATE 11/23/11

1 A /

City of Glendale, California

FINAL REPORT | NOVEMBER 29, 2011

Glendale Water & Power
Water Rate Redesign

WILLDAN Financial Services | extending your reach

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Phoenix, Arizona

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Executive Summary

In 2009, due to the higher cost of purchased water and imposed water allocations by Metropolitan Water District (MWD), Glendale was faced with the challenge of asking customers to lower their use, while GWP continued to manage costs, address infrastructure needs, and maintain financial stability. Although Glendale is no longer under mandatory water conservation, it's not expected nor recommended for customers to use water inefficiently. While California is still faced with inadequate regional water supplies and GWP continues to purchase a portion of its overall water needs from MWD, a new rate design has been developed to reflect the utility's current and projected water consumption and how costs are incurred. In Fiscal Year 2009-2010, Glendale Water and Power (GWP) incurred an operating loss in its water system and it expected the same in Fiscal Year 2010-2011. Despite rate increases in recent years, the water utility has continued depleting cash reserves to fund increases in operating costs, as well as necessary capital improvements, which were initially planned to be funded through a bond issue in 2010 that was deferred indefinitely. Over the last 10 years, Glendale's water rates have increased by an annual average of 5.9%. The table above provides a comparison of Glendale's average water rate increases over this period to other neighboring agencies. Despite these increases, GWP reserve balances and cash have continued to be drawn down. Over the same duration, Crescenta Valley Water District (CVWD) and Pasadena had substantially higher rate increases.

Water Provider	Average Increase
Burbank	5.5%
CVWD	10.8%
Pasadena	12.3%
Glendale	5.9%

In the last two years, the cash reserves of the water utility have been completely depleted and are now negative due to delayed debt financing and in an effort to help supplement the funds needed to pay for costs and expenses necessary to operate the water utility. As of September 30, 2011, the water utility's cash balance was negative $13.5 million. The goal of the water utility is to maintain between 72 and 90 days of operating cash reserves, or a balance of approximately $6.5 to $8.3 million.

Figure I-1 provides the annual revenue adjustments that would be necessary under three different scenarios, the GWP staff recommendation (Recommended), the step up option as discussed at a September 19, 2011 meeting of the Glendale Water and Power Commission (Step Up), and if nothing is done to increase water rates for the next two years (No Change). Rate increases are inevitable and if they are delayed, would need to be substantially higher in order to achieve required debt coverage levels and accumulation of adequate cash reserves.

Figure I-1: Alternative Revenue Adjustments

Fiscal Year	Recommended	Step Up Adjustments	No Change
2011-2012	3%	2%	0%
2012-2013	3%	2%	0%
2013-2014	3%	4%	7%
2014-2015	3%	5%	5%

The impact on the financial condition of the water utility varies greatly between these scenarios. Figure I-2 summarizes the likely outcomes with regard to the ability to meet key financial and operating objectives, while keeping the overall cost to customers as low as possible. Discussion of each of these objectives follows Figure I-2.

Figure I-2: Summary of Likely Outcomes

Objectives	Recommended 3%, 3%, 3%, 3%	Step Up 2%, 2%, 4%, 5%	No Change 0%, 0%, 7%, 5%
Restore Cash Reserve Balances	Yes	No	No
Retain Bond Rating	Likely	Possibly	No
Ability to Issue Debt	Yes	Possible, but with higher interest cost	No
PAYGO Funding	Yes	Limited	No
Avoid CIP Delays or Reductions	Minimal	Some project delays	Severe reductions
Avoid O&M Reductions	Minimal	No	Severe
Short-Term Rate Impact	Minimal	Minimal	None
Long-Term Rate Impacts	Minimal	Incrementally higher	Substantially higher

Restore Reserve Balances – Both the Recommended and Step Up revenue adjustment scenarios would restore cash reserve balances within the next five years; however, the cash on hand under the Recommended scenario is slightly higher. Cash reserves in the No Change scenario do not get to desired levels until 2017-2018, with sizable rate increases commencing in FY 2013-2014.

Retain Bond Rating – The GWP bond rating is currently at risk. The rating agencies recently lowered GWP ratings and expressed concern over reduced reserves and negative cash balances. They recognized the need for revenue increases and indicated that they would continue to assign a negative outlook until the water utility's financials are resolved.

Often when a rating is lowered the rating agencies assign a stable outlook. In GWP's case, there is enough continuing concern to prompt the agencies to maintain their negative outlook, even in light of their reduced rating. It is possible, but not likely, that GWP's rating could be lowered again, even with the Recommended or Step Up approach, and it will certainly be lowered if rates are not increased in a reasonable timeframe.

Ability to Issue Debt – GWP will likely be able to issue additional debt under the Recommended and Step Up scenarios; however, interest rates would likely be higher under the Step Up scenario as the debt service coverage ratio would be lower. GWP would not be able to issue debt under the no rate increase scenario until revenue eventually increased. If the water utility goes out of compliance with existing bond covenants, further debt issues are unlikely until the situation is remedied. Even then, interest rates would likely be substantially higher due to the high level of financial risk involved with repayment.

PAYGO Funding – Both the Recommended and Step Up options fully support PAYGO; however, the Recommended approach provides a quicker build up of reserves allowing for greater flexibility. Without the increased flexibility, GWP may need to defer certain capital improvement projects. Due to the existing negative cash balance, no increases would result in severely limited PAYGO funding for capital

replacement and maintenance – effectively, this option would result in virtually all projects being delayed, except for regulatory compliance projects.

Avoid CIP Delays or Reductions – GWP's capital improvement program can be funded under the Recommended scenario without further cuts or delays. Under the Step Up approach some project delays are expected early on. The No Change option would severely impact capital programs, particularly if bond funding is no longer an option. Under the No Change option, the only projects that would be completed are ones that are needed for public health and safety and ones that have already commenced. All other improvement projects would be placed on hold. In the long-run, most of the capital projects are needed for system supply and reliability. Beginning in Fiscal Year 2013-2014, rate increases of 7%, 5%, and 5% would be needed at a minimum for the utility to be revenue sufficient.

Avoid O&M Reductions – Any reduction in needed capital replacement will most likely result in higher O&M costs due to additional maintenance costs on older and less efficient equipment. In addition, potential system failures could increase, causing higher O&M costs by addressing capital needs reactively rather than proactively. Therefore, a reduction in capital spending does not directly correlate to a "dollar-for-dollar" reduction in cost. If cash reserves continue to be negative, and if planned capital projects are significantly delayed, or worse yet cannot be funded, current staffing levels may still be required to address more costly O&M. This situation is not likely in the Recommended or Step Up scenarios as CIP is funded, but is virtually certain under the no rate increase approach.

Appendix A contains a list of CIP projects and the impacts should delays occur.

Short-Term Rate Impact – Due to current economic climate, pushing rate increases out into the future would appear to be appealing on the surface, but given the water system's immediate operating and capital needs, it will only compound the deficiencies that exist today. Consequently, the longer that increases are delayed, the larger they would have to be in the future in order to make up the difference. The analysis shows that the average residential water ratepayer who consumes 19 HCF per month would pay more over the next four years on a monthly basis under the Step Up than under the Recommended. Figure I-3 provides the impact analysis of the two scenarios on residential customer bills.

Figure I-3: Monthly Residential Bills (19 HCF/Month)

Scenario	Monthly Increase	Ending Cash on Hand (2016)
Recommended	$1.68	$11.6 M
Step Up Adjustments	$1.84	$11.3 M

Long-Term Rate Impact – As described in the previous section, the long-term impact on customer rates would be incrementally worse if revenue adjustments are delayed. This is a function of the existing negative cash balance and the deferral of necessary system improvements. The utility is limited in revenue and, eventually, the funding problem will need to be addressed or the repercussions in terms of water quality and service reliability could be problematic.

Staff Recommendation – For the reasons described above, staff recommends 3% revenue increases for each of the next four years. This option provides a healthy outlook for the utility by:

- Restoring cash reserve balances by year five
- Offering the ability to borrow for capital needs
- Providing the best likelihood of retaining existing bond ratings
- Provides PAYGO funding going forward

Introduction

Since 1909, Glendale Water & Power (GWP) has grown to over 32,400 water and 88,000 electric customers becoming the third most populous city in Los Angeles County. To provide water service to a growing service population, the City relies on local ground water pumped from private wells and purchased water from Metropolitan Water District (MWD).

As part of the Utility's financial policy, every few years a financial and rate review is completed. In February of 2011, Willdan Financial Services was selected to perform a rate redesign analysis. This analysis focuses on two key objectives (1) Financial Health and Stability and (2) Cost of Service rates that promote efficient use of water.

Upon our initial review, the Utility's existing rate structure does not currently reflect the true cost of providing additional units of water to different distinct customer classes, and fails to generate sufficient revenue to fund expenditures (operations, maintenance, and capital) and reserves. As such, the Utility's starting cash balance (cash on hand) as of June 2011 was negative $11.5 million and increased to negative $13.5 million as of September 30, 2011.

This report details the methodology, approach, and results of this analysis. Based on discussion with GWP staff and guidance from the Glendale Water & Power Commission and City Council, this report presents multiple financial scenarios and the corresponding rate impacts.

Overview of the Rate Setting Process

The scope of this study included the development of cost-based water user charges through a comprehensive cost of service and rate design analysis. Utility 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 a significant point, as failure to achieve this level could lead to insufficient funds being available to adequately maintain the system. A comprehensive rate study typically consists of following three interrelated analyses.

I. ***Financial Planning/Revenue Requirement Analysis***: Create a ten-year plan to support an orderly, efficient program of on-going maintenance and operating costs, capital improvement and replacement activities, debt financing, and retirement of any outstanding debt. In addition, the long-term plan should fund and maintain reserve balances to adequate levels based on industry standards and GWP fiscal policies.

II. ***Cost of Service Analysis***: Identifies and apportions annual revenue requirements to distinct customer classes based on their demand on the utility system.

III. ***Rate Design:*** Develops an equitable and proportionate fixed/variable schedule of rates for each customer class to recover the costs attributable to that specific customer class. This is also where other policy objectives can be achieved, such as discouraging wasteful water use. The policy objectives are harmonized with cost of service objectives to achieve the delicate balance between customer equity, financial stability and resource conservation goals.

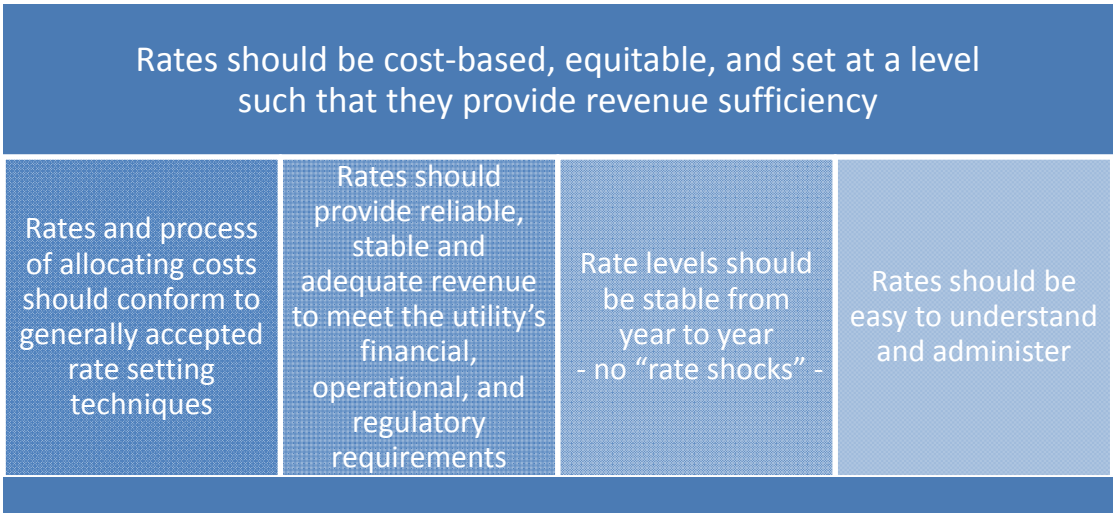
Rate Setting Principles

The primary objective when conducting a comprehensive rate study is to determine the adequacy of the existing rates (pricing and structure), and provide the basis for any necessary adjustments to meet the Utility's operating and capital needs as well as policy objectives, such as promoting the efficient use of water, and compliance with the governing provisions of the State Constitution and Water Code. GWP desires a rate structure that fully funds operations, maintenance, and capital costs. Furthermore, GWP would like to redesign its existing rate structure to one that reflects the difference in costs between groundwater and more expensive purchased water; thereby, promoting the objective of using water efficiently.

Financial Management, Policies, and Rates

A financial plan revolves around the development of a proper long and short-term balance of revenues and expenditures. The following provides an outline of Glendale Water & Power's financial targets and policies, and the financial foundation of the cost of service and rate analysis. Over the past years, many generally accepted principles or guidelines have been established to assist in developing utility rates. The purpose of this section of the report is to provide a general background of the methodology and guidelines used for setting cost based utility rates, in order to provide a higher-level understanding of the rate setting approach detailed later in this report.

As a practical matter, there should be a general set of principles used to guide the development of water rates. The American Water Works Association (AWWA) establishes these principles in the M1 Manual – *Principles of Water Rates, Fees and Charges.* These guiding principles help to ensure there is a consistent global approach that is employed by all utilities in the development of their rates (water and water-related utilities, including sewer and reclaimed water). Below is a summary listing the established guidelines, which public utilities should consider when setting their rates. These closely reflect the City's specified objectives.



These guidelines, along with the City's objectives, have been utilized within this study as a framework to help develop utility rates that are cost-based and equitable.

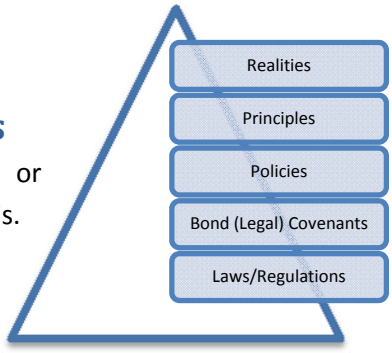
Overview of Rate Setting Environment, Objectives, Process

Rate analyses are typically performed every few years to ensure that revenues from rates are adequately funding utility operations, maintenance, and future capital needs. In California, rate analyses also require compliance with the cost-of-service principles imposed by Proposition 218 to ensure that rates correlate to how costs are incurred. Furthermore, the City of Glendale is a signatory to the California Urban Water Conservation Council (CUWCC) memorandum of understanding, agreeing to implement best management practices (BMPs) related to water conservation. The most significant BMP is the targeted ratio between fixed and variable revenue, 30/70 respectively. This targeted ratio is thought to best provide customers with incentive to use water efficiently, as 70% of their bill is related to consumption, while providing a moderate percentage of constant revenue to the utility to cover a portion of total costs that do not typically fluctuate with the amount of water consumed. Beyond the laws, regulations, and guiding principles, the rates ultimately need to be approved by the City Council.

GWP last performed a rate study in 2007 just before the recent economic downturn began. In addition to the current economic realities, the utility has incurred additional capital costs related to Smart Grid implementation. Compounding the issue, water rate revenue has decreased as customers reduced consumption following the implementation of mandatory conservation measures, recent cooler weather, and/or an attempt to lower monthly bills for economic reasons. To ensure realistic consumption levels are properly forecasted, the Water Rate Redesign analysis utilized existing and historical consumption data to best predict future behavior. Furthermore due to the recent lifting of Phase II mandatory conservation, this report assumes a slight increase in consumption. Although increased consumption is assumed initially, the model also factors in price elasticity to reflect the apparent decrease in demand as rates increase. While strenuous efforts were made to account for future anomalies, the rates and financial projections should be checked regularly to adjust for future unknowns.

Considerations in Setting Revenue Requirements

There are multitudes of considerations that must be analyzed or discussed during the revenue requirements process of a rate analysis. This section, along with the graphic beside, provides an overview of the considerations that are reviewed during this process.



Capital Budgeting and Financing

Capital needs are defined by GWP's Capital Improvement Plan. As part of its budget and planning process, GWP identifies capital improvements that are necessary for the continued delivery of clean, safe, drinking water. The Capital Improvement Plan is funded by a variety of sources including depreciation, water rates, impact fees, and capital reserves. Recent economic realities have reduced funding and/or delayed funding of critical system improvements.

Capital Funding: Debt vs. PAYGO

The selection of the most appropriate funding strategy for capital projects is primarily a policy decision between use of cash ("Pay-as-you-go financing" or PAYGO), the issuance of debt (bonding), or a combination. PAYGO is the use or build up of cash to fund capital improvements. With debt financing, capital improvements are funded with borrowed funds (usually through the issuance of bonds) with the obligation of repayment, typically with interest, in future years. Development of an optimal capital financial plan depends on the definition of optimal. Each has a different impact on water rates in the short and long run, different net present values, risks, and legal obligations. Because of the borrowing costs associated with debt, cash funding can be cheaper in the end; however, debt typically ensures greater generational equity for larger and longer lasting capital projects.

Our review of the Department's historical and planned Capital Improvement Plan revealed the department does not have sufficient funding on hand to meet its planned capital investments. Because of the 2010 deferral of issuing debt back, GWP plans to issue $60 million in new debt in 2012.

Our recommendation is consistent with the observed funding policy of GWP, an is that the department continue to balance the use all financing options, by using debt in the near-term to mitigate the impact on rates, and cash funding in the long-term for annual replacement projects.

Revenue Requirements

The method used by most public utilities to establish their revenue requirements is called the "cash basis" approach of setting rates. As the name implies, a public utility combines its cash expenditures over a time period to determine their required revenues from rates and other forms of income. The figure below presents the "cash basis" methodology.

Figure 1-1: Overview of the "Cash Basis" Design

_____

+ Operation and Maintenance Expenses
+ Taxes
+ Capital Additions Financed with Rate Revenue
+ Debt Service (Principal and Interest)
= Total Revenue Requirements

_____

To ensure that existing ratepayers are not paying for growth-related capital projects, Willdan reviewed existing, approved/pending, and proposed Capital Improvement Projects (CIPs) with City staff in order to allocate projects between new (growth) and existing customers (operations and maintenance or "O&M"). Additionally, capital replacement expense is sometimes included in the cash basis approach to stabilize annual required revenue requirements by spreading the replacement costs of a depreciated asset over the expected life of the asset or through the term of a bond issue.

Based on the revenue requirement analysis, the utility can determine the overall level of rate adjustments needed in order for the utility to meet its overall expenditures.

Financial Planning

In the development of the revenue requirements, certain parameters are utilized to project future expenditures, growth in customers and consumption, and necessary revenue adjustments. GWP's budget documents are used as the baseline, which are then projected over a ten-year planning horizon to account for fluctuations in costs from year to year as well as adjustments to debt service payments.

Conservative growth assumptions and prudent financial planning are fundamental in ensuring adequate rate revenue to promote financial stability. The developed financial model considers the City's existing debt service coverage ratio and operating cash balances (cash on hand). In addition, as part of the financial planning, municipal bond financing is incorporated into the model to fund necessary capital improvements, including repair and replacement. The cost of depreciated infrastructure is collected and used to fund annual repair and replacement. As debt is redeemed, additional bonds may be utilized to fund additional capital improvements required due to aging infrastructure.

Rate Setting Principles Summary

In meeting the overall objectives of GWP, the rate design must also conform to the State Constitution and the State's Water Code. More specifically, Proposition 218 requires that property related fees and charges, such as water rates (as affirmed in Bighorn-Desert View Water Agency v. Verjil), must not exceed the reasonable cost of providing the service associated with the fee or charge, and shall also not exceed the proportional cost of the service attributable to the parcel that is subject to the fee or charge.

In conjunction with Proposition 218, Article X (2) of the State Constitution institutes the need to preserve the State's water supplies and discourage the wasteful or unreasonable use of water by encouraging conservation. Article X (2) is broad in its declarations; however, the Water Code provides guidance to its application for developing water rates. Section 106 declares that the highest use of water is for domestic purposes, and irrigation is secondary. In connection with meeting the objectives of Article X, Water Code Sections 370 (AB2882) and 375 authorize a water purveyor to utilize its water rate design to incentivize the efficient use of water.

Although incentives to conserve water could be provided by implementing a higher rate for water as consumption increases, a nexus between rates and cost incurred to provide water at those rates must be developed to achieve compliance with Proposition 218. Therefore, in our analysis, when employing a tiered rate structure, we analyzed the consumption and peaking characteristics of each defined Tier to determine the proportional share of cost incurred by each tier, which is then divided by consumption to derive a rate per unit of water for each tier. Doing so synchronizes the objectives of Article X (2) and Article XIIID (6) in developing a cost of service tiered rate structure.

Besides ensuring compliance with State law, another key principle for a comprehensive rate study is found in economic theory, which suggests the price of a commodity must roughly equal its cost or value if equity among customers is to be maintained – i.e. cost-based. For example, capacity-related costs are usually incurred by a water utility to meet peak use requirements. Consequently, the customers causing peak demands should pay for the demand-related facilities in proportion to their contribution to maximum demands.

Through refinement of costing and pricing techniques, consumers of a product are given a more accurate price point of what the commodity costs to produce and deliver their water needs. The above fundamentals have considerable foundation in economic literature and correlate to the cost of service principles of Proposition 218. This "price-equals-cost" theory provides the basis for much of the subsequent analysis and comment. This theory is particularly important as the proposed rate structure has been developed to encourage the efficient use of water while maintaining economic and cost of service principles.

Rate Design

The final element, the rate design process, applies the results from the revenue requirements to develop rates that achieve the general guidelines and objectives of GWP and compliance with the provision of law. These objectives are achieved through the development of cost-based rates, but may also account for adjustments to expenditures or the level of cash reserves to balance rate shock, continuity of past rate philosophy, conservation objectives, ease of administration, and legal requirements. This section of the report incorporates the general principles, techniques, and economic theory used to set utility rates. These principles, techniques, and economic theory were the starting point for this rate study and the groundwork used to meet GWP's key objectives in analyzing and redesigning their utility rates.

This utility rate study was performed to allocate the costs of providing service to users in order to ensure that rates are equitable and in compliance with Proposition 218 requirements. The total cost of serving each customer class is determined by distributing each of the utility cost components among the user classes based upon the respective service requirements of each customer class. Therefore, a cost of service rate study enables a water utility to adopt rates based on the costs attributable to each customer class. The purposes of this water utility cost of service study include defining the proportional allocation of the costs of service to users and deriving unit costs to support the development of water rates.

Water Rate Analysis

The Utility engaged Willdan Financial Services (Willdan) to perform a Water Rate Redesign study focused on two main principles. The first objective is revenue sufficiency; where revenues are set to match expenditures related to operations, maintenance, capital, and funding of reserves. The second objective is to, within the cost of service principles of Proposition 218, and the water conservation goals of Article X of the State Constitution and Water Code Section 370 and 375, design water rates that promote efficient use of water and reflect the varying costs of water and demand to each customer or class. This section of the report outlines the details of the analysis and the approach to developing the recommendations.

Water Consumption and User Characteristics

Willdan examined the previous five years of billing data provided by the City. Multiple years of data were analyzed to ensure short-term anomalies and long-term trends are captured. Furthermore, billing data was analyzed to determine demand patterns between customer classes and overall consumption characteristics. As the projected volume of water consumption is a key component in revenue generation, it is critical that appropriate adjustment and trends are rationalized. The consumption analysis revealed GWP customers have a lower than average per capita use of water, when compared to similar Los Angeles County agencies, which is mainly due to the concentration of multi-family properties within the City. GWP provides water to approximately 33,450 accounts. Figure 2-1, provides a summary analysis of the City's existing water user classes and the number of accounts associated with each in FY 2011:

Figure 2-1: Customer Classification and Accounts

Category Description	Recommended Classification	2010 Accounts
City Of Glendale	Commercial	271
Commercial Business	Commercial	2,026
Commercial W/Master-Metered Water (Busines	Commercial	29
Common Use Electric/Water For Businesses	Commercial	24
Electric/Water Services - No Facility	Commercial	11
Industrial - Large Business	Commercial	192
Public Authority	Commercial	9
Small Business	Commercial	1,178
Irrigation Meters	Irrigation	256
Common Use Areas For Apartment Or Condos	Multi-Family	3,120
Condominium Units	Multi-Family	562
Master-Metered Residential	Multi-Family	134
Multi-Family Residential	Multi-Family	2,803
Multi-Family W/Master-Metered Water	Multi-Family	518
Single Family Residential	Single Family	22,309
Total Accounts		**33,442**

These records were identified and compiled by analyzing the utility's billing records. In addition, for simplicity and clarity, Willdan recommends combining related billing classes based on demand and usage characteristics as shown in the table above.

In addition to the account information provided in the preceding table, billing records were also analyzed for average and peak (max) month consumption. This analysis helps differentiate between demand characteristics of different users and customer classes. The summary of these results is provided in Figure 2-2.

Figure 2-2: Water Consumption Characteristics, by Billing Class

Category Description	Average Month	Peak Month	CY2010 Consumption	% of Peak	% of Average
City Of Glendale	13,033	23,549	156,390	1.7%	1.5%
Commercial Business	91,043	134,531	1,092,519	9.7%	10.3%
Commercial W/Master-Metered Water (Business)	4,752	7,210	57,029	0.5%	0.5%
Common Use Areas For Apartment Or Condos	251,349	345,931	3,016,190	24.8%	28.6%
Common Use Electric/Water For Businesses	1,434	2,771	17,213	0.2%	0.2%
Condominium Units	3,570	5,791	42,841	0.4%	0.4%
Electric/Water Services - No Facility	885	1,276	10,620	0.1%	0.1%
Industrial - Large Business	20,637	28,844	247,641	2.1%	2.3%
Irrigation Meters	16,830	35,808	201,961	2.6%	1.9%
Master-Metered Residential	10,130	12,021	121,564	0.9%	1.2%
Multi-Family Residential	58,540	87,263	702,474	6.3%	6.7%
Multi-Family W/Master-Metered Water	33,202	49,900	398,422	3.6%	3.8%
Public Authority	143	743	1,715	0.1%	0.0%
Single Family Residential	357,314	634,102	4,287,766	45.5%	40.6%
Small Business	17,038	22,460	204,452	1.6%	1.9%
Proposed Classifications					
Single Family	357,314	634,102	4,287,766	45.5%	40.6%
Multi-Family	356,791	500,906	4,281,492	36.0%	40.5%
Commerical	148,965	221,384	1,787,579	15.9%	16.9%
Irrigation	16,830	35,808	201,961	2.6%	1.9%

The percentage distribution of the accounts by proposed classifications is shown below in figure 2-3. Residential accounts, single-family and multi-family, encompass more than 88% of the total water accounts and represent 81% of total water consumption as shown in figure 2-4.

Figure 2-3: Distribution of Water Accounts

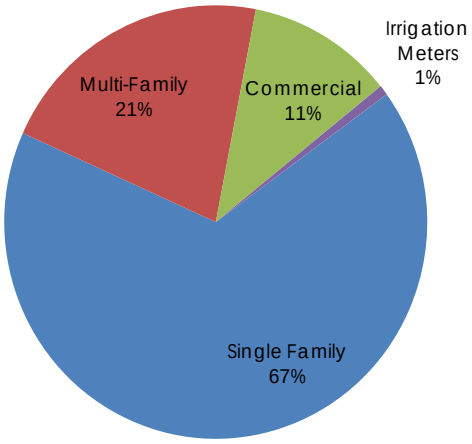
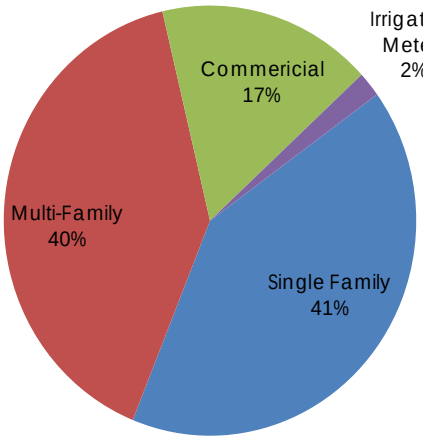


Figure 2-4: Distribution of Water Usage



Although GWP currently has distinct customer classifications, the existing two-tiered water rate structure was applied to all customers, effectively employing a single customer class. As consumption and demand patterns vary between customer classes, the proposed rate redesign along with the recommended naming conventions would more closely reflect the demand of the classes, and therefore their cost on the system. Based on a detailed analysis spanning the previous 6 years of consumption data – the following customer classifications are proposed.

Single-Family: Single-family refers to individual residential dwelling units, each served by a separate meter. Consumption patterns within single family are relatively homogenous.

Multi-Family: Glendale serves a significant multi-family population justifying its own customer classification. Multi-Family encompasses residential dwellings such as apartments or condominium complexes, in which two or more dwelling units share the same meter. Multi-Family differs from Single-Family in that there is a lower peaking related to lower densities and the lack of landscaping.

Commercial: Comprised of a diverse group of customers ranging significantly by type (restaurants, office buildings, book stores, strip malls, car washes, etc) and size (fast food vs. sit-down restaurant). Consequently, commercial is designed as a collective group. Ideally, additional subcategories for commercial would be possible if each account included additional data regarding the specific commercial use; however, similar to other cities and agencies throughout the state and country, GWP does not track nor compile this data.

Irrigation*:* The City currently maintains and tracks irrigation accounts. As such, the existing data was analyzed to show that irrigation's peak varied enough from commercial to justify its own customer classification.

Revenue Requirements Analysis

The first step in a rate analysis is a review of the utility's revenue requirements. The result of this review is a picture of the utility's existing financial health, which is necessary to determine the current and future revenue needs. To ensure that both short and long run financial health were reviewed, Willdan performed a 10-year financial outlook; however, for the purposes of this study, rates and financial projections will be limited to 5 years (FY 2016). Willdan reviewed expenditures (operation and maintenance (O&M), capital, and reserves requirements) against revenues (rate revenue, capacity fee revenues, etc). Willdan analyzed and reviewed the water utility's historical and current financial statements, six years of water consumption records, capital improvement programs and plans, reserve policies, and conferred with staff to forecast expenditures.

Existing Water Utility Revenues

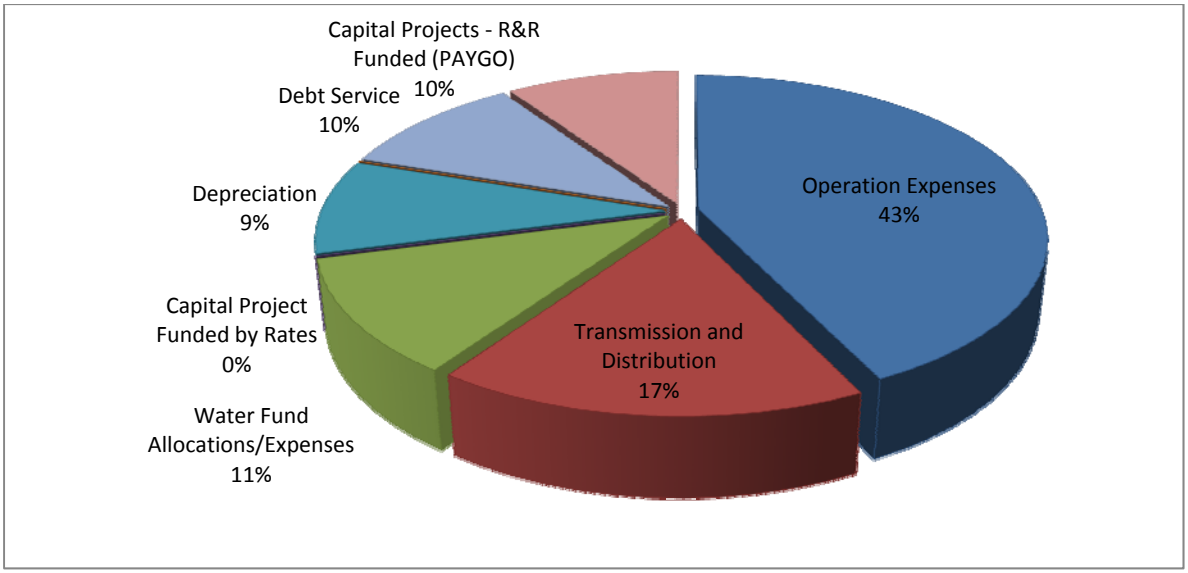
The water utility derives revenue from a variety of sources. Just over 85% of the Water Utility's revenue is originated from rate revenues (monthly rates). In Fiscal Year 2010-2011, GWP generated nearly $38 million in operating rate revenue, compared with $5.4 million in non-operating revenue, such as rental income and donations and contributions. In years past, the utility was able to generate interest income; however, currently, reserves are not available for investment.

Existing Water Utility Expenditures

To achieve long-term financial health, a utility's revenues must be sufficient to meet total expenditures or cash obligations. This "required revenue" includes all incurred costs related to operation and maintenance, capital improvement programs, and principal and interest payments on existing or proposed debt.

As demonstrated by Figure 2-5, expenditures were categorized into one of seven classifications: (1) Operation; (2) Transmission and Distribution; (3) Water Fund Allocation/Expenses; (4) Depreciation; (5) Debt Service (6) Capital Projects Funded by Rates; and (7) Repair & Replacements (R&R) funded Capital. The pie chart below demonstrates the relative size of the various expense categories over the study period.

Figure 2-5: Cost Distribution by Expenditure Classification



The largest piece, Operation Expenses, is driven primarily by the cost of purchased water. Historically, ground water pumped from local wells provides only forty-percent (40%) of total water consumed. The remaining 60% is purchased, at a much higher cost, through Metropolitan Water District – a large regional water purveyor for Southern California. On average, the City purchases 20,000 acre-feet (AF) of water at a current cost of $744 per AF. This uncontrollable cost of purchased water now represents 22% of total expenditures, which is the single largest cost among operating expenses. This percentage is an increase over the historical average and is projected to climb higher as MWD continues to raise rates. This represents a significant and uncontrollable cost burden on the utility. As such, the rates have been designed to address the specific difference in the input price of ground water versus that of purchased water.

As part of GWP's financial plan, the water utility prepares a comprehensive water Capital Improvement Program (CIP) annually, to address current and future water system needs. As a result of the economic downturn, and in an attempt to limit capital expenditure, the utility has cut the existing CIP to only essential and critical needs. In 2007, during the last financial and rate review, GWP had planned for two debt issues. The first planned bond issuance occurred in 2008 in an amount equal to $50M; however, the second bond issuance, which was expected to occur in 2010 for $37M, was deferred. As a result, GWP is now proposing a $60 million bond issuance in early 2012 to fund large one-time capital expenditures. Assuming the occurrence of the 2012 bond issuance, there will be no cash funded projects until late FY 2014 ($5 million), at which point the Water CIP is expect to fall to an average of $11 million annually through 2022.

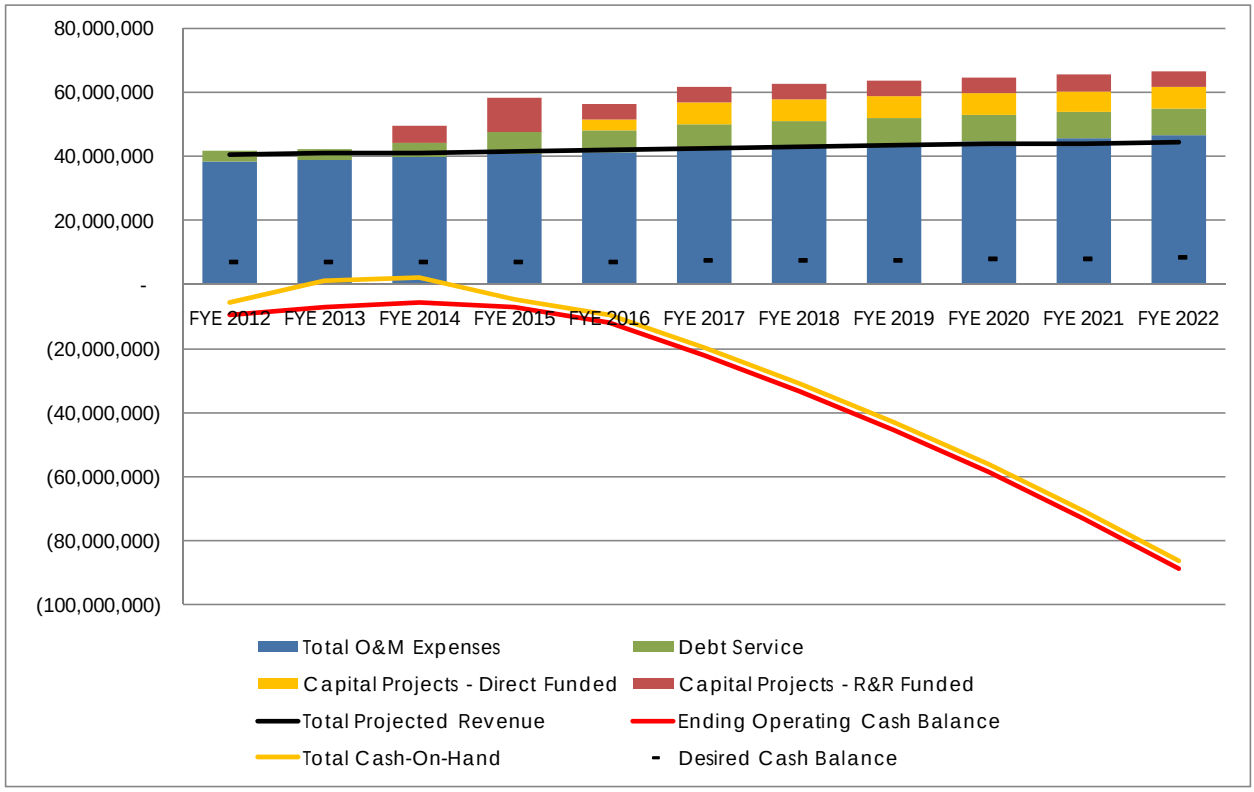
Through the study period debt service costs, related to principal and interest on the existing 2008 bond sale and on the forecasted 2012 issuance, account for 11% percent of the utility's expenditures. In order to minimize the initial impact of the 2012 bond sale, GWP is proposing to capitalize interest for three years as it did with its 2008 bond sale. The Department must meet debt service coverage requirements on its outstanding bond issues. Per the 2008 bond covenant, the utility is required to have a coverage requirement of 1.25. The Official Statement states that the water utility's adjusted New System Revenues shall amount to at least 1.25 times the annual debt service outstanding. The Utility currently maintains a coverage ratio that meets the bond covenant; however, the coverage ratio has been reduced in recent years and may dip below the 1.25 coverage with no revenue adjustments.

To maintain financial flexibility, the water utility has a target to maintain $11.3 million cash on hand as part of its reserve policy. This reserve policy consists of operating, capital and rate stabilization requirements. At the end of June (FYE 2011), the utility's cash balance was negative $11.5 million and increased to negative $13.5 million as of September 30, 2011. As such, the utility does not have the necessary cash available to meet ongoing cash flow requirements, hydrological variations, or emergency repairs.

Willdan worked with GWP staff to establish financial thresholds and reserve accounts to ensure sufficient funding and best management practices for operations and capital. Consistent with industry standards, Willdan targeted an Operating reserve of 72 days with a ceiling of 90 days. This will provide the utility 72-90 days of operating reserves to fund day-to-day operations and cash outlay. Additionally, Willdan established a Repair and Replacement Reserve (R&R) that is primarily funded through the depreciation expense, or with funds that had been directed toward Operating Reserve up until the point where that fund reaches its maximum targeted balance of 90 days.

Figure 2-6 demonstrates the Baseline Scenario. This represents current and projected financial conditions of the water utility absent any revenue adjustment (increases) over the next 5 years. As the figure illustrates, existing revenue levels are unsustainable and the utility is forecasted to continue to run at a loss.

Figure 2-6: Baseline Financial Scenario



The declining red line (lower line) shows the utility's projected ending cash balance. While short-term drops or dips of reserve levels are acceptable, given the beginning cash balance and the continued downward trend, revenue adjustment alternatives must be explored, as the baseline scenario is unsustainable.

Revenue Requirement Alternatives

Given the existing financial condition of the utility, it seems apparent that without significant revenue increases in the immediate future; it will not be able to meet its targeted objectives without a significant burden placed on customers. As such, Willdan worked with GWP staff, the Glendale Water & Power Commission, and the City Council to develop a Financial Plan and water rate structure that provides financial stability to the utility within a five year study period, while minimizing the impact to customers. Consequently, two revenue requirement alternatives (scenarios) are being presented in this report - the "Recommended" and "Step-Up." Both financial scenarios are forecasted to achieve the targeted financial objectives within 5-years; however, the impact to the customer under each of the scenarios varies slightly.

Recommended: Under this scenario, revenues would be increased by three percent (3%) for four years, followed by a four percent (4%) increase in the fifth year. Please note, the City intends to only notice for water rate increases for four years and will be required to re-notice customers in year 5, if the 4% revenue increase is still necessary. With this scenario, the utility would fully fund reserve levels and maintain a sufficient debt coverage ratio to meet its existing and future bond covenants.

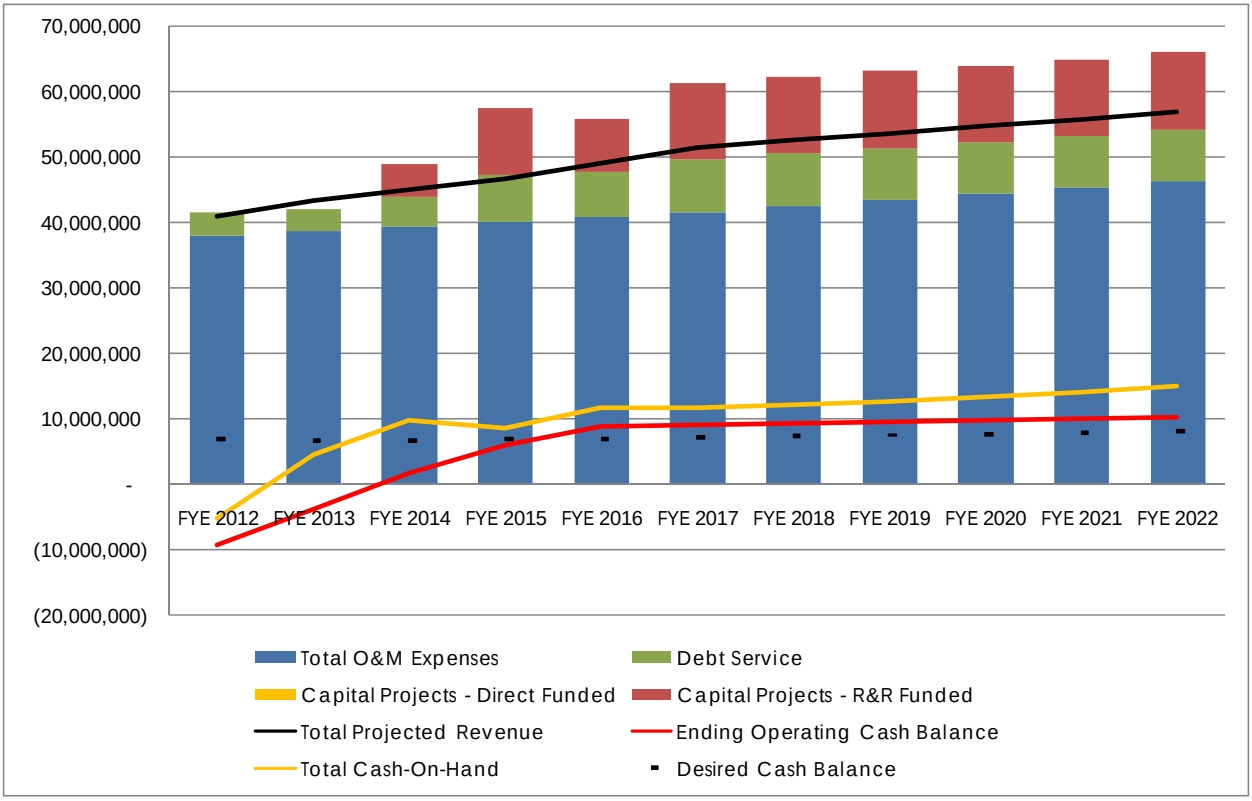
Figure 2-7 details the existing and projected expenditures of the utility and the corresponding impact of the Recommended revenue adjustments on the Utility's financial health.

Figure 2-7: Revenue Requirements Analysis

Description	Escalation Code	FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
		1	2	3	4	5
Revenue from Rates		Current Year	Projected			
Water - Metered	GM	$ 38,310,883	$ 38,693,991	$ 39,080,931	$ 39,471,741	$ 39,866,458
Water - Metered (Recycled)	GM	1,164,646	1,176,292	1,188,055	1,199,936	1,211,935
Water - Private	GM	553,293	558,826	564,414	570,058	575,759
Water - Other	GM	278,092	280,873	283,681	286,518	289,383
Total Operating Revenue		**$ 40,306,913**	**$ 40,709,982**	**$ 41,117,082**	**$ 41,528,253**	**$ 41,943,535**
Additional Rate Revenue Required						
Fiscal Year	**Revenue Increase**					
FYE 2012	3.0%	$ 604,600	$ 1,221,300	$ 1,233,500	$ 1,245,800	$ 1,258,300
FYE 2013	3.0%		1,257,900	1,270,500	1,283,200	1,296,100
FYE 2014	3.0%			1,308,600	1,321,700	1,334,900
FYE 2015	3.0%				1,361,400	1,375,000
FYE 2016	4.0%					1,888,300
Total Additional Rate Revenue		**$ 604,600**	**$ 2,479,200**	**$ 3,812,600**	**$ 5,212,100**	**$ 7,152,600**
Total Projected Revenue		**$ 40,911,513**	**$ 43,189,182**	**$ 44,929,682**	**$ 46,740,353**	**$ 49,096,135**
Operation Expenses						
Production						
Potable Water Operation		$ 19,335,176	$ 18,643,552	$ 18,632,128	$ 18,694,288	$ 18,800,388
Potable Water Source Maintenance		1,465,785	1,674,900	1,725,100	1,776,900	1,830,200
Recycled Water Operation		441,895	378,100	389,400	401,100	413,000
Recycled Water Source Maintenance		127,085	194,100	199,900	205,900	212,100
Transmission and Distribution						
Potable Water Transmission & Distribution Mtc		2,818,455	3,206,700	3,302,800	3,402,000	3,504,000
Maintenance Potable Water Misc		1,338,000	1,417,400	1,460,000	1,503,800	1,548,900
Recycled Water Transmission & Distribution Mtc		262,200	122,700	129,400	133,300	137,300
Maintenance Recycled Water Misc		96,865	109,800	113,100	116,500	120,000
Other Water Operating Expenses		3,148,200	3,228,800	3,325,700	3,425,400	3,528,300
Water Fund Allocations/Expenses						
General Plant Allocation		1,224,600	92,400	33,100	19,100	68,900
Customer Service Expense		5,012,890	5,397,500	5,649,600	5,731,500	5,843,300
Capital Projects						
Capital Projects - Direct Funded		-	-	-	-	-
Total Operating Expenses		**$ 35,271,151**	**$ 34,465,952**	**$ 34,960,228**	**$ 35,409,788**	**$ 36,006,388**
Operating Income		**$ 5,640,362**	**$ 8,723,230**	**$ 9,969,454**	**$ 11,330,564**	**$ 13,089,747**
Non-Operating Revenue		**$ 4,303,704**	**$ 4,422,158**	**$ 4,690,677**	**$ 4,931,076**	**$ 5,060,230**
Non-Operating Expenses		$ 4,000,000	$ 4,400,000	$ 4,625,000	$ 4,950,000	$ 4,975,000
Fund Transfers		-	-	-	-	-
Net Operating Income After Transfers		**$ 5,944,066**	**$ 8,745,388**	**$ 10,035,131**	**$ 11,311,641**	**$ 13,174,977**
Debt Service		$ 3,575,000	$ 3,375,000	$ 4,522,669	$ 7,006,514	$ 7,009,786
Targeted Debt Coverage Ratio		125%	125%	125%	125%	125%
Calculated Debt Coverage Ratio		278%	389%	324%	232%	259%
Net Income		**$ 2,369,066**	**$ 5,370,388**	**$ 5,512,462**	**$ 4,305,127**	**$ 6,165,191**
Water Enterprise Fund						
Beginning Operating Fund Balance		$ (11,490,710)	$ (9,121,644)	$ (3,751,256)	$ 1,761,206	$ 6,066,333
Net Income		2,369,066	5,370,388	5,512,462	4,305,127	6,165,191
Ending Operating Cash Balance		**$ (9,121,644)**	**$ (3,751,256)**	**$ 1,761,206**	**$ 6,066,333**	**$ 8,878,288**
Days of Operating Reserves		(94)	(40)	18	63	90
Fund Balance Days of O&M		72	72	72	72	72
Desired Cash Balance		6,957,597	6,798,763	6,896,264	6,984,945	7,102,630
Transfer of O&M to R&R		-	-	-	-	(3,353,236)
Capital Repair and Replacement Fund						
Beginning Capital R&R Fund Balance		$ -	$ 4,000,000	$ 8,400,000	$ 8,025,000	$ 2,599,100
Deposit Based on Depreciation (From Net Income)		4,000,000	4,400,000	4,625,000	4,950,000	4,975,000
Capital Projects - R&R Funded		-	-	(5,000,000)	(10,375,900)	(8,121,600)
Excess from O&M Reserve Fund		-	-	-	-	3,353,236
Ending Capital R&R Fund Balance		**$ 4,000,000**	**$ 8,400,000**	**$ 8,025,000**	**$ 2,599,100**	**$ 2,805,736**

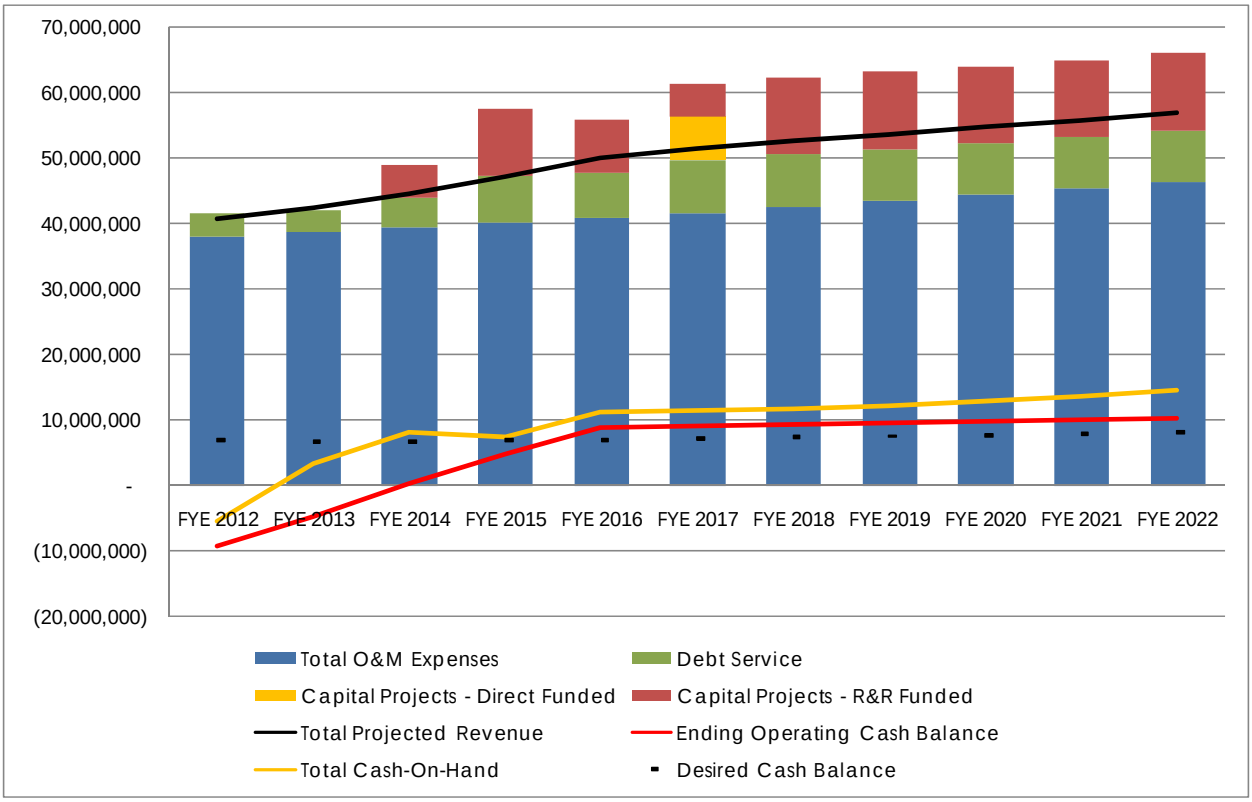
Similar to the Baseline Scenario figure, Figure 2-8 forecasts the financial health of the utility; however, as opposed to the baseline scenario, the revenue increases under this scenario provide a more positive outlook and allow for a funding of reserves.

Figure 2-8: Recommended Financial Scenario



Step Up: Based on direction from the Glendale Water & Power Commission to minimize the immediate impact of revenue increase on customers, in light of the current economic climate, and in order to meet the financial objectives outlined by the utility by year five, an alternative to the Recommended is presented as the "Step-Up" scenario. Rather than four years of 3% revenue adjustments, as included under the Recommended scenario, the Step Up scenario models two years of two percent (2%) adjustments, followed by a single increase of four percent (4%), and two subsequent years of five percent (5%) increases. Please note, only one of the five percent increases is intended to be noticed and GWP will be required to re-notice customers in year 5, if the 5% revenue increase is still necessary. As with the Recommended scenario, the utility is projected to have reserves funded and would maintain sufficient debt coverage for existing and proposed debt obligations. Figure 2-9 below outlines the impact of the financial health of the utility under the proposed revenue increase.

Figure 2-9: Step Up Financial Scenario



Cost of Service Analysis

Following the consumption and revenue requirement analysis, the next stage is to distribute costs (revenue requirements) to functional components, and ultimately, to each customer class. The cost of service analysis is a systematic process by which revenue requirements are allocated by function to generate a classification of fair and equitable costs in proportion to the service received for each user class. The cost of services analysis marries the Water Consumption and Usage Characteristics analysis with the Revenue Requirements and expenditure analyses. This section of the report discusses the methodology of allocating expenditures to the functional cost components to best project each customer classification's burden on the system.

Cost Allocation by Function

To ensure system expenditure allocations are equitable and proportionate to user classes, it is important to first understand how different users consume water (average versus peak usage). In addition, consideration should be given to how the utility system was designed, constructed, and is currently being utilized. To equitably allocate the cost of service between the different user classes in proportion to their usage and peaking demands, costs first need to be allocated to functional cost components. The cost of service allocation completed in this study is established on the base-extra capacity method endorsed by the American Water Works Association (AWWA). Under the base-extra capacity method, revenue requirements are allocated to the different user classes proportionate to their demand on the water system. Allocations are established on average day (base) usage, maximum day (peak) usage, meters and services, and billing and collection. Use of this methodology results in an AWWA-accepted

cost distribution among customer classes and a means of calculating and designing rates to proportionately recover those costs.

Figure 2-10 shows a summary distribution of the utility's expenditures for each year of the study period. To generate this data, GWP's budget was analyzed line-item by line-item and expenditures were distributed based on a variety of demand factors: average day (base), maximum day (peak) usage, meters and services, and customer accounts.

Base costs are those operating and capital costs incurred by the water system that are associated with servicing customers based on customer class demand.

Extra capacity (max day) costs represent those operating costs incurred to meet customer peak demands for water in excess of average day demand (base). This cost also includes capital costs related providing excess capacity.

Ground Water costs include costs related to the pumping and production of ground water. This includes costs of labor, electricity, materials, and facilities.

Metropolitan Water District costs are attributable to the direct and indirect costs of purchased water.

Customer Service costs include customer accounts, meter service, and fire hydrant related costs. Customer account costs are uniform to all customers and include such costs as meter reading, billing, accounting, and administration. Meter service costs include maintenance and capital costs associated with meters and services and fire hydrant related costs.

Figure 2-10: Distribution of Expenditure by Function

	Rate Revenue Required	Base	Max Day	Ground Water Production	MWD	Customer Account	Meters & Services	Fire Protection
		Allocation of Revenue Requirements						
FYE 2012	41,516,113	$ 2,693,413	$ 5,037,616	$ 6,031,332	$ 15,448,322	$ 4,667,798	$ 7,052,717	$ 584,916
		6%	12%	15%	37%	11%	17%	1%
FYE 2013	43,189,182	2,877,786	5,173,951	6,194,561	14,742,838	4,794,124	7,243,588	600,745
		7%	12%	15%	36%	12%	17%	1%
FYE 2014	44,929,682	3,069,036	5,304,046	6,350,319	14,069,640	4,914,669	7,425,724	615,851
		7%	13%	15%	34%	12%	18%	1%
FYE 2015	46,740,353	3,260,300	5,416,320	6,484,739	13,488,668	5,018,701	7,582,908	628,887
		7%	13%	16%	32%	12%	18%	2%
FYE 2016	49,096,135	3,503,707	5,541,397	6,634,489	12,841,440	5,134,596	7,758,017	643,410
		7%	13%	16%	31%	12%	19%	2%
FYE 2017	51,570,571	3,759,374	5,660,469	6,777,049	12,225,288	5,244,926	7,924,719	657,235
		7%	14%	16%	29%	13%	19%	2%
FYE 2018	52,607,200	3,866,483	5,707,023	6,832,786	11,984,388	5,288,063	7,989,895	662,640
		7%	14%	16%	29%	13%	19%	2%
FYE 2019	53,664,366	3,975,713	5,752,647	6,887,410	11,748,300	5,330,337	8,053,769	667,938
		7%	14%	17%	28%	13%	19%	2%
FYE 2020	54,743,111	4,087,172	5,797,386	6,940,974	11,516,793	5,371,792	8,116,404	673,132
		7%	14%	17%	28%	13%	20%	2%
FYE 2021	55,843,377	4,200,855	5,841,236	6,993,475	11,289,881	5,412,424	8,177,796	678,224
		8%	14%	17%	27%	13%	20%	2%
FYE 2022	56,966,008	4,316,849	5,884,233	7,044,953	11,067,391	5,452,264	8,237,991	683,216
		8%	14%	17%	27%	13%	20%	2%
	Rate Component	Base		GW	MWD	Fixed Charge		

The separation of costs into these functional components provides the means for further allocation to the customer classes based upon their respective demand of each function. The resulting distribution percentages (throughout figure 2-10) are utilized to allocate annual required revenue (system operating and capital costs) to each customer class based on the class' respective demand on the system (Figure 2-2). Figure 2-11 demonstrate each class's proportionate share of GWP's functional cost components based on the service demand each class places on the system, number of accounts, and meter equivalents.

Figure 2-11: 2012 Customer Class Cost Distribution

	Base	*Peak*	Base	Max Day	Customer Account	Meters & Services	Fire Protection
Total			**$ 2,693,413**	**$ 5,037,616**	**$ 4,667,798**	**$ 7,052,717**	**$ 545,884**
Single Family	*40.6%*	*45.5%*	$ 1,093,754	$ 2,294,469			
Multi-Family	*40.5%*	*36.0%*	1,092,153	1,812,507			
Commercial	*16.9%*	*15.9%*	455,988	801,070			
Irrigation	*1.9%*	*2.6%*	51,518	129,570			
Total Accounts	*33,556*				4,667,798		545,884
Meter Equivalents	*60,065*					7,052,717	

Once the system cost causation analysis is complete, the next step is to design the most equitable and appropriate rate structure to recover those revenues.

Rate Design Analysis

Rate design is the process of analysis that determines how the allocated revenue requirements are recovered by each customer class through water rates. In the cost allocation section of this Report, we were concerned with horizontal equity – equity and proportionate share between customer classes; however, in the rate design process, the focus is on vertical equity – how to ensure each user, within each class, is paying its fair and proportionate share.

Criteria and Considerations

In determining the appropriate rate level and structure, Willdan, in conjunction with GWP staff, analyzed various generated financial scenarios concerning the proposed adjustments and the implications attributed to those decisions.

A simplified list of some of the rate design considerations that were reviewed is listed:

- Clear and understandable
- Easily administered
- cost of service principles
- Revenue stability (month to month and year to year)
- Prudent financial planning
- Capital Improvement Program Financing (improving the existing system)
- Fair and equitable (cost-based)
- Comply with legal and regulatory requirements

Every consideration has merit and plays an important role in a comprehensive rate study. When developing GWP's proposed rates, all of the aforementioned criteria were taken into consideration, in addition to the objective of minimizing rate shock. Determining the appropriate balance is crucial, as some of the criteria sometime conflict with one another, i.e. the conservation measures and cost-based. In designing rates, there will always be a balance between the various objectives as well as policy decisions made by the City Council.

Existing Rate Structure

The existing rate structure is a tiered rate structure and is applied to all customers regardless of classification. The structure is comprised of the following cost components.

Customer Charge: Charge is per month and is based on the size of water meter. This component of the water rate reflects the cost of metering support, customer service, and maintaining the account.

Commodity (Usage) Charge: Charge is $.8399 for first 10 hundred cubic feet (HCF) used per month; $1.8063 for all HCF used in excess of 10 HCF per month. This rate is considered a modified "conservation rate" that encourages water conservation through price signaling. This is the water usage charge. This supports the cost of the system that brings the water to homes or businesses.

Water Adjustment Charge: Charge is $1.2348 per HCF on all water bills, except Recycled Water, which is $0.9261. This component of the water rate recovers the costs of purchasing water from Metropolitan Water District and the costs of pumping water from local basins. The water adjustment rate is calculated twice each year and becomes effective the first day of January and July of each year. The water adjustment charge could either increase or decrease semi annually and is based on pumping costs and purchased water costs of the previous 6 months.

Proposed Rate Structure

Willdan recommends expanding the existing single class rate structure into unique and equitable class-based structures. Based on a detailed multi-year consumption analysis and detailing of billing records, Willdan recommends grouping customers based on user classification and peaking factor to create an appropriate and equitable rate design.

As the consumption analysis confirmed, different customer types use water differently and thus have different consumption patterns and service demands on the utility. Even within residential properties, there were clear and distinct consumption patterns between single family and multi-family customers, and sufficient data to separate residential properties into two customer classes. As necessary data was available, the proposed rate structures were customized to provide additional horizontal (equity amount different customer classes) and vertical equity (equity amongst users in that class) over the existing structure.

Beyond changing the structure, some components of the rate structure were modified to reflect the current review and allocation of the costs incurred. Below are the proposed components of the

recommended rate structure – while each customer class' rate(s) is comprised of these charges, the specific rates may differ based on demand.

Customer Charge: Charge is per month and based on the size of water meter. This component of the water rate reflects the cost of metering support, customer service, and maintaining customer accounts. *(Varies by meter size, not by customer class)*

Base Variable: Charge is applied to all units of water used per month. This supports the cost of the system that brings the water to homes or businesses and varies by customer class *(based on peak demand)*.

Groundwater: Due to the limited nature of groundwater resources and its associated cheaper unit cost compared to water purchased from MWD, groundwater was allocated to all customer classes based on its percentage of total water consumed. The charge is imposed in order to recover a portion of costs related to pumping, collection, and treatment of ground water, and is only applied to the allocated units of groundwater. *(Total cost attributed to groundwater divided by total units of groundwater)*

Ground Water Costs	**$ 6,031,332**
Total Ground Water Consumption (HCF)	**4,277,297**
Ground Water Variable per Unit Cost	**$ 1.41**

Metropolitan Water (MWD): Charge is applied to units of water that are provided to customers in excess of the groundwater allocation of the respective customer class. The charge is imposed to recover the higher unit costs associated with the purchase and pumping of water from Metropolitan Water District. GWP currently purchases approximately 60% (20,000 AF) of its water at a current cost $744 per acre-foot. *(Total cost attributed to MWD divided by total units of MWD)*

MWD Water Costs	**$ 15,448,322**
Total MWD Water Consumption (HCF)	**6,478,567**
MWD - Variable per Unit Cost	**$ 2.38**

Water Adjustment Charge: Initially starting at zero, this charge will be adjusted semi-annually as a pass-through to reflect and recover cost increases outside the control of Glendale Water & Power, such as increased cost of purchased water from MWD, pursuant to Government Code Section 53756. This decision was made to ensure appropriate cost recovery without the possibility of overcharging customers for assumed increases, and to maintain continuity between the existing rate structure and new rate redesign. The water adjustment charge will be calculated twice each year and become effective the first day of January and July of each year.

Single Family's rate structure is designed to reflect the additional costs associated with greater service demand. Each tier of the proposed five-tier inclining block rate structure is designed to mirror how additional costs are incurred by the utility with increasing levels of demand.

Base Component - Costs related to the base variable rate component are allocated to each tier distributed by the overall consumption and calculated peak in that tier. This design reflects how the utility incurs higher costs to meet additional demand and increased peaking among accounts within the Single-Family Customer Class.

Single Family Base Tiering Analysis					
		Total	SFR % of Base		SFR Cost
Base Cost	$	2,693,413	41%	$	1,093,754
Peak Costs	$	5,037,616	46%	$	2,294,469

Base Cost Allocation to Tiers

	Base	Peak	Total
Tier 1	$ 100,630	$ -	$ 100,630
Tier 2	100,630	271,648	372,278
Tier 3	297,549	812,657	1,110,206
Tier 4	148,697	257,647	406,344
Tier 5	446,246	952,518	1,398,764
Total	**$ 1,093,754**	**$ 2,294,469**	

Groundwater –Single family's allocation of groundwater is divided equally to all accounts within the class, allotting each account with approximately 15 units of ground water (HCF).

Metropolitan Water (MWD) – MWD is allocated to single-family consumption in excess of the ground water allocation (~15 HCF). All remaining units of consumption, beyond the groundwater allocation, will incur the direct and indirect costs of purchased water. *(Costs allocated to MWD divided by total purchased water)*.

Tier Design- Multiple tiers have been designed to reflect the proportionate increase in costs associated with additional demand place on the utility by different Single-Family Customers. Established through the consumption analysis and allocation of ground water, Tiers 1 & 2 will be comprised of the base component and ground water. Tier 3, is comprised of the Tier 3 base component and a blend between the remaining ground water allocation and MWD water, based on the percentage share that each water source covers of the Tier 3 allotment (2.48 HCF of groundwater versus 18.03 HCF of MWD). Tiers 4 & 5 encompass the applicable base component plus the MWD cost per unit. In keeping with the cost-of-service requirements of Proposition 218 – the rate structure reflects the higher cost of purchased water, and the proportional costs of each tier based on each tier's peak demand when compared to Tier 1. In addition, the rate structure encourages efficient use of water and includes rates that more closely reflect how the costs are incurred.

Single Fmaily	Tier (HCF)	Mix
Tier 1	0 - 6.26	Base1 + GW
Tier 2	6.27 - 12.52	Base2 + GW
Tier 3	12.53 - 31.03	Base3 + Blend
Tier 4	31.04 - 40.28	Base4 + MWD
Tier 5	40.29 +	Base5 + MWD

- ***Tier 1*** water allotment targets a base amount derived by multiplying a 55 gallons per capita per day by the single-family density factor for Glendale equal to 2.8 persons per unit. This calculation generates a base allotment for Single-Family accounts equal to 6.26 units of water.
- ***Tier 2*** allots water for up to 110 gallons per capita per day and represents efficient use of water.
- ***Tier 3*** allots water based on the average irrigable area (landscape) of a single family home in Glendale. GIS and parcel data analysis revealed an average irrigable area of 3,764 square feet and the Tier 3 allotment provides sufficient water for the average irrigable area to keep a turf lawn green (8 gallons per day per 100 sq ft).
- ***Tier 4*** provides an allotment for additional needs.
- ***Tier 5*** is applied for all consumption in excess of tier 4.

Multi-Family's rate structure is designed to reflect additional costs associated with greater demand per dwelling unit (rather than per account). Each tier of the proposed three-tier inclining block rate structure is designed to mirror how additional costs are incurred by the utility.

Base Component - Costs related to the base variable rate component are allocated to each tier distributed by the overall consumption and calculated peak in that tier. This design reflects how the utility incurs higher costs to meet additional demand and increased peaking among accounts within the Multi-Family Customer Class.

Multi-Family Base Tiering Analysis			
	Total	**MFR % of Base**	**MFR Cost**
Base Cost	$ 2,693,413	41%	$ 1,092,153
Peak Costs	$ 5,037,616	36%	$ 1,812,507

Base Cost Allocation to Tiers			
	Base	**Peak**	**Total**
Tier 1	$ 273,038	$ -	$ 273,038
Tier 2	273,038	336,952	609,991
Tier 3	546,077	1,475,555	2,021,631
Total	**$ 1,092,153**	**$ 1,812,507**	

Groundwater –Multi-family's allocation of groundwater is divided equally to all dwelling units (not accounts) within the class, allotting each dwelling unit with 7.5 units of ground water (HCF).

Metropolitan Water (MWD) – MWD is allocated to multi-family dwelling unit consumption in excess of the ground water allocation (7.5 HCF). All remaining units of consumption, beyond the groundwater allocation, will bear the direct and indirect costs of purchased water. *(Costs allocated to MWD divided by total purchased water)*.

Tier Design- To ensure vertical equity of multi-family accounts, it is necessary to address the inherent inequity between large and small multi-family complexes. As such, a tiered design that

incorporates unit counts is proposed. This methodology ensures each unit and subsequently each complex is allocated the same cost per unit and thus greater vertical equity.

MFR	Tier Range (HCF)	Components
Tier 1	0 - 5.10	Base1 + GW
Tier 2	5.1 - 10.20	Base2 + Blend
Tier 3	10.2 +	Base3 + MWD

In addition, multiple tiers have been designed to reflect the proportionate increased costs associated with additional demand place on the utility by different Multi-Family Customers. Established through the consumption analysis and allocation of ground water, Tier 1 will be comprised of the base component and ground water. Tier 2 is comprised of the Tier 2 base component and a blend between the costs of groundwater and MWD water, based on the percentage share that each water source covers of the Tier 2 allotment (2.4 HCF of groundwater versus 2.8 HCF of MWD) Tier 3 encompasses the multi-family Tier 3 base component as well as the MWD cost per unit. Per the cost-of-service guidelines of Proposition 218 – the rate structure reflects the higher cost of purchased water and the proportional costs of each tier based on each tier's peak demand when compared to Tier 1. In addition, the rate structure encourages efficient use of water and provides the utility with rates that more closely reflect how the costs are incurred.

- ***Tier 1*** water allotment targets a base amount derived by multiplying a 55 gallons per capita per day by the multi-family density factor for Glendale equal to 2.3 persons per unit. This calculation generates a base allotment for a Multi-Family unit equal to 5.10 units of water.
- ***Tier 2*** allots water for up to 110 gallons per capita per day and represents efficient use of water.
- ***Tier 3*** accounts for any consumption in excess of tier 2. As multi-family units generally lack outdoor irrigation need, Tier 3 is designed to represent additional water needs above reasonable domestic use.

Commercial and Irrigation's rate structure is a uniform rate structure (all units of water charged a single rate) rather than the tiered rate structure designed for residential. Customers other than residential vary considerably in size, use profile and needs, which makes it impractical and potentially inequitable to place them in a "one size fits all" tiered rate structure. Although multi-family complexes vary greatly in size, with unit counts it is possible to overcome this variability to tier multi-family appropriately. However, data that is more detailed is not available for commercial customers, and without the data a tiered rate structure would likely fail to provide vertical equity. Despite not being tiered, the uniform rate structure is built on the same cost components, and is derived based on the demand caused by Commercial customers, compared to the other customer classes, and ensures that the Commercial customer class is paying for its fair share of incurred costs. Although presented together, Commercial and irrigation rates vary due the higher peak associated with irrigation.

Class	Structure	Component
Commercial	Uniform	Base, GW, MWD
Irrigation	Uniform	Base, GW, MWD

Base Component - Costs related to the base variable rate component. *(Cost allocated to base variable divided by total consumption)*

Groundwater – Ground water is allocated to all classes based on the share of overall water demand or roughly 40% of the classes overall consumption.

Metropolitan Water (MWD) – MWD is allocated to consumption in excess of the allotted ground water (40% of consumption). All remaining units of consumption, beyond the groundwater allocation, will incur the direct and indirect costs of purchased water. *(Costs allocated to MWD divided by total purchased water)*.

Results and Customer Impacts

Regardless of the adopted revenue increase, revenue increases do not equal a corresponding rate increase. The results of the cost-of-service analysis and rate redesign will affect users differently, at both the customer class and account level. The cost of service analysis created one notable rate impact related to rate design – the balance between fixed and variable charges.

Second, the increased focus of a cost of service nexus and ensuring proper cost recovery related to peaking and purchased water costs, results in a better depiction of costs incurred by the utility. As a greater percentage of total utility expenditures were allocated to fixed charges, a corresponding lowering of the variable allocation occurred. Consequently, efficient and non-peaking users of water will benefit from a lower cost of water (commodity charge), than today. Average users will also see a decrease in their commodity charge. Inefficient and users that peak will pay for the additional cost attributable to them.

Fixed Charge

There are two components to the proposed fixed charge: Customer Account costs; and Meters and Services. Per Figure 3-1, roughly $5.2 million of required revenue is allocated to Customer Account and Fire Protection. These costs are distributed to each account evenly, as each account benefits equally from those expenditure functions.

Figure 3-1: Total Charge per Account

	FYE 2012	FYE 2013	FYE 2014	FYE 2015
Total Costs Allocated to Accounts	$ 5,213,681	$ 5,570,575	$ 5,940,780	$ 6,311,013
Number of Accounts	33,556	33,669	33,782	33,897
Annual Cost per Account	**$ 155.37**	**$ 165.45**	**$ 175.86**	**$ 186.18**
Number of Months	12	12	12	12
Monthly Charge per Account	**$ 12.95**	**$ 13.79**	**$ 14.65**	**$ 15.52**

Alternatively, costs related to Meters and Services are distributed on an equivalent meter factor, as endorsed by the AWWA. Larger meters place a higher demand on the utility due to a higher capacity and total flow rate, which in turn cause higher maintenance costs. Figure 3-2, shows the determined meter equivalency factor based on gallon per minute flow rates. This factor ensures meter costs are proportionate to the demand and cost incurred on the utility.

Figure 3-2: Total Charge per Meter

Meters and Services Cost Calculation

	FYE 2012	FYE 2013	FYE 2014	FYE 2015
Total Meters and Services Cost	$ 7,052,717	$ 7,535,499	$ 8,036,287	$ 8,537,114
Number of Equivalent Meters	60,065	60,410	60,758	61,110
Monthly Meter Charge per 3/4" Meter	**$ 9.78**	**$ 10.39**	**$ 11.02**	**$ 11.64**

Meter Size	Eq Meter Factc	Monthly Meters and Services Charge			
5/8"	**0.67**	$ 6.52	$ 6.93	$ 7.35	$ 7.76
3/4"	**1.00**	9.78	10.39	11.02	11.64
1"	**1.67**	16.31	17.32	18.37	19.40
1 1/2"	**3.33**	32.62	34.65	36.74	38.81
2"	**5.33**	52.19	55.44	58.79	62.09
3"	**10.00**	97.85	103.95	110.22	116.42
4"	**16.67**	163.08	173.25	183.70	194.03
6"	**33.33**	326.16	346.50	367.41	388.06
8"	**53.33**	521.86	554.40	587.85	620.89
10"	**76.67**	750.17	796.95	845.04	892.53

The Figures that follow show the total fixed charge for both financial scenarios. Please note, the cost of service analysis classified a higher percentage of utility expenditures as “fixed costs” than was previously calculated – this in turn lowered the allocation of “variable costs”. These costs are classified as “fixed” as they are incurred by the utility regardless of consumption. As a result, the fixed charge has increased,

which influences all users, regardless of water use and efficiency. Although all ratepayers will pay the increased charge, it affects very low users or vacationers more, on a percentage basis of their overall water bill. In addition, 5/8" and 3/4" meters are no longer grouped with 1" meters, and will now have individual rates.

Figure 3-3: Recommended – Fixed Charge

Meter Charge	FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
5/8"	$ 19.47	$ 20.72	$ 22.00	$ 23.28	$ 24.91
3/4"	22.73	24.18	25.68	27.16	29.06
1"	29.26	31.11	33.02	34.92	37.35
1 1/2"	45.56	48.44	51.40	54.32	58.08
2"	65.13	69.23	73.44	77.60	82.96
3"	110.80	117.74	124.88	131.93	141.00
4"	176.03	187.04	198.36	209.54	223.93
6"	339.11	360.29	382.06	403.57	431.23
8"	534.80	568.18	602.51	636.41	680.00
10"	763.12	810.73	859.69	908.05	970.24

Figure 3-4: Step-Up – Fixed Charge

Meter Charge	FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
5/8"	$ 18.73	$ 19.61	$ 21.18	$ 23.07	$ 25.02
3/4"	21.97	23.01	24.83	27.05	29.33
1"	28.46	29.79	32.15	35.01	37.95
1 1/2"	44.68	46.75	50.43	54.90	59.49
2"	64.15	67.11	72.38	78.77	85.34
3"	109.57	114.60	123.58	134.47	145.65
4"	174.46	182.45	196.72	214.04	231.82
6"	336.67	352.07	379.59	412.96	447.23
8"	531.34	555.61	599.02	651.66	705.72
10"	758.44	793.08	855.03	930.15	1,007.29

Single Family Impacts

Under both revenue adjustment scenarios, the rate redesign and the first year of proposed revenue increase, a majority of single-family users will see their monthly bill decrease assuming similar existing consumption patterns.

With the adjustment to the rate structure design, (addition of three tiers) a vast majority of ratepayers will pay less for the actual water. Only those using greater than 46 units a month will see their variable bill component increase. Ratepayers who are high users, those in Tier 5 and the upper end of Tier 4, will see their monthly bills escalate rapidly as they use more water because the new Tier 4 & 5 rates are higher than the existing Tier 2.

Following are the proposed single-family rates for each scenario. Please note, that while the recommended rates are higher by one to two cents in FYE 2012, they are lower by four to nine cents in FYE 2016. This is a result of how revenue increases are scheduled between the scenarios.

Figure 3-5: Recommended – Single Family Commodity Charges

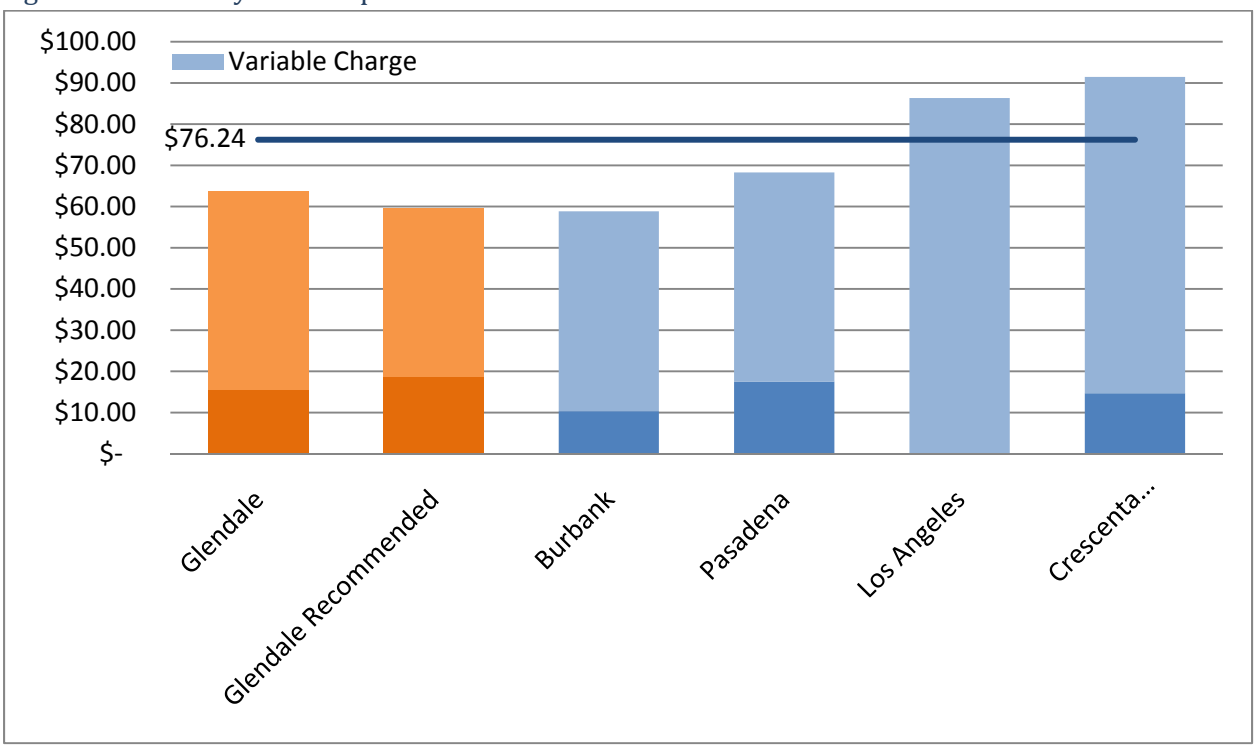
		FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Single Fmaily	**Tier (HCF)**					
Tier 1	0 - 6.26	$ 1.54	$ 1.63	$ 1.73	$ 1.83	$ 1.96
Tier 2	6.27 - 12.52	1.91	2.05	2.19	2.34	2.51
Tier 3	12.53 - 31.03	3.03	3.11	3.19	3.27	3.35
Tier 4	31.04 - 40.28	3.35	3.45	3.54	3.63	3.72
Tier 5	40.29 +	3.86	3.99	4.14	4.27	4.41

Figure 3-6: Step-Up – Single Family Commodity Charges

		FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Single Fmaily	**Tier (HCF)**					
Tier 1	0 - 6.26	$ 1.52	$ 1.59	$ 1.72	$ 1.87	$ 2.02
Tier 2	6.27 - 12.52	1.89	2.00	2.18	2.39	2.61
Tier 3	12.53 - 31.03	3.02	3.08	3.18	3.30	3.40
Tier 4	31.04 - 40.28	3.35	3.41	3.54	3.67	3.78
Tier 5	40.29 +	3.85	3.95	4.13	4.33	4.50

Although utilities are not equal, it is common to examine comparisons between similar or neighboring utilities. Figure 3-7 compares an average Glendale single-family residential user (19 HCF) with the current rate structure and the proposed 2012 Recommended rates against four neighboring utilities.

Figure 3-7: Monthly Bill Comparison



Multi-Family Rate Impacts

The budget based rate analysis of multi-family complexes results in a cost of service analysis that varies the cost per dwelling unit, rather than total water demand. This modified structure will target efficient use of water (extrapolated over each dwelling unit), rather than purely quantity of water. This adjustment improves the equity between users in the customer group, by reflecting the additional cost a smaller but less efficient complex can impose on the utility.

Presented below are the proposed commodity charges related to Multi-Family for both scenarios. The rate structure water allotment is per dwelling unit, not per account as they are under the existing rates. Please note, that while the recommended rates are higher by one to two cents in FYE 2012, they are lower by two to six cents in FYE 2016. This is a result of higher rate increases in later years to offset the lost revenue of the lower increase in the step up scenario.

Figure 3-8: Recommended – Multi-Family Commodity Charges

Commodity Charge		FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Multi Family	**Tier (HCF)**					
Tier 1	0 - 5.10	$ 1.63	$ 1.72	$ 1.82	$ 1.92	$ 2.05
Tier 2	5.11 - 10.20	2.93	2.98	3.03	3.08	3.13
Tier 3	10.21 +	3.43	3.52	3.61	3.70	3.81

Figure 3-9: Step-Up – Multi-Family Commodity Charges

Commodity Charge		FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Multi Family	**Tier (HCF)**					
Tier 1	0 - 5.10	$ 1.61	$ 1.69	$ 1.81	$ 1.96	$ 2.12
Tier 2	5.11 - 10.20	2.92	2.96	3.03	3.10	3.16
Tier 3	10.21 +	3.42	3.49	3.60	3.74	3.87

Commercial and Irrigation Rate Impacts

The proposed commodity rate design for commercial is a uniform rate that charges all commercial users equally. The purpose of the redesign is to ensure equity amongst commercial users. Given the variety, type and size of commercial accounts, it is consistent with industry standards to design a uniform rate structure. A general tiered rate structure would benefit small users, regardless of need and efficiency.

Presented below are the proposed commodity charges related to commercial and irrigation users for both scenarios. Please note, that while the recommended rates are higher by one cent in FYE 2012, they are lower by five to six cents in FYE 2016. This is a result of higher rate increases in later years to offset the lost revenue of the lower increase in the step up scenario.

Figure 3-10: Recommended – Commercial and Irrigation Commodity Charges

Commodity Charge	FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Commercial					
Uniform	$ 2.69	$ 2.78	$ 2.87	$ 2.97	$ 3.08
Irrigation					
Uniform	$ 2.88	$ 2.99	$ 3.09	$ 3.20	$ 3.33

Figure 3-11: Step-Up – Commercial and Irrigation Commodity Charges

Commodity Charge	FYE 2012	FYE 2013	FYE 2014	FYE 2015	FYE 2016
Commercial					
Uniform	$ 2.68	$ 2.75	$ 2.87	$ 3.00	$ 3.14
Irrigation					
Uniform	$ 2.87	$ 2.95	$ 3.08	$ 3.24	$ 3.40

Appendix

The following figures provide additional detail and background information related to the water report.

Appendix A: Possible Impact Related to Lack of Capital Improvement Project Funding

CIP		Started	Not Started/ Critical	Not Started/ Deferrable	Category	Criticality	Impact if Deferred
12006	Superfund Gln Treat Plt Transactn'l Costs	X			Regulatory Compliance	14	Loss of 7250 AFY, 29% water supply, all local; EPA-mandated Superfund cleanup violation
12839	Phase III Chromium 6 Treatment	X			-	-	Grant-funded Chrome removal study would stop, violation of grant terms, chrome levels in water will rise
13282	Water GIS Update & Development	X			Identified Improvement	8	Maps & Records lapse, bad records leads to unsafe field working conditions, inability to respond to emergencies.
13345	Rockhaven Well	X			Identified Improvement	-	Local supply of 700 AFY (about 10% of supply) not available, must purchase high cost MWD instead; adjudicated rights in Verdugo Basin at risk of forfeiture.
14012	Electric Operations Manual	X			Failure	23	Suspended at near completion renders manual useless; no universal access to critical operations information for routine O&M and emergency response
14340	Glorietta Park Pump Station Valving	X			Failure	23	Can't safely operate GPPS, one of largest in system, loss of reliable supply to north Glendale
14341	Glenoaks 1666 Water System	X			Identified Improvement	-	Water quality is highly challenged & cannot be controlled w/o significant year-round flushing; water loss/wasted, reliability reduced if have to remove from service
14381	Park Manor Reservoir Improvements		X		Failure	24	Serious structural problems w/columns & roof, only backup to GPPS; collapse will put it out of service, no water to north Glendale
13347	SCADA System MMI & PLC Upgrade	X			Failure	21	Old SCADA has failed, no spare parts, can't monitor & control system; system outages won't be detected, pumps will overheat, intrusions will go undetected, increased manual checks but no manpower to do so.
13341	Electrical Modifications to Park Manor		X		Failure	18	Pumps won't operate if antiquated controls fail, no spare parts; no water to north Glendale
13365	Valve Automation at Pump Stations		X		Identified Improvement	-	Inability to control system; over pressurization, main breaks, loss of water supply, cannot respond to emergencies, increased labor costs to monitor and control valves manually
13759	Replace Diederich Pump #1			X	Identified Improvement	-	Most inefficient pump in system, one of the largest; possible pump failure, high electrical costs due to inefficiency.
13768	James Rez Turbine Controls #1 & #2 Upgrade			X	Failure	12	Inability to operate turbines which generate electricity, which reduces water pumping costs; result will be increased energy costs to pump water, increase in carbon footprint
14364	Water Energy Management System		X		Predicted Failure	1	Additional $300,000 per year in electrical energy costs due to inefficient pump protocols, inability to meet demand response requirements resulting in a surcharge on energy cost; pumping at worst time of day when rates are high; inefficient storage, reduced reliability
13809	Treatment Improvements at Glorietta Wells	X			Regulatory Compliance	-	Violation & fines of Stage II Disinfection By Products regulation; loss of 1000 AFY of local supply which would have to be replaced with expensive MWD purchased water; risk of forfeiture of Verdugo Basin water rights.
13719	Slope and Road Repair @ San Luis Rey Tanks	Close out			Failure	23	Tanks are no longer in service, need to be demolished; liability to City in present state ,
12855	Rehab/ Replace Diederich Main	X			Failure	25	No backup to City's main reservoir/pipeline; old pipeline leaks & valves inoperable if earthquake or age breaks line, 60% of Glendale out of water.
13783	Ben Lomond			X	Failure	19	1920s-era pipes heavily tuberculated, fire flows at 10% of required, structural fires cannot be fought; water quality is very poor, lots of red water, low residuals, possible health dept. violations & fines.
13801	Adams Hill Water Main Replacement			X	Failure	23	1920s-era pipes heavily tuberculated, fire flows at 10% of required, structural fires cannot be fought; water quality is very poor, lots of red water, low residuals, possible health dept. violations & fines.
13810	Automatic Flushing Units	X			-	-	Water quality is very poor; manual flushing is manpower-intensive, possible health dept. violations & fines.
13817	Flower, Sonora & Grandview St. Extension		X		Regulatory Compliance	9	1920s-era pipes heavily tuberculated, fire flows at 10% of required, structural fires cannot be fought; water quality is very poor, lots of red water, low residuals, possible health dept. violations & fines.
14363	Verdugo Pk Wells PU System			X	Identified Improvement	-	Pick up system loses pumped water to aquifer, lost resource, must purchase more expensive MWD water; water quality violations due to poor quality of pick up system water leads to possible violations & fines.
13561	Advanced Meter Infrastructure Improvements	X			-	-	Project implementation nearing close out; stopping now produces no/few direct benefits as business case benefits cannot be yet realized.
14349	Maryland Mini Park Recycled Water Extension	X *(Funded by Parks Dept.)*			-	-	Project funded by Parks at no cost to GWP Water; without project, irrigation would be met by expensive MWD potable water, reducing reliability and supply.
13802	Cityworks Computerized Maint. Mgmt. System	X			Predicted Failure	13	Without City Works, no means to issue and track work orders for virtually every function within GWP Water from pump maintenance to water quality sampling to maintaining the AMI water meter infrastructure; inability to track costs, labor and materials resulting in waste and poorly maintained system.