FINAL REPORT

City of Pleasanton

Comprehensive Local Wastewater Collection System Rate Study

July 2015

Table of Contents

Executive Summary
Introduction 1
Overview of the Rate Study Process 1
Key Rate Study Results 2
Summary of the Revenue Requirement Analysis 2
Summary of the Cost of Service Analysis 6
Summary of the Present and Proposed Rate Designs 7
Summary of the Rate Study 8

1 Introduction and Overview
1.1 Introduction 9
1.2 Goals and Objectives 9
1.3 Overview of the Rate Study Process 10
1.4 Organization of the Study 10
1.5 Summary 10

2 Overview of the Wastewater Rate Setting Principles
2.1 Introduction 11
2.2 Generally Accepted Rate Setting Principles 11
2.3 Types of Utilities 11
2.4 Determining the Revenue Requirement 12
2.4.1 Public Utilities 12
2.4.2 Private Utilities 13
2.5 Analyzing Cost of Service 13
2.6 Designing Wastewater Rates 14
2.7 Economic Theory and Rate Setting 14
2.8 Summary 14

3 Development of the Revenue Requirements
3.1 Introduction 15
3.2 Collection Versus Treatment Services 15
3.3 Determining the Revenue Requirement 15
3.3.1 Establishing a Time Frame and Approach 15
3.3.2 Projecting Rate and Other Miscellaneous Revenues 16
3.3.3 Projecting Operation and Maintenance Expenses 17
3.3.4 Projecting Capital Funding Needs and Transfer Payments 17
3.3.5 Projection of Debt Service 21
3.3.6 Change in Working Capital 21
3.3.7 Summary of the Revenue Requirements 21

3.3.8 Rate Adjustments / Rate Transition 23
3.4 Consultant's Conclusions 24
3.5 Summary 24

4 Development of the Cost of Service Analysis
4.1 Introduction 25
4.2 Objectives of a Cost of Service Study 25
4.3 Determining the Customer Classes of Service 25
4.4 General Cost of Service Procedures 26
4.4.1 Functionalization of Costs 26
4.4.2 Classification of Costs 26
4.4.3 Development of Allocation Factors 27
4.5 Summary of the Cost of Service Analysis 27
4.6 Consultant's Conclusions and Recommendations 28
4.7 Summary 29

5 Development of the Rate Designs
5.1 Introduction 30
5.2 Rate Design Criteria and Considerations 30
5.3 Summary of the Prior Recommendations 30
5.4 Review of the City's Present and Proposed Residential Rates 31
5.5 Review of the City's Present and Proposed Commercial Rates 33
5.6 Review of the City's Present and Proposed Industrial Rates 34
5.7 Summary of the Local Wastewater Collection Rate Study 35

Technical Appendix

Executive Summary

Introduction

HDR was retained by the City of Pleasanton (City) to conduct a comprehensive local collection wastewater 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. The financial plan is designed to meet the City's operation and maintenance (O&M) needs and the capital improvement program for the local wastewater collection system. This study determined the adequacy of the existing local wastewater rates and provides the framework and cost justification for any needed future adjustments.

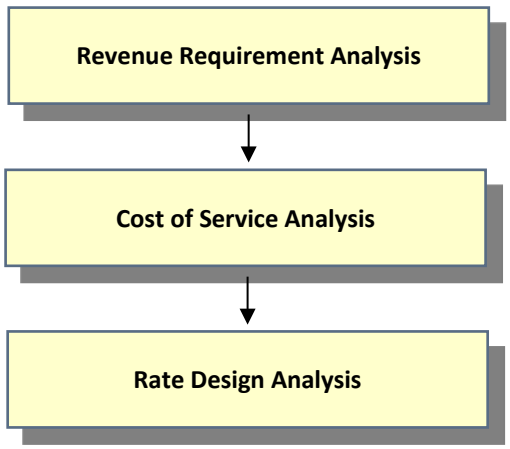
> *"This study determined the adequacy of the existing local wastewater rates and provides the framework for any needed future adjustments."*

The City owns and operates a wastewater collection system. Treatment of the wastewater is provided by a regional treatment facility. The findings, conclusions and recommendations from this study are solely related to the City's wastewater collection system.

Overview of the Rate Study Process

A comprehensive wastewater 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 Wastewater Rate Analyses



Compares the revenues to the expenses of the utility to determine the overall rate adjustment required

Allocates the revenue requirement to the various customer classes of service in a "fair and equitable" manner

Considers both the level and structure of the rate design to collect the target level of revenues

The above framework for reviewing and evaluating rates was utilized for the City's study.

Key Rate Study Results

Based on the technical analysis undertaken as part of this study, the following findings, conclusions, and recommendations were noted.

- 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 for the local collection utility are projected to increase at inflationary levels with no changes to levels of service or anticipated extraordinary expenses.
- The City has a number of replacement capital projects in the future and the funding of these projects was one of the primary drivers behind the results and the recommendations for the proposed rate adjustments.
- Annual rate adjustments over the FY 2016 – FY 2020 time period are needed to support the operating and capital needs of the wastewater.
- The FY 2016 rate adjustment includes a previously approved inflationary adjustment of 2.5% effective July 1, 2015 and a 3.0% increase effective October 1, 2015, for a total FY revenue increase of 4.8% and rate increase of 5.5%
- Annual Consumer Price Index adjustments are proposed on July 1, of each subsequent year and the study has assumed a rate of 2.5% for purposes of projecting the necessary rate increases.
- Under the proposed financial plan, no long-term debt will be issued and the City's local collection wastewater utility will be debt free starting in FY 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, it is recommended that no adjustments to the cost/rate relationships between the classes of service be made at this time. All customer classes of service (rates) were adjusted equally (on a percentage basis).
- 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 approximately $0.73/bi-month/year.

Summary of the Revenue Requirement Analysis

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

For this study, the revenue requirement was developed for the budget plus a five-year projected time period (FY 2015 - 2020). As a practical matter, a multi-year time frame is

recommended in an attempt 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. 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 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 rate increases 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 the current investment in plant being depreciated or "losing" its useful life. Therefore, this portion of plant investment needs to be replaced to maintain the existing level of infrastructure (and service levels). However, it must be kept in mind that, in theory, 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.

> *"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."*

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

- Sewer Replacement Fund
- Sewer Expansion Fund

The sewer 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	$1,250	$1,500	$1,750	$2,000	$2,000	$2,100
Expansion Capital Projects	0	0	0	0	0	0
Total CIP Funded From Rates	**$1,250**	**$1,500**	**$1,750**	**$2,000**	**$2,000**	**$2,100**

As a point of reference, the City's annual depreciation expense is approximately $2.9 million (2014). This financial plan has placed the City's rate funding for CIP at $2.1 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. $2.8 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. However, as can be seen, this financial plan has strengthened the City's "pay-as-you-go" funding for capital projects.

Given a projection of operating and capital expenses a summary of the 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 City Revenue Requirement Analysis ($000)						
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Sources of Funds -						
Rate Revenues	$3,895	$3,934	$3,973	$4,013	$4,053	$4,094
Misc. Revenues	168	170	172	179	186	187
Total Sources of Funds	**$4,062**	**$4,103**	**$4,145**	**$4,192**	**$4,239**	**$4,281**
Applications of Funds –						
Operation & Maint. Exp.	$2,593	$2,671	$2,751	$2,834	$2,919	$3,006
Total Transfers (CIP)	1,250	1,500	1,750	2,000	2,000	2,100
Net Debt Service	183	0	0	0	0	0
Change in Working Capital	36	120	(35)	(213)	(138)	(165)
Total Revenue Requirement	**$4,062**	**$4,291**	**$4,466**	**$4,621**	**$4,781**	**$4,941**
Balance/(Defic.) of Funds	$0	($187)	($320)	($429)	($542)	($661)
Defic. as a % of Rate Rev.	0.0%	4.7%	8.1%	10.7%	16.4%	16.1%
Proposed Rate Adjustments -						
Annual CPI Adjustments [1]	0.0%	2.5%	2.5%	2.5%	2.5%	2.5%
Other Rate Adjustments [2]	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%
Total Proposed Revenue Adjustment	**0.0%**	**4.8%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**

[1] – CPI adjustment effective July 1 of each year

[2] – Rate Adjustment effective October 1, 2015

[3] – The FY 2016 revenue adjustment reflects the 2.5% CPI adjustment July 1, 2015 and the 3.0% rate adjustment effective October 1, 2015 for an annual revenue increase of 4.8% and rate adjustment of 5.5%

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 includes 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 "Balance/(Deficiency) 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 16.1%.

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 rates.

Table ES–3 Summary of the City Rate Transition Plan and Residential Bill Impacts [1]						
	Present Bill [2]	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Bi-Monthly Residential Bill -	$24.46					
Proposed Rate Adjustment [3]		3.0%	2.5%	2.5%	2.5%	2.5%
Mthly Bill After Rate Adj. [4]		$25.19	$25.82	$26.47	$27.13	$27.81
$ Change/Bi-Month		$0.73	$0.63	$0.65	$0.66	$0.68
Cumulative Bi-Mthly Change		$0.73	$1.36	$2.01	$2.67	$3.35

[1] – Bi-Monthly bill reflects only the local collection system portion of a customer's wastewater bill

[2] – The City has previously adopted a CIP adjustment effective July 1, 2015

[3] – The FY 2016 rate adjustment is effective October 1, 2015. CPI adjustment is effective July 1, 2015 of each year

[4] – Bi-Monthly (i.e. 2 month) bill reflects only the local collection system portion of a customer's wastewater bill

As can be seen, the current bi-monthly residential bill for the local wastewater collection services is $24.46/bi-month. With the proposed adjustments, the impacts will be approximately $0.73/bi-month annual adjustments. Cumulatively, over the five year period the residential bill is projected to go from $24.46/bi-month to $27.81/bi-month, or a total change of $3.35/bi-month.

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). 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 are 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.
- 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. Detailed technical exhibits of the revenue requirement analysis have been included within the Technical Appendix and can be found on Exhibits 1 – 5.

Summary of the 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. residential, commercial, etc.). 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 may impact cost allocations is the trend of declining per capita consumption for residential customers, along with the current drought conditions with California and the Bay Area. These conditions certainly have an impact upon consumptive use and cost allocations.

Given the changing usage patterns and 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 five years. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made as the results are driven by customer consumption. Given that, no adjustments in the cost relationships between the customer classes of service are recommended at this time. As a result, the overall proposed revenue/rate adjustments will be applied equally across all customer groups.

Section 4 of this report provides a detailed discussion of the cost of service analysis conducted for the City's local collection system. The Technical Appendix contains the various exhibits associated with this analysis and be found on Exhibits 6 - 13.

Summary of the Present and Proposed Rate Designs

The final step of the comprehensive rate study process is the design of local wastewater collection 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 had provided a set of recommendations related to annual rate adjustments, while the cost of service results indicated that no interclass adjustments were needed at this time. Given the above, the City's existing local wastewater collection rates were equally adjusted in each of years. The exception to this is the senior discount. The audit committee recommended a reduction in the discount from 20% to 15% which is reflected in the proposed rates. Provided below in Table ES-4 is an abbreviated summary of the present and proposed residential rates.

Table ES–4
Summary of the Proposed Residential Wastewater Local Collection Rates

	Present Rates	FY 2016 Oct. 1, 2015	FY 2017 July 1 2016	FY 2018 July 1 2017	FY 2019 July 1, 2018	FY 2020 July 1, 2019
Proposed Rate Adjustment	2.5%	3.0%	2.5%	2.5%	2.5%	2.5%
Single Family ($/Bi-Month/D.U.)						
Single-Family Residential	$24.46	$25.19	$25.82	$26.47	$27.13	$27.81
Senior Discount	21.41	21.95	22.50	23.06	23.64	21.41
Low-Income Discount	17.12	17.63	18.07	18.53	18.99	19.47

Note: A complete detail of the residential rates can be found on Table 5-2

The City has a more detailed set of residential rates for townhome, condominium and multi-family customers. In addition, the City also has rate schedules for commercial, institutional and industrial customers. Section 5 of this report provides a detailed discussion of the present and proposed local wastewater collection rates for FY 2016 – FY 2020.

Summary of the Rate Study

This completes the overview of the development of the comprehensive local wastewater collection 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. The proposed rate adjustments maintain the City's financial position to meet its financial planning objectives. A full and complete discussion of the development of the comprehensive rate study and the proposed rate adjustments 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 local collection wastewater 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. The financial plan is designed to meet the City's operation and maintenance (O&M) needs and the capital improvement program for the local wastewater collection system. This study determined the adequacy of the existing wastewater rates and provides the framework for any needed future adjustments.

The City owns and operates a wastewater collection system. Treatment of the wastewater is owned and operated by Dublin San Ramon Services District (DSRSD). DSRSD provides treatment services to the City by contract. This report has focused only on the costs and rates associated with the City's local collection system. The costs and rates for wastewater treatment are developed by DSRSD, and those treatment costs are passed through to the City's customers as a separate and distinct rate. The findings, conclusions and recommendations from this study are solely related to the City's wastewater collection system.

1.2 Goals and Objectives

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

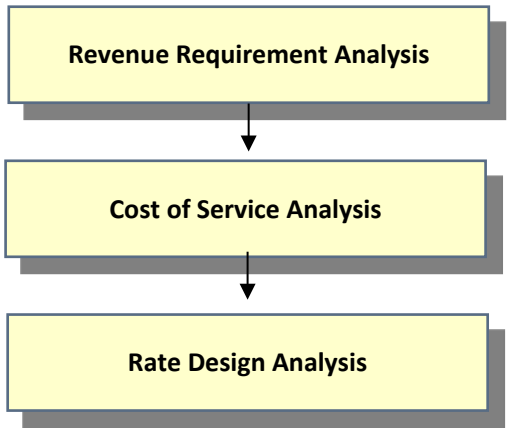
- Develop the study in a manner that is consistent with the principles and methodologies established by the Water Environment Federation (WEF), Manual of Practice No. 27, Financing and Charges for Wastewater Systems.
- In financial planning and establishing the City's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the City's system.
- 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.

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 wastewater rate study consists of three interrelated analyses. Figure 1-1 provides an overview of these analyses.

Figure 1–1
Overview of the Comprehensive Wastewater Rate Analyses



Compares the revenues to the expenses of the utility to determine the overall rate adjustment required

Allocates the revenue requirement to the various customer classes of service in a "fair and equitable" manner

Considers both the level and structure of the rate design to collect the target level of revenues

The above framework for reviewing and evaluating rates was utilized for the City's study.

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 wastewater rates. The following sections comprise the City's wastewater rate study report:

- Section 2 – Overview of Wastewater Rate Setting Principles
- Section 3 – Development of the Revenue Requirement
- Section 4 – Development of the Cost of Service Analysis
- Section 5 – Development of the Wastewater Rates

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 wastewater rate analyses prepared for the City. This report has been prepared utilizing "generally accepted" wastewater rate setting techniques. The next section of the report will provide a brief overview of the general rate setting process that was used to analyze and establish the proposed wastewater rates for the City.

2. Overview of Wastewater Rate Setting Principles

2.1 Introduction

This section of the report provides background information about the wastewater rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining a revenue requirement, the cost of service approach, and rate design. This information is useful for gaining a better understanding of the details presented in Sections 3 through 5.

2.2 Generally Accepted Rate Setting Principles

As a practical matter, 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 with "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 stockholders. 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 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 (collection, pumping, treatment, etc.). This step is largely accomplished by the utility's accounting system.

2. The functionalized costs are ***classified*** to specific cost components. Classification refers to the arrangement of the functionalized data into cost components. For example, a wastewater utility's costs are typically classified as volume, strength (BOD/TSS), or customer-related.
3. Once the costs are classified into components, they are proportionally ***allocated*** to the customer classes of service (residential, non-residential, industrial, 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 Wastewater 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 (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 can be taken into consideration.

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 wastewater utility usually incurs strength-related costs in treating high strength wastewater. It follows that the customers who have higher strength levels and create greater treatment costs should pay for those strength-related facilities in proportion to their contribution to total plant loadings. When costing and pricing techniques are refined, consumers have a more accurate picture 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 wastewater rates. These principles and techniques will become the basis for the City's comprehensive wastewater rate study.

3. Development of the Revenue Requirements

3.1 Introduction

This section describes the development of the revenue requirement analysis for City's local wastewater system. The revenue requirement analysis is the first analytical step in the comprehensive rate study process. This analysis determines the adequacy of the overall wastewater 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 utility. Typically, one of the main objectives of a rate study is to develop fair and equitable rates while attempting to minimize the impacts to the utility's customers.

3.2 Collection Versus Treatment Services

A wastewater utility provides two major wastewater functions to their customers – collection of the wastewater and the treatment of the wastewater. The City operates a collection system, but does not provide treatment. Rather, the City participates by contract in a regional treatment facility owned and operated by DSRSD. For purposes of this study, the focus is only on the collection system portion of the costs. For rate setting purposes, customers are charged two components on their bill – the City's collection system portion and the regional treatment component from DSRSD. All discussion of costs and rates within this study is related to the operation of the City's collection system.

3.3 Determining the Revenue Requirement

In developing the City's wastewater 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 local wastewater system on a financially sound and prudent basis.

> *". . . the revenue requirement analysis as developed herein assumes the full and proper funding needed to operate and maintain the City's local wastewater 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.

3.3.1 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the City's wastewater 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 wastewater revenue requirements. Table 3-1 provides a summary of the "cash basis" approach and cost components used to develop the City's wastewater revenue requirement.

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

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

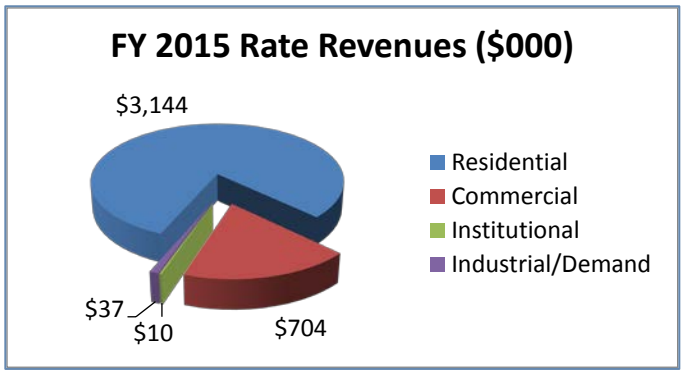
The primary financial inputs in the development of the revenue requirement were the City's FY 2015 budget documents, 2014 billed customer and consumption data, and the City's capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development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

3.3.2 Projecting Rate and Other Miscellaneous Revenues

The first step in developing the revenue requirement was to develop a projection of the wastewater rate revenues, at present rate levels. In general, this process involved developing projected billing units for each customer group. The billing units for each customer group were then multiplied by the applicable current local wastewater 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 vast majority of the City's rate revenues are derived from residential customers. Currently, residential includes single-family homes, townhomes, condominiums and multi-family

customers. Each of these types of customers has a separate and distinct rate. In addition to these rates, the City also has a senior discount rate and a low-income discount rate for residential customers. The senior and low-income discount rates[2] are different rates and levels of discount. The City also serves a variety of commercial and institutional customers. The City has a number of different rates for these commercial and institutional customers to reflect differences in wastewater contributions by these customers. In total, and at currently adopted rate levels, the City's wastewater system is projected to receive approximately $3.9 million in rate revenue in FY 2015. Over time, the study has assumed a conservative level customer growth (1%/year). By FY 2020, the rate revenues, assuming no rate adjustments, are projected to be approximately $4.1 million.



In addition to rate revenues, the local wastewater system also receives miscellaneous revenues. To fund the senior/low-income discount program the City's General Fund makes a transfer of funds to the wastewater utility. The City also receives other miscellaneous revenue sources. In total, the City is projected to annually receive approximately $168,000 in miscellaneous revenues over the projected planning horizon. This amount is anticipated to increase slightly over the projected five year time period.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the City wastewater utility has total projected revenues of approximately $4.1 million in FY 2015, increasing to approximately $4.3 million in FY 2020.

3.3.3 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the regional system to operate and maintain the existing plant in service and to pay for regional wastewater treatment expenses. For purposes of this study, O&M was grouped into a single line item account and projected over the five year period at an assumed annual inflation rate of 3.0%. The total operation and maintenance expenses for the wastewater utility are projected to be approximately $2.6 million in FY 2015. Over the five year planning horizon, the total O&M expenses are projected to increase to approximately $3.0 million by FY 2020.

3.3.4 Projecting Capital Funding Needs and Transfer Payments

A key component in the development of the wastewater 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

[2] Under Proposition 218, a utility may not provide subsidies for senior citizens or low-income customers by increasing the wastewater 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.

is an important issue for all wastewater utilities and is not just a local issue or 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 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 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:

- Sewer Replacement Fund
- Sewer Expansion Fund

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

SEWER REPLACEMENT FUND -

The sewer 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 sewer replacement fund.

Table 3–2 Summary of the Sewer Replacement Fund ($000)						
	FY 2015	**FY 2016**	**FY 2107**	**FY 2018**	**FY 2019**	**FY 2020**
Beginning Balance -	**$7,878**	**$3,533**	**$3,602**	**$4,419**	**$4,590**	**$5,281**
Sources of Funds – Replacement						
New Bonds	$0	$0	$0	$0	$0	$0
Rate Funded Capital	1,250	1,500	1,750	2,000	2,000	2,100
Other Revenue/Interest Income	12	9	11	17	26	29
Total Replacement Funds Avail.	$9,140	$5,042	$5,363	$6,437	$6,616	$7,410
Replacement Capital Projects –						
Annual Main. Replac./Improv.	$992	$514	$527	$921	$946	$1,142
EALS/EARS Pump Station	3,499	0	0	0	0	0
Other Planned Improvements	0	614	100	542	0	0
Other Replacement Projects	1,116	312	317	384	389	406
Total Replace. Capital Projects	$5,607	$1,440	$944	$1,847	$1,335	$1,548
Transfer to Debt	$0	$0	$0	$0	$0	$0
Ending Balance	**$3,533**	**$3,602**	**$4,419**	**$4,590**	**$5,281**	**$5,862**

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 4a of the Technical Appendices.

While the total amount of project may vary from year to year, this sewer replacement funding plan has attempted to provide a consistent funding source for the replacement fund. In this case, the wastewater utility's rates will annually fund an amount ranging from $1.25 million to $2.1 million. As a point of reference, the City's annual depreciation expense is approximately $2.8 million. A desirable 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.

SEWER EXPANSION FUND –

The City also has certain expansion or capacity related projects. The City has an Expansion Fund to track and fund these projects. Provided below in Table 3-3 is a summary of the Sewer Expansion Fund and the expansion-related projects.

Table 3–3 Summary of the Sewer Expansion Fund ($000)						
	FY 2015	**FY 2016**	**FY 2107**	**FY 2018**	**FY 2019**	**FY 2020**
Beginning Balance -	**$2,171**	**$29**	**$31**	**$240**	**$350**	**$461**
Sources of Funds – Expansion						
New Bonds	$0	$0	$0	$0	$0	$0
Connection Fees	158	159	161	163	164	166
Other Revenue/Interest Income	0	100	100	1	2	3
Total Expansion Funds Avail.	$2,329	$288	$292	$404	$516	$630
Expansion Capital Projects –						
Meadowlark Sewer Siphon	$583	$205	$0	$0	$0	$0
EALS/EARS Pump Station	1,161	0	0	0	0	0
Del Valle Pkwy Nevada St.	482	0	0	0	0	0
Other Expansion Projects	75	51	53	54	56	57
Total Replace. Capital Projects	$2,301	$257	$53	$54	$56	$57
Transfer to Debt	$0	$0	$0	$0	$0	$0
Ending Balance	**$29**	**$31**	**$240**	**$350**	**$461**	**$572**

As shown in Table 3-3, these expansion-related projects are primarily funded from connection fees and existing expansion fund reserves. None of these projects are funded from rate revenues. As a result, there is no impact to user rates from these SDC-funded capital projects. A more detailed exhibit of the expansion fund can be found on Exhibit 4b 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 Rate Funded CIP ($000)						
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
Replacement Capital Projects	$1,250	$1,500	$1,750	$2,000	$2,000	$2,100
Expansion Capital Projects	0	0	0	0	0	0
Total CIP Funded From Rates	**$1,250**	**$1,500**	**$1,750**	**$2,000**	**$2,000**	**$2,100**

As noted previously, the City's annual depreciation expense is approximately $2.9 million (2014). This financial plan has placed the City's rate funding for CIP at $2.1 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. $2.8 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.

3.3.5 Projection of Debt Service

The City currently has a minor amount of outstanding debt and the remaining debt service payment is in FY 2015. No new long-term debt issues are assumed over the projected five year period.

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

3.3.6 Change in Working Capital

The final component of the revenue requirements is change in working capital (reserves). The City has a maintenance and operations (M&O) fund and a replacement (R&I) fund. The revenue requirements developed during this time period assume no change in working capital or the use of these funds to mitigate the need for any rate adjustments.

3.3.7 Summary of the Revenue Requirements

Given the above projections of revenues and expenses, a summary of the wastewater revenue requirement analysis for the City 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. Presented below in Table 3-5 is a summary of the City's projected wastewater revenue requirement. Detailed exhibits of this analysis can be found in the Technical Appendices (Exhibits 1 – 5).

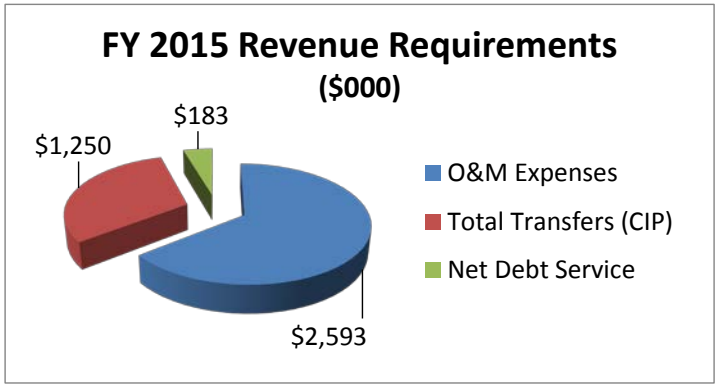
Table 3–5 Summary of the City Revenue Requirement Analysis ($000)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Sources of Funds -						
Rate Revenues	$3,895	$3,934	$3,973	$4,013	$4,053	$4,094
Misc. Revenues	168	170	172	179	186	187
Total Sources of Funds	**$4,062**	**$4,103**	**$4,145**	**$4,192**	**$4,239**	**$4,281**
Applications of Funds –						
Operation & Maint. Exp.	$2,593	$2,671	$2,751	$2,834	$2,919	$3,006
Total Transfers (CIP)	1,250	1,500	1,750	2,000	2,000	2,100
Net Debt Service	183	0	0	0	0	0
Change in Working Capital	36	120	(35)	(213)	(138)	(165)
Total Revenue Requirement	**$4,062**	**$4,291**	**$4,466**	**$4,621**	**$4,781**	**$4,941**
Balance/(Defic.) of Funds	$0	($187)	($320)	($429)	($542)	($661)
Defic. as a % of Rate Rev.	0.0%	4.7%	8.1%	10.7%	16.4%	16.1%
Proposed Rate Adjustments -						
Annual CPI Adjustments [1]	0.0%	2.5%	2.5%	2.5%	2.5%	2.5%
Other Rate Adjustments [2]	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%
Total Proposed Revenue Adjustment	**0.0%**	**4.8%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**

[1] – CPI adjustment effective July 1 of each year

[2] – Rate Adjustment effective October 1, 2015

[3] – The FY 2016 revenue adjustment reflects the 2.5% CPI adjustment July 1, 2015 and the 3.0% rate adjustment effective October 1, 2015 for an annual revenue increase of 4.8% and rate adjustment of 5.5%

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 includes 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 "Balance/(Deficiency) 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 20.1%.



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 their wastewater operating and capital 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 (blue band) which are 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).

3.3.8 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 rate impacts.

Table 3-6
Summary of the City Rate Transition Plan and Residential Bill Impacts [1]

	Present Rates [2]	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Bi-Monthly Residential Bill -	$24.46					
Proposed Rate Adjustment [3]		3.0%	2.5%	2.5%	2.5%	2.5%
Mthly Bill After Rate Adj. [4]		$25.19	$25.82	$26.47	$27.13	$27.81
$ Change/Bi-Month		$0.73	$0.63	$0.65	$0.66	$0.68
Cumulative Bi-Mthly Change		$0.73	$1.36	$2.01	$2.67	$3.35

[1] – Bi-Monthly bill reflects only the local collection system portion of a customer's wastewater bill

[2] – The City has previously adopted a CIP adjustment effective July 1, 2015

[3] – The FY 2016 rate adjustment is effective October 1, 2015. CPI adjustment is effective July 1, 2015 of each year

[4] – Bi-Monthly (i.e. 2 month) bill reflects only the local collection system portion of a customer's wastewater bill

"Cumulatively, the residential bill is projected to go from $24.46/bi-month to $27.81/bi-month, or a total change of $3.35/bi-month, transitioned over a five-year period. "

The financial plan shown above has indicated the need for annual rate adjustments which exceed inflationary levels. 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 $24.46/bi-month. With the proposed adjustments, the impacts will be approximately $0.73/bi-month annual adjustments. Cumulatively, the residential bill is projected to go from $24.46/bi-month to $27.81/bi-month, or a total change of $3.35/bi-month, transitioned over a five-year period.

3.4 Consultant's Conclusions

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). 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 need to adequately fund renewal and replacement projects.
- 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.

3.5 Summary

This section of the report has provided a discussion of the City's wastewater revenue requirement analysis. The revenue requirement analysis developed a financial plan to support the City's operating and capital needs. The next section will discuss the cost of service analysis developed for City's wastewater system.

4. Development of the Cost of Service Analysis

4.1 Introduction

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the City's local wastewater collection system. This section will provide an overview of the 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 revenue requirement was utilized in the development of the cost of service analysis.

4.2 Objectives of a Cost of Service Study

There are two primary objectives in conducting a wastewater cost of service study:

- Allocate the City's 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 ensure that proposed rates are designed such that it properly reflects the costs incurred by the City. For example, a wastewater utility typically incurs costs related to flow (volume), strength, and customer cost components. Each of these types of costs may be collected in a slightly different manner as to allow for the development of rates that collect costs in the same manner as they are incurred.

4.3 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:

- Residential
- Commercial
- Institutional
- Industrial/Demand

Residential customers include single-family residences, townhouses, condominiums and multi-family. These customers pay a flat monthly rate while all other non-residential customers pay a volumetric charge with a minimum bill associated with it.
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.

4.4 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the City's 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 wastewater cost of service study conducted for the City, and the specific steps taken within the analysis.

4.4.1 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., collection, pumping, etc.) Within this study, there was a limited amount of functionalization of the cost data.

4.4.2 Classification of Costs

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

- **Volume Related Costs:** Volume related costs are those costs which tend to vary with the total quantity of wastewater collected and treated.
- **Strength Related Costs:** Strength related costs are those costs associated with the additional handling and treatment of high "strength" wastewater. Strength of wastewater is typically measured in biochemical oxygen demand (BOD) and total suspended solids (SS). Increased levels of BOD or SS generally equate to increased treatment costs.
- **Customer Related Costs:** Customer-related costs vary with the addition or deletion of a customer or a cost which is a function of the number of customers

Terminology of a Wastewater Cost of Service Analysis

Functionalization – The arrangement of the cost data by functional category (e.g. collection, pumping, etc.).

Classification – The assignment of functionalized costs to cost components (e.g. volume, strength, and customer related).

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

Volume Costs – Costs that are classified as volume related vary with the total flow of wastewater (e.g. power for pumping).

Strength Costs – Costs classified as strength related refer to the wastewater treatment function. Typically, strength-related costs are further defined as biochemical oxygen demand (BOD) and suspended solids (SS). Different types of customers may have high wastewater strength characteristics and high strength wastewater costs more to treat. Treatment facilities are often designed and sized around meeting these costs.

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

Direct Assignment – Costs that can be clearly identified as belonging to a specific customer group or group of customers.

served. Customer related costs typically include the costs of billing, collecting, and accounting.

- **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.

4.4.3 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 classified costs were allocated to the various customer groups using the following allocation factors.

- **Volume Allocation Factor:** Volume-related costs are generally allocated on the basis of contribution to wastewater flows. Wastewater flows were calculated based on flow estimates for the residential customers and volumetric billing information of the commercial customers.
- **Strength Allocation Factor:** Strength-related costs are classified between biochemical oxygen demand (BOD) and suspended solids (SS). Both of these types of costs are allocated to the various classes of service based upon the assumed domestic strength level of 200 mg/l for BOD and SS.
- **Customer Allocation Factor:** Customer costs within the cost of service analysis are allocated to the various customer classes of service based upon their respective customer counts. Two types of customer allocation factors were developed; actual and weighted. The actual customer allocation factor assumes that there is no disproportionate cost associated with serving a customer (e.g. postage for bills is the same regardless of the size or usage of the customer). In contrast, a weighted customer allocation factor assumes that there is some disproportionality associated with serving different types of customers and attempts to estimate the level of difference in serving the customers.
- **Revenue Related Allocation Factor:** The revenue related allocation factor was developed from the projected rate revenues for FY 2016.

4.5 Summary of the Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the City's plant asset records and operating expenses. The functionalized plant and expense accounts were then classified into their various cost components. The individual classification totals were then allocated to the various customer groups based on the appropriate allocation factors. The allocated expenses for each customer group were then aggregated to determine each customer group's overall revenue responsibility.

Table 4–1 Summary of the Cost of Service Analysis ($000s)				
Class of Service	**Present 2016 Rate Revenues**	**Allocated Costs**	**$ Difference**	**% Difference**
Residential	$3,175	$3,386	($211)	6.6%
Commercial	711	681	30	-4.2%
Institutional	11	12	($1)	12.3%
Industrial/Demand	37	42	($5)	12.2%
Total	**$3,934**	**$4,121**	**($187)**	**4.8%**

The cost of service study attempted to align the operating and capital costs to each customer class with their respective benefit (proportional allocation). 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".[3] 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.

4.6 Consultant's Conclusions and Recommendations

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 may impact cost allocations is the trend of declining per capita consumption for residential customers, along with the current drought conditions with California and the Bay Area. These conditions certainly have an impact upon consumptive use and cost allocations.

Given the changing usage patterns and 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 few years. As the City continues to monitor rates and cost of service results through future studies, cost of service adjustments may be made as the results are driven by customer consumption. Given that, no adjustments in the cost relationships between the customer classes of service are recommended at this time. As a result, the overall proposed revenue/rate adjustments will be applied equally across all customer groups.

[3] In this study, the overall deficiency for FY 2016 is -0.6%. Using this guideline, a class of service may be considered within the range of reasonableness if their adjustment is in the range of –5.6% to + 4.4%.

4.7 Summary

This section of the report has provided a summary of the cost of service analysis developed for the City. This analysis was prepared using generally accepted cost of service techniques. The next section of the report will review the present and proposed wastewater collection rates for the City.

5. Development of the Rate Designs

5.1 Introduction

The final step of the City's comprehensive local wastewater 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.

5.2 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)

Many contemporary rate economists and regulatory agencies recognize the last consideration, 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 usage or volumetric contributions 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.

5.3 Summary of the Prior Recommendations

The revenue requirement analysis was used to determine the adequate and prudent level of funding needed to operate the wastewater collection system of the City. 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 to not make any interclass adjustments. Given that, the rates all customers should be increased equally (i.e. receive equal percentage rate adjustments).

5.4 Review of the City's Present and Proposed Residential Rates

Provided below in Table 6-1 is a summary of the City's present residential wastewater collection rates. As noted previously, the City also charges for wastewater treatment, and those rates are established by the regional wastewater treatment provider (DSRSD).

> *"In summary, for purposes of designing and proposing rates, all rates will be adjusted equally and all customers will receive equal percentage rate adjustments."*

Residential customers are charged on a flat dwelling unit basis and residential is segregated by single-family, townhouses, condominiums and multi-family. The rates shown in Table 5-1 are bi-monthly rates (i.e. the charge for a 2-month period).

Table 5–1
Summary of the Present Residential Wastewater Local Collection Rates

Rate Description	Present Rate [1]
Single-Family ($/Bi-Month/Dwelling Unit)	
Single-Family Residential	$24.46/Bi-Month/D.U.
2nd Unit	12.80
Senior Discount	19.57
Low-Income Discount	17.12
2nd Unit Senior Discount	10.24
2nd Unit Low-Income Discount	8.96
Single-Family Residential – Ruby Hill	4.32
Senior Discount – Ruby Hill	3.46
Low-Income Discount – Ruby Hill	3.02
Townhouse ($/Bi-Month/Dwelling Unit)	$24.46/Bi-Month/D.U.
Condominiums ($/Bi-Month/Dwelling Unit)	
Condominium	$16.79/Bi-Month/D.U.
Senior Discount	13.43
Low-Income Discount	11.75
Multi-Family ($/Bi-Month/Dwelling Unit)	
Base Charge	$12.80/Bi-Month/D.U.
Senior Discount	10.24
Low-Income Discount	8.96

[1] –Local wastewater collection rates effective July 1, 2015

As can be seen in Table 5-1, the City also has rates for a senior discount and a low-income discount. Provided below in Table 5-2 is a summary of proposed residential wastewater local

collection rates by customer type and fiscal year. The rates in Table 5-2 are stated as bi-monthly rates.

Table 5–2
Summary of the Proposed Residential Wastewater Local Collection Rates

	Present Rates	FY 2016 Oct. 1, 2015	FY 2017 July 1 2016	FY 2018 July 1 2017	FY 2019 July 1, 2018	FY 2020 July 1, 2019
Proposed Rate Adjustment		**3.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Single Family ($/Bi-Month/D.U.)						
Single-Family Residential	$24.46	$25.19	$25.82	$26.47	$27.13	$27.81
2nd Unit	12.80	13.09	13.42	13.76	14.10	14.45
Senior Discount	19.57	21.41	21.95	22.50	23.06	23.64
Low-Income Discount	17.12	17.63	18.07	18.53	18.99	19.47
2nd Unit Senior Discount	10.24	11.13	11.41	11.70	11.99	12.28
2nd Unit Low-Income Discount	8.96	9.16	9.39	9.63	9.87	10.12
S.F. Residential – Ruby Hill	4.32	12.60	25.82	26.47	27.13	27.81
Senior Discount – Ruby Hill	3.46	10.71	21.95	22.50	23.06	23.64
Low-Income Discount – Ruby Hill	3.02	8.82	18.07	18.53	18.99	19.47
Townhouse ($/Bi-Month/D.U.)	$24.46	$25.19	$25.82	$26.47	$27.13	$27.81
Condominium ($/Bi-Month/D.U.)						
Condominium	$16.79	$17.17	$17.60	$18.04	$18.49	$18.95
Senior Discount	13.43	14.59	14.96	15.33	15.72	16.11
Low-Income Discount	11.75	12.02	12.32	12.63	12.94	13.27
Multi-Family ($/Bi-Month/D.U.)						
Base Charge	$12.80	$13.18	$13.51	$13.85	$14.20	$14.56
Senior Discount	10.24	11.20	11.48	11.77	12.07	12.38
Low-Income Discount	8.96	9.23	9.46	9.70	9.94	10.19

As can be seen, the level of the rate adjustments shown in Table 5-2 is based upon the findings and conclusions from the revenue requirement study. The annual adjustments have been applied equally to all classes of service based upon the findings and conclusions from the cost of service analysis. The exception to this is the senior discount rates. The audit committee recommended that the senior discount be reduced from 20% to 15% which has been reflected in the proposed rates.

Ruby Hill

Currently, the customers that the City serves in the Ruby Hill area pay an administration fee. The City of Livermore, by contract, provides sewage treatment services to the Ruby Hill area. Livermore does not provide, however, the collection system services to this area. Instead, the City of Pleasanton is responsible for operating and maintaining the local collection system within the Ruby Hill area. To date, the City has not charged for these services and must in order to have fair and equitable rates among all customers in the utility. Starting in FY 2015, on October 1, the customers will begin to transition to paying the full single family residential rate over a two year period.

Transitioning Sewer Billing to the Property Tax Roll

The City has been reviewing the possibility of moving the residential customers' sewer charges to the annual property tax bill. At this time the City has not determined the timing of moving towards billing the sewer charges on the property tax bill. However, the City is planning on transitioning to this method by the end of the five-year rate transition period. One advantage of placing the sewer bill on the property tax roll is that City staff will update the rates one time per year and minimize the City's overall costs for bi-monthly billing, customer service related to billing questions, and mailing expenses. In addition, by placing the bill on the property tax rolls, the City will receive payments for the entire customer base and minimize the impacts of late payments and delinquent accounts. A disadvantage of this method is the City will receive revenues only two times per year. This may result in the need to increase the minimum reserve fund levels to deal with any unforeseen cost impacts between the payments from the County.

5.5 Review of the City's Present and Proposed Commercial Rates

Provided below in Table 5-3 is a summary of the City's present commercial wastewater collection rates. Similar to the residential rates, in addition to these local collection rates, the City also charges for wastewater treatment, and those rates are established by the regional wastewater treatment provider (DSRSD) and passed directly through to customers.

In contrast to the residential rates, the commercial rates are charged on a volumetric basis. The rate is comprised of a fixed charge (minimum bill) and a consumption (volumetric) charge. The volumetric charge is applied only for usage over and above 5 CCF. The consumption charges vary by the type of commercial customer. The rates shown below in Table 5-3 are bi-monthly rates (i.e. the charge for a 2-month period).

Table 5–3
Summary of the Present Commercial Wastewater Local Collection Rates

Rate Description	Present Rate [1]
Commercial	
Fixed Charge - Minimum Bill ($/Bi-Month/Acct.)	$12.80/Bi-Month/Acct.
Consumption Charge ($/CCF)	
First 5 Hundred Cubic Feet (CCF)	$0.000/CCF
Over 5 Hundred Cubic Feet (CCF)	
Auto Steam Cleaning	$1.375/CCF
Bakery	1.365
Commercial Laundry	1.375
Grocery w/ Garbage Disposal	1.320
Mortuary	1.600
Restaurants – Fast Food	1.285
Restaurants – Full Service	1.285
All Other	1.161

[1] –Local wastewater collection rates effective July 1, 2015

As can be seen, the consumption charges are differentiated by customer type. The vast majority of the City's commercial customers are charged the "All Other" commercial rate. The other large commercial category for the City is the full service restaurants. Provided below in Table 5-4 are the proposed commercial wastewater rates.

Table 5–4
Summary of the Proposed Commercial Wastewater Local Collection Rates

	Present Rates	FY 2016 Oct. 1, 2015	FY 2017 July 1 2016	FY 2018 July 1 2017	FY 2019 July 1, 2018	FY 2020 July 1, 2019
Proposed Rate Adjustment		**3.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Commercial						
Fixed Charge – Min. Bill ($/Bi-Month/Acct.)	$12.80	$13.18	$13.51	$13.85	$14.20	$14.56
Consumption Charge ($/CCF)						
First 5 CCF	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
Over 5CCF						
Auto Steam Cleaning	$1.375	$1.416	$1.451	$1.487	$1.524	$1.562
Bakery	1.365	1.406	1.441	1.477	1.514	1.552
Commercial Laundry	1.375	1.416	1.451	1.487	1.524	1.562
Grocery w/ Garbage Disposal	1.320	1.360	1.394	1.429	1.465	1.502
Mortuary	1.600	1.648	1.689	1.731	1.774	1.818
Restaurants – Fast Food	1.285	1.324	1.357	1.391	1.426	1.462
Restaurants – Full Service	1.285	1.324	1.357	1.391	1.426	1.462
All Other	1.161	1.196	1.226	1.257	1.288	1.320

Similar to residential rate designs, the rate adjustments shown in Table 5-4 are based upon the findings and conclusions from the revenue requirement study. The annual adjustments have been applied equally to all classes of service based upon the findings and conclusions from the cost of service analysis.

5.6 Review of the City's Present and Proposed Industrial Rates

Industrial customers are billed through the regional wastewater provider and passed through to the customers including the City's local wastewater rates. The summary of the present local collection system rates is provided below in Table 5-5.

Table 5–5 Summary of the Present Industrial Wastewater Local Collection Rates	
Rate Description	**Present Rate [1]**
Industrial	
Fixed Charge - Minimum Bill ($/Bi-Month/Acct.)	$2.77/Bi-Month/Acct.
Annual Loadings ($/MG)	124.95/MG
Peak Monthly Loading ($/MGD)	80,799.19/MGD

[1] –Local wastewater collection rates effective July 1, 2015

Presented below in Table 5-6 is a summary of the proposed industrial wastewater rates.

Table 5–6 Summary of the Proposed Commercial Wastewater Local Collection Rates						
	Present Rates	**FY 2016 Oct. 1, 2015**	**FY 2017 July 1 2016**	**FY 2018 July 1 2017**	**FY 2019 July 1, 2018**	**FY 2020 July 1, 2019**
Proposed Rate Adjustment		**3.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Industrial						
Fixed Charge - Minimum Bill ($/Bi-Month/Acct.)	$2.77	$2.85	$2.92	$2.99	$3.06	$3.14
Annual Loadings ($/MG)	124.98	128.73	131.95	135.25	138.63	142.10
Peak Monthly Loading ($/MGD)	80,822.84	83,247.53	85,328.72	87,461.94	89,648.49	91,889.70

5.7 Summary of the Local Wastewater Collection Rate Study

This completes the analysis for the City's local wastewater collection utility. This study has provided a comprehensive review of the City's local wastewater collection rates. Adoption of the proposed rates will allow the City to meet their current and projected local wastewater collection system financial obligations and major capital projects for the time period reviewed.

Technical Appendix

City of Pleasanton
Sewer Cost of Service Study
Exhibit 1
Revenue Requirement Summary

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues						
Rate Revenues	$3,894,900	$3,933,849	$3,973,188	$4,012,920	$4,053,049	$4,093,579
Miscellaneous Revenues	167,597	170,038	172,133	178,939	185,633	187,127
Total Revenues	**$4,062,497**	**$4,103,887**	**$4,145,321**	**$4,191,859**	**$4,238,682**	**$4,280,706**
Expenses						
Total Sewer O&M	$2,593,187	$2,670,983	$2,751,112	$2,833,645	$2,918,655	$3,006,214
Total Transfers	1,250,000	1,500,000	1,750,000	2,000,000	2,000,000	2,100,000
Net Debt Service	183,150	0	0	0	0	0
Total Change in Working Capital	36,160	119,762	(35,453)	(212,843)	(137,622)	(164,771)
Total Expenses	**$4,062,497**	**$4,290,745**	**$4,465,659**	**$4,620,802**	**$4,781,032**	**$4,941,444**
Bal/(Def) of Funds	**$0**	**($186,858)**	**($320,338)**	**($428,943)**	**($542,350)**	**($660,737)**
Balance as a % of Rate Revenues	**0.0%**	**4.7%**	**8.1%**	**10.7%**	**13.4%**	**16.1%**
Annual CPI Increases	**0.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Proposed Rate Adjustment	**0.0%**	**3.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Total Proposed Rate Adjustment	**0.0%**	**4.8%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**
Additional Revenue from Adjustment	$0	$186,858	$320,338	$428,943	$542,350	$660,737
Total Balance/(Deficiency) of Funds	$0	$0	$0	($0)	$0	$0
Additional Rate Increase Needed	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Average Residential Local Bi-Monthly Impact						
After Proposed Rate Adjustment	$24.46 [1]	$25.19	$25.82	$26.47	$27.13	$27.81
Annual $ Change	$0.60	$0.73	$0.63	$0.65	$0.66	$0.68
Debt Service Coverage Ratio						
Before Rate Adjustment	8.02	0.00	0.00	0.00	0.00	0.00
After Proposed Rate Adjustment	8.02	0.00	0.00	0.00	0.00	0.00
Sewer M&O Fund						
Beginning Cash Reserve Balance	**$4,180,740**	**$4,216,900**	**$4,336,663**	**$4,301,210**	**$4,088,366**	**$3,950,744**
Plus: To Operating Reserves	36,160	119,762	0	0	0	0
Less: Uses of Funds	0	0	(35,453)	(212,843)	(137,622)	(164,771)
Transfer to RI Fund	0	0	0	0	0	0
Ending Balance	**$4,216,900**	**$4,336,663**	**$4,301,210**	**$4,088,366**	**$3,950,744**	**$3,785,973**
Target Minimum - 180 Days of O&M	***$1,278,832***	***$1,317,197***	***$1,356,713***	***$1,397,414***	***$1,439,337***	***$1,482,517***

City of Pleasanton
Sewer Cost of Service Study
Exhibit 2
Escalation Factors

	Budget	Projected				
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
Revenues:						
Customer Growth	Budget	1.0%	1.0%	1.0%	1.0%	1.0%
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Miscellaneous Revenues	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Expenses:						
Labor	Budget	3.0%	3.0%	3.0%	3.0%	3.0%
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%
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%
Utilities	Budget	4.0%	4.0%	4.0%	4.0%	4.0%
Growth:	Budget	1.0%	1.0%	1.0%	1.0%	1.0%
Interest Earnings:	0.5%	0.5%	0.5%	0.8%	1.0%	1.0%
Revenue Bond						
Term in Years	20	20	20	20	20	20
Interest Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%

City of Pleasanton
Sewer Cost of Service Study
Exhibit 3
Revenue Requirement

	Budget	Projected					
	FY 2015	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**	Notes
Revenues							
Rate Revenues							
Residential	$3,143,890	$3,175,329	$3,207,082	$3,239,153	$3,271,544	$3,304,260	As Customer Growth
Commercial	703,925	710,964	718,074	725,254	732,507	739,832	As Customer Growth
Institutional	10,398	10,502	10,607	10,713	10,820	10,928	As Customer Growth
Industrial/Demand	36,688	37,054	37,425	37,799	38,177	38,559	As Customer Growth
Total Rate Revenues	$3,894,900	$3,933,849	$3,973,188	$4,012,920	$4,053,049	$4,093,579	
Miscellaneous Revenues							
Miscellaneous Revenues	$0	$0	$0	$0	$0	$0	As Miscellaneous Revenues
Traffic Marking	0	0	0	0	0	0	As Miscellaneous Revenues
Interest Income	10,542	10,842	10,753	15,331	19,754	18,930	Calculated
Interfund Sales	50,000	50,000	50,000	50,000	50,000	50,000	As Flat
In - Benefit Surplus / Implied Subsidy	17,055	17,396	17,744	18,099	18,461	18,830	As Miscellaneous
In - General Fund for Senior Low Income Discount	90,000	91,800	93,636	95,509	97,419	99,367	As Miscellaneous
Total Miscellaneous Revenues	$167,597	$170,038	$172,133	$178,939	$185,633	$187,127	
Total Revenue	**$4,062,497**	**$4,103,887**	**$4,145,321**	**$4,191,859**	**$4,238,682**	**$4,280,706**	
Expenses							
Sewer O&M	$2,593,187	$2,670,983	$2,751,112	$2,833,645	$2,918,655	$3,006,214	As Labor
Total Expenses	$2,593,187	$2,670,983	$2,751,112	$2,833,645	$2,918,655	$3,006,214	
Total Sewer O&M	**$2,593,187**	**$2,670,983**	**$ 2,751,112**	**$2,833,645**	**$2,918,655**	**$3,006,214**	
Transfers							
In	$0	$0	$0	$0	$0	$0	As Miscellaneous
Out	0	0	0	0	0	0	As Miscellaneous
Rate Funded Capital - To R&R Fund	1,250,000	1,500,000	1,750,000	2,000,000	2,000,000	2,100,000	FY 2014 Depreciation = $2,861,846
Total Transfers	**$1,250,000**	**$1,500,000**	**$1,750,000**	**$2,000,000**	**$2,000,000**	**$2,100,000**	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 3
Revenue Requirement

	Budget	Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Notes
Debt Service							
Existing Debt	$183,150	$0	$0	$0	$0	$0	
Assumed New Debt - R&I Fund	0	0	0	0	0	0	Calculated @ 5% for 20 yrs
Assumed New Debt - Expansion Fund	0	0	0	0	0	0	Calculated @ 5% for 20 yrs
Total Debt Service	$183,150	$0	$0	$0	$0	$0	
Less: Other Funding							
Bond Reserves	$0	$0	$0	$0	$0	$0	
From Expansion Fund	0	0	0	0	0	0	
From R&I Fund	0	0	0	0	0	0	
Total Less Other Funds	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Net Debt Service	**$183,150**	**$0**	**$0**	**$0**	**$0**	**$0**	
Change in Working Capital							
To/(From) M&O Fund	$36,160	$119,762	($35,453)	($212,843)	($137,622)	($164,771)	
To/(From) R&I Fund	0	0	0	0	0	0	
Total Change in Working Capital	**$36,160**	**$119,762**	**($35,453)**	**($212,843)**	**($137,622)**	**($164,771)**	
TOTAL REVENUE REQUIREMENTS	**$4,062,497**	**$4,290,745**	**$4,465,659**	**$4,620,802**	**$4,781,032**	**$4,941,444**	
Bal/(Def) of Funds	**$0**	**($186,858)**	**($320,338)**	**($428,943)**	**($542,350)**	**($660,737)**	
Balance as a % of Rate Revenues	**0.0%**	**4.7%**	**8.1%**	**10.7%**	**13.4%**	**16.1%**	
Annual CPI Increases	**0.0%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	**2.5%**	
Months of Adjustment	**12**	**12**	**12**	**12**	**12**	**12**	
Add'l Revenue with CPI Adj.	**$0**	**$98,346**	**$201,143**	**$308,556**	**$420,759**	**$537,930**	
Bal/(Def) After CIP Adj.	**$0**	**($88,512)**	**($119,196)**	**($120,388)**	**($121,591)**	**($122,807)**	
Add'l Rate Adj. Required	***0.0%***	***2.2%***	***2.9%***	***2.8%***	***2.7%***	***2.7%***	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 3
Revenue Requirement

	Budget	Projected					
	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Notes
Proposed Rate Adjustment	0.0%	3.0%	0.0%	0.0%	0.0%	0.0%	
Months of Adjustment	12	9	12	12	12	12	
Additional Revenue from Adjustment	$0	$88,512	$119,196	$120,388	$121,591	$122,807	
Total Balance/(Deficiency) of Funds	$0	($0)	$0	($0)	$0	$0	
Total Proposed Rate Adjustment	0.0%	4.8%	2.5%	2.5%	2.5%	2.5%	
Total Additional Revenue	$0	$186,858	$320,338	$428,943	$542,350	$660,737	
Total Bal/(Def) of Funds After Adj.	$0	$0	$0	($0)	$0	$0	
Additional Rate Increase Needed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Average Residential Local Bi-Monthly Impact							
After Proposed Rate Adjustment	$24.46 [1]	$25.19	$25.82	$26.47	$27.13	$27.81	
Annual $ Change	$0.60	$0.73	$0.63	$0.65	$0.66	$0.68	
[1] - As of July 1, 2015							
Debt Service Coverage Ratio							
Before Rate Adjustment	8.02	0.00	0.00	0.00	0.00	0.00	
After Proposed Rate Adjustment	8.02	0.00	0.00	0.00	0.00	0.00	
Sewer M&O Fund							
Beginning Cash Reserve Balance	$4,180,740	$4,216,900	$4,336,663	$4,301,210	$4,088,366	$3,950,744	
Plus: To Operating Reserves	36,160	119,762	0	0	0	0	
Less: Uses of Funds	0	0	(35,453)	(212,843)	(137,622)	(164,771)	
Transfer to RI Fund	0	0	0	0	0	0	
Ending Balance	$4,216,900	$4,336,663	$4,301,210	$4,088,366	$3,950,744	$3,785,973	
Target Minimum - 180 Days of O&M	$1,278,832	$1,317,197	$1,356,713	$1,397,414	$1,439,337	$1,482,517	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 4a
Sewer Replacement Fund

Inflation	2.7%

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Notes
Beginning Balance	$7,877,828	$3,533,483	$3,602,231	$4,419,469	$4,589,749	$5,281,079	
Sources of Funds - Replacement							
New Bond Proceeds	$0	$0	$0	$0	$0	$0	
Vineyard Corridor Specific Plan Fee	0	0	0	0	0	0	
Rate Funded Capital	1,250,000	1,500,000	1,750,000	2,000,000	2,000,000	2,100,000	
Transfer from M&O Fund	0	0	0	0	0	0	
Other Revenues (FEMA Grant & Others)	3,832	0	0	0	0	0	
Interest Income	8,812	8,983	11,021	17,147	26,274	29,165	
Total Replacement Funds Available	$9,140,472	$5,042,466	$5,363,252	$6,436,616	$6,616,023	$7,410,244	
Replacement Capital Projects							
Sanitary Sewer Pump Station S-5	$20,000	$0	$0	$0	$0	$0	
Bi-Annual Sewer Maintenance Hole Improvements	0	30,810	0	32,496	0	34,275	
Bi-Annual Sewer Electrical Panel Improvements	55,788	0	52,736	0	55,623	0	
Annual Sewer Main Replacement/Improvements	991,716	513,500	527,365	920,726	945,585	1,142,490	
Annual Sewer Pump and Motor Repairs	151,857	51,350	52,736	54,160	55,623	57,124	
Bi-Annual Emergency Generator Overhaul	68,102	0	52,736	0	55,623	0	
Bi-Annual Sewer Maintenance Hole Improvements	46,227	77,025	0	81,241	0	85,687	
Sewer Rate Analysis	60,000	0	0	0	0	0	
Sewer Telemetry Upgrades	100,000	0	0	0	0	0	
MEADOWLARK SEWER SIPHON	0	0	0	0	0	0	
EALS/EARS PS	3,498,899	0	0	0	0	0	
Stoneridge Mall ByPass	107,895	0	0	0	0	0	
Del Valle Pkwy/Nevada St. Sewer Additions	356,505	0	0	0	0	0	
General Fund CIP Engineering Reimbursement to GF	150,000	154,050	158,209	216,641	222,491	228,498	
Other Miscellaneous Planned Improvements	0	513,500	0	541,603	0	0	
Transfer to Expansion Fund	0	100,000	100,000	0	0	0	
Total Replacement Capital Projects	$5,606,989	$1,440,235	$943,783	$1,846,867	$1,334,944	$1,548,073	
Transfer to Debt	$0	$0	$0	$0	$0	$0	
Ending Balance Sewer Replacement Fund	**$3,533,483**	**$3,602,231**	**$4,419,469**	**$4,589,749**	**$5,281,079**	**$5,862,170**	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 4b
Sewer Expansion Fund

Inflation	2.7%

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	Notes
Beginning Balance	$2,171,497	$28,494	$31,237	$240,109	$349,876	$460,791	
Sources of Funds Expansion							
Connection Fees - Expansion Fund	$157,837	$159,415	$161,010	$162,620	$164,246	$165,888	As Customer Growth
Transfer From R&I Fund	0	100,000	100,000	0	0	0	
New Bond Proceeds	0	0	0	0	0	0	
Interest Income	71	78	599	1,307	2,292	2,848	
Total Expansion Sources of Funds	$2,329,405	$287,987	$292,846	$404,036	$516,414	$629,527	
Expansion Capital Projects							
Meadowlark Sewer Siphon	$582,542	$205,400	$0	$0	$0	$0	
Del Valle Pkwy/Nevada St. Sewer Add't	482,369	0	0	0	0	0	
Sewer Connection Fee Update	25,000	0	0	0	0	0	
EALS/EARS PS (p112031)	1,161,000	0	0	0	0	0	
CIP Engineering Reimburs to GF	50,000	51,350	52,736	54,160	55,623	57,124	
Future Unidentified Projects	0	0	0	0	0	0	
Total Expansion Capital Projects	$2,300,911	$256,750	$52,736	$54,160	$55,623	$57,124	
Transfer to Debt	$0	$0	$0	$0	$0	$0	
Ending Balance Sewer Expansion Fund	**$28,494**	**$31,237**	**$240,109**	**$349,876**	**$460,791**	**$572,403**	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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														
	$/Month													
Single Family Residential	$11.93	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886	14,886
		$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	$177,590	
2nd Unit	$6.24	187	187	187	187	187	187	187	187	187	187	187	187	187
		$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	$1,167	
Senior Discount	$9.54	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139	3,139
		$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	$29,959	
Low Income Discount	$8.35	178	178	178	178	178	178	178	178	178	178	178	178	178
		$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	$1,486	
2nd Unit Senior Discount	$4.99	15	15	15	15	15	15	15	15	15	15	15	15	15
		$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	$74.88	
2nd Unit Low Inc. Discount	$4.37	0	0	0	0	0	0	0	0	0	0	0	0	0
		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	
Single Family Res - Ruby Hill	$4.32	768	768	768	768	768	768	768	768	768	768	768	768	768
		$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	$3,318	
Senior Discount - Ruby Hill	$3.46	70	70	70	70	70	70	70	70	70	70	70	70	70
		$242	$242	$242	$242	$242	$242	$242	$242	$242	$242	$242	$242	
Low Income Discount - Ruby Hil	$3.02	0	0	0	0	0	0	0	0	0	0	0	0	0
		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Total Single Family Revenue		$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$213,837	$2,566,038

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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
Condominium														
	$/Month/Unit													
Condominium	$8.19	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818	1,818
		$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	$14,889	
Senior Disount	$6.55	16	16	16	16	16	16	16	16	16	16	16	16	16
		$105	$105	$105	$105	$105	$105	$105	$105	$105	$105	$105	$105	
Low Income Discount	$5.73	6	6	6	6	6	6	6	6	6	6	6	6	6
		$34	$34	$34	$34	$34	$34	$34	$34	$34	$34	$34	$34	
Total Condominium Revenue		$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$15,029	$180,344
Multi-Family														
	$/Month/Unit													
Base Charge	$6.24	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728	4,728
		$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	$29,503	
Senior Disount	$4.99	689	689	689	689	689	689	689	689	689	689	689	689	689
		$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	$3,439.49	
Low Income Discount	$4.37	42	42	42	42	42	42	42	42	42	42	42	42	42
		$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	$183.46	
Total Multi-Family Revenue		$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$33,125.66	$397,508

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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														
Auto Steam Cleaning	**$/Acct.**													
Minimum Bill	$6.240	3	3	3	3	3	3	3	3	3	3	3	3	3
	$/CCF													
Up to 5 CCF	$0.000	0	15	0	15	0	15	0	15	0	15	0	15	90
Per CCF over 5	1.341	0	648	0	525	0	409	0	258	0	170	0	112	2,122
	Total Revenues	$19	$888	$19	$723	$19	$567	$19	$365	$19	$247	$19	$169	$3,070
Bakery	**$/Acct.**													
Minimum Bill	$6.240	7	9	11	6	10	7	6	10	6	9	10	6	8
	$/CCF													
Up to 5 CCF	$0.000	39	54	64	35	56	42	27	60	33	54	56	36	556
Per CCF over 5	1.331	1,895	2,236	2,347	1,472	1,702	1,122	1,010	2,496	1,311	1,728	1,491	2,017	20,827
	Total Revenues	$2,566	$3,032	$3,192	$1,997	$2,328	$1,537	$1,382	$3,385	$1,782	$2,355	$2,047	$2,722	$28,326
Commercial Laundry	**$/Acct.**													
Minimum Bill	$6.240	3	2	3	1	2	2	2	2	2	2	3	1	2
	$/CCF													
Up to 5 CCF	$0.000	24	12	15	9	13	18	14	11	15	11	16	9	167
Per CCF over 5	1.341	58	106	66	89	57	102	72	88	76	83	72	70	939
	Total Revenues	$96	$155	$107	$126	$89	$149	$109	$130	$114	$124	$115	$100	$1,415
Grocery w/ Garbage Disposal														
	$/Acct.													
Minimum Bill	$6.240	2	4	6	1	5	1	2	4	2	4	5	1	3
	$/CCF													
Up to 5 CCF	$0.000	12	24	31	6	30	6	12	24	12	24	30	6	217
Per CCF over 5	1.287	1,233	885	1,733	127	1,830	164	1,103	1,284	1,004	990	1,422	180	11,955
	Total Revenues	$1,599	$1,164	$2,268	$170	$2,386	$217	$1,432	$1,677	$1,305	$1,299	$1,861	$238	$15,617

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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
Mortuary														
	$/Acct.													
Minimum Bill	$6.240	1	1	1	1	1	1	1	1	1	1	1	1	1
	$/CCF													
Up to 5 CCF	$0.000	0	5	0	5	0	5	0	5	0	5	0	5	30
Per CCF over 5	1.561	0	20	0	17	0	7	0	12	0	12	0	10	78
	Total Revenues	$6	$37	$6	$33	$6	$17	$6	$25	$6	$25	$6	$22	$197
Resaurants - Fast Food														
	$/Acct.													
Minimum Bill	$6.240	23	20	34	14	35	12	26	20	24	22	36	9	23
	$/CCF													
Up to 5 CCF	$0.000	180	160	269	104	270	78	197	147	181	156	270	66	2,078
Per CCF over 5	1.253	3,270	1,931	3,513	1,557	2,873	977	2,941	2,447	2,670	2,983	2,886	1,076	29,124
	Total Revenues	$4,241	$2,544	$4,614	$2,038	$3,818	$1,299	$3,847	$3,191	$3,495	$3,875	$3,841	$1,404	$38,208
Resaurants - Full Service														
	$/Acct.													
Minimum Bill	$6.240	45	65	89	26	88	24	47	66	45	67	88	24	56
	$/CCF													
Up to 5 CCF	$0.000	305	434	585	175	582	161	312	441	308	458	593	168	4,522
Per CCF over 5	1.253	14,234	9,141	14,684	4,976	13,947	5,291	14,205	8,784	13,886	10,609	14,174	5,381	129,312
	Total Revenues	$18,116	$11,859	$18,954	$6,397	$18,025	$6,779	$18,092	$11,418	$17,680	$13,711	$18,309	$6,892	$166,234
All Other														
	$/Acct.													
Minimum Bill	$6.240	340	373	543	220	503	215	302	414	303	412	506	212	362
	$/CCF													
Up to 5 CCF	$0.000	3,329	3,262	4,864	2,084	4,490	2,004	2,958	3,651	3,002	3,685	4,593	1,961	39,883
Per CCF over 5	1.132	42,938	12,265	47,381	13,002	34,867	12,421	40,952	24,363	41,438	21,835	41,000	14,813	347,275
	Total Revenues	$50,727	$16,212	$57,024	$16,091	$42,608	$15,402	$48,242	$30,162	$48,799	$27,288	$49,569	$18,091	$420,216
	Total Commercial Revenue	$77,371	$35,891	$86,184	$27,574	$69,279	$25,969	$73,129	$50,354	$73,200	$48,924	$75,768	$29,639	$673,283

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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
INSTITUTIONAL														
Schools - No Irrigation Use														
	$/Acct.													
Minimum Bill	$0.000	3	7	5	5	5	5	3	7	3	7	5	5	10
	$/CCF													
All Consumption	$1.088	118	821	485	291	582	969	110	2,261	50	2,179	726	965	9,557
	Total Revenues	$128	$893	$528	$317	$633	$1,054	$120	$2,460	$54	$2,371	$790	$1,050	$10,398
Schools - Irrigation Use														
	$/Acct.													
Minimum Bill	$0.000	1	1	1	1	1	1	1	1	1	1	1	1	1
	$/CCF													
All Consumption	$0.715	0	105	0	123	0	114	0	54	0	109	0	95	600
	Total Revenues	$0	$75	$0	$88	$0	$82	$0	$39	$0	$78	$0	$68	$429
All Others														
	$/Acct.													
Consumption	$1.132	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total Revenues	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	0
	Total Institutional Revenue	$128	$893	$528	$317	$633	$1,054	$120	$2,460	$54	$2,371	$790	$1,050	$10,398

City of Pleasanton
Sewer Cost of Service Study
Exhibit 5
Revenues at Present Rates

		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
INDUSTRIAL														
Charges		$6,070	$0	$6,135	$0	$6,130	$0	$6,126	$0	$6,156	$0	$6,072	$0	$36,688
		$6,070	$0	$6,135	$0	$6,130	$0	$6,126	$0	$6,156	$0	$6,072	$0	
	$/Connec.													
Connections	$0.00	3	3	3	3	3	3	3	3	3	3	3	3	3
Total Connection Charge		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$/MGD													
Demand	$0.00	0	0	0	0	0	0	0	0	0	0	0	0	0.00000
Total Demand Charge		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	$/MG													
Collection	$0.00	0	0	0	0	0	0	0	0	0	0	0	0	0.000000
Total Collection Charge		$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	Total Revenues	$6,070	$0	$6,135	$0	$6,130	$0	$6,126	$0	$6,156	$0	$6,072	$0	$36,688

SUMMARY -

	# Of Customers	Revs At Prsnt Rates
Residential		
Single-Family	19,041	$2,566,038
Condominiums	1,840	$180,344
Multiple-Family	5,459	397,508
Total Residential	26,340	$3,143,890
Commercial	458	$703,925
Institutional	11	$10,398
Industrial/Demand	3	$36,688
Total	26,812	$3,894,900

	FY 2015 Budget
	$3,900,000
Difference	*($5,100)*
Percent	*-0.1%*

City of Pleasanton
Sewer Cost of Service Study
Exhibit 6
Volume Allocation Factor

	Volume Allocation				
	2014 Annual Flow (CCF)	**15% Inflow and Infiltration**	**Total Annual Flow at Plant (CCF)**	**Avg. Daily Flow At Plant (MGD)**	**% of Total**
Residential	2,605,262	390,789	2,996,051	6.14	80.4%
Commercial	589,175	88,376	677,551	1.39	18.2%
Institutional	10,157	1,524	11,681	0.02	0.3%
Industrial/Demand	36,305	5,446	41,751	0.09	1.1%
	---	---	---	---	---
Total	3,240,899	486,135	3,727,034	7.64	100.0%

Actual Flows [1] 0

(VOL)

Notes: [1]

City of Pleasanton
Sewer Cost of Service Study
Exhibit 7
Customer Allocation Factors

	Actual Customer		Customer Service & Accounting			
	Number of Bills [1]	% of Total	Number of Bills	Weighting Factor	Weighted Customer	% of Total
Residential	26,340	98.2%	26,340	1.0	26,340	98.2%
Commercial	458	1.7%	458	1.0	458	1.7%
Institutional	11	0.0%	11	1.0	11	0.0%
Industrial/Demand	3	0.0%	3	2.0	6	0.0%
	---	---	---		---	---
Total	26,812	100.0%	26,812		26,815	100.0%
		(AC)				**(WCA)**

Notes: [1] Based on FY 2014 Billing Data

City of Pleasanton
Sewer Cost of Service Study
Exhibit 8
Strength Allocation Factors

	Biological Oxygen Demand				Suspended Solids		
	Annual Flow (MG)	Avg. Factor (mg/l)	Calculated Pounds [1]	% of Total	Avg. Factor (mg/l) [1]	Calculated Pounds [2]	% of Total
Residential	2,241	200	3.74	76.6%	200	3.74	76.6%
Commercial	507	250	1.06	21.7%	250	1.06	21.7%
Institutional	9	275	0.02	0.4%	275	0.02	0.4%
Industrial/Demand	31	250	0.07	1.3%	250	0.07	1.3%
	---		---	---		---	---
Total	2,788		5	100.0%		5	100.0%
				(BOD)			**(SS)**

*Note: [1] Calculated Pounds = Annual Flow * Strength Factor * (8.345 lbs/One Million Gallons)*

City of Pleasanton
Sewer Cost of Service Study
Exhibit 9
Revenue Allocation Factor

	Projected FY 2016	% of Total
Residential	$3,175,329	80.7%
Commercial	710,964	18.1%
Institutional	10,502	0.3%
Industrial/Demand	37,054	0.9%
	---	---
Total	$3,933,849	100.0%

(RR)

City of Pleasanton
Sewer Cost of Service Study
Exhibit 10
Cost of Service

	Test Year FY 2016	Operating Volume (VOL)	Strength Related: Bio-oxygen Demand (BOD)	Strength Related: Suspended Solids (SS)	Weighted for: Actual Customer (AC)	Weighted for: Customer Acct/Svcs (WCA)	Weighted for: Revenue (RR)	Weighted for: Direct (DA)	Basis of Classification
Expenses									
Sewer O&M	$2,670,983	$2,403,884	$0	$0	$267,098	$0	$0	$0	90% Vol 10% AC
Total Expenses	$2,670,983	$2,403,884	$0	$0	$267,098	$0	$0	$0	
Total Sewer O&M	**$2,670,983**	**$2,403,884**	**$0**	**$0**	**$267,098**	**$0**	**$0**	**$0**	
Transfers									
In	$0	$0	$0	$0	$0	$0	$0	$0	As Total O&M Expenses
Out	0	0	0	0	0	0	0	0	As Total O&M Expenses
Rate Funded Capital - To R&R Fund	1,500,000	1,350,000	0	0	150,000	0	0	0	As Total O&M Expenses
Total Transfers	**$1,500,000**	**$1,350,000**	**$0**	**$0**	**$150,000**	**$0**	**$0**	**$0**	
Debt Service									
Existing Debt	$0	$0	$0	$0	$0	$0	$0	$0	As Total O&M Expenses
Assumed New Debt - R&I Fund	0	0	0	0	0	0	0	0	As Total O&M Expenses
Assumed New Debt - Expansion Fund	0	0	0	0	0	0	0	0	As Total O&M Expenses
Total Debt Service	$0	$0	$0	$0	$0	$0	$0	$0	
Less: Other Funding									
Bond Reserves	$0	$0	$0	$0	$0	$0	$0	$0	As Total O&M Expenses
From Expansion Fund	0	0	0	0	0	0	0	0	As Total O&M Expenses
From R&I Fund	0	0	0	0	0	0	0	0	As Total O&M Expenses
Total Less Other Funds	$0	$0	$0	$0	$0	$0	$0	$0	
Net Debt Service	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 10
Cost of Service

	Test Year FY 2016	Operating Volume (VOL)	Strength Related: Bio-oxygen Demand (BOD)	Strength Related: Suspended Solids (SS)	Weighted for: Actual Customer (AC)	Weighted for: Customer Acct/Svcs (WCA)	Revenue (RR)	Direct (DA)	Basis of Classification
Change in Working Capital									
To/(From) M&O Fund	$119,762	$107,786	$0	$0	$11,976	$0	$0	$0	As Total O&M Expenses
To/(From) R&I Fund	0	0	0	0	0	0	0	0	As Total O&M Expenses
Total Change in Working Capital	**$119,762**	**$107,786**	**$0**	**$0**	**$11,976**	**$0**	**$0**	**$0**	
TOTAL REVENUE REQUIREMENTS	**$4,290,745**	**$3,861,670**	**$0**	**$0**	**$429,074**	**$0**	**$0**	**$0**	
Less: Miscellaneous Revenue									
Miscellaneous Revenues	$0	$0	$0	$0	$0	$0	$0	$0	As Total Revenue Requirements
Traffic Marking	0	0	0	0	0	0	0	0	As Total Revenue Requirements
Interest Income	10,842	9,757	0	0	1,084	0	0	0	As Total Revenue Requirements
Interfund Sales	50,000	45,000	0	0	5,000	0	0	0	As Total Revenue Requirements
In - Benefit Surplus / Implied Subsidy	17,396	15,656	0	0	1,740	0	0	0	As Total Revenue Requirements
In - General Fund for Senior Low Income Discount	91,800	82,620	0	0	9,180	0	0	0	As Total Revenue Requirements
Total Miscellaneous Revenues	$170,038	**$153,034**	**$0**	**$0**	**$17,004**	**$0**	**$0**	**$0**	
NET REVENUE REQUIREMENTS	**$4,120,707**	**$3,708,636**	**$0**	**$0**	**$412,071**	**$0**	**$0**	**$0**	
		90.0%	***0.0%***	***0.0%***	***10.0%***	***0.0%***	***0.0%***	***0.0%***	

Notes:

City of Pleasanton
Sewer Cost of Service Study
Exhibit 11
Allocation of Total Revenue Requirement

Classification Components	FY 2016 Expenses	Residential	Commercial	Institutional	Industrial/ Demand	*Basis of Allocation*
Volume Related	$3,708,636	$2,981,262	$674,207	$11,622.89	$41,544	(VOL)
Strength Related						
Bio-oxygen Demand (BOD-1)	$0	$0	$0	$0	$0	(BOD)
Suspended Solids (SS-1)	0	0	0	0	0	(SS)
	---	---	---	---	---	
Total Strength Related	$0	$0	$0	$0	$0	
Customer Related						
- Actual Customer	$412,071	$404,813	$7,043	$169	$46	(AC)
- Weighted Customer	0	0	0	0	0	(WCA)
	---	---	---	---	---	
Total Customer Related	$412,071	$404,813	$7,043	$169	$46	
Revenue Related	$0	$0	$0	$0	$0	(RR)
Direct Assignment	$0	$0	$0	$0	$0	(DA)
Total Revenue Requirements	**$4,120,707**	**$3,386,075**	**$681,249**	**$11,792**	**$41,591**	

City of Pleasanton
Sewer Cost of Service Study
Exhibit 12
Cost of Service Analysis Summary

		Residential	Commercial	Institutional	Industrial/ Demand
Revenues at Present Rates	$3,933,849	$3,175,329	$710,964	$10,502	$37,054
Allocated Revenue Requirement	$4,120,707	$3,386,075	$681,249	$11,792	$41,591
Balance/(Deficiency) of Funds	($186,858)	($210,746)	$29,715	($1,290)	($4,536)
Required % Change in Rates	**4.8%**	**6.6%**	**-4.2%**	**12.3%**	**12.2%**

City of Pleasanton
Sewer Cost of Service Study
Exhibit 13
Average Unit Costs

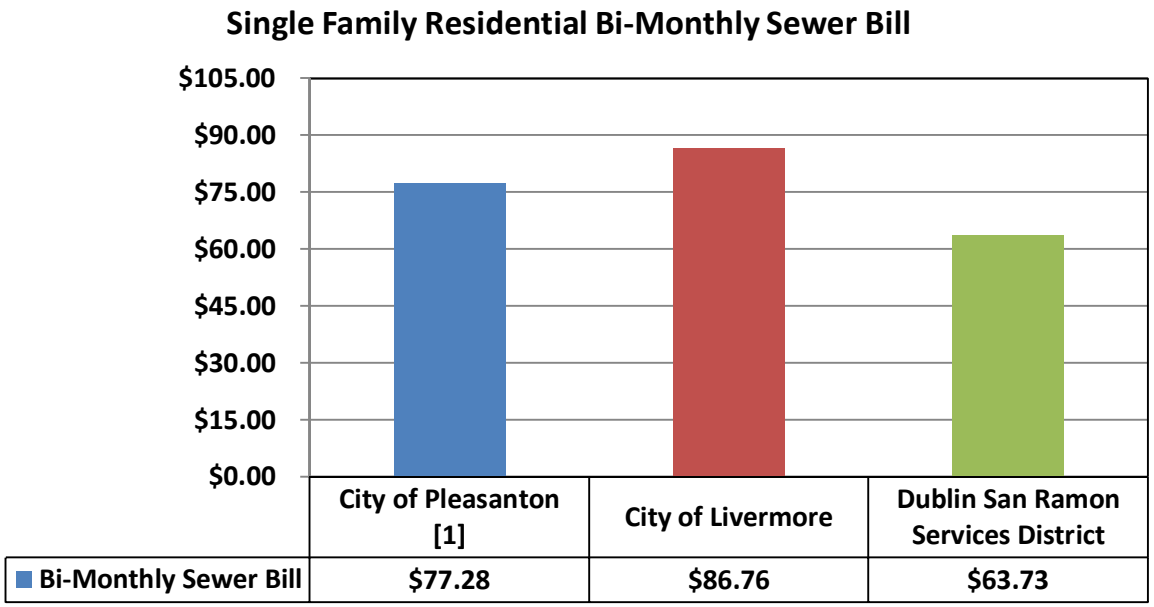
	System Average	Residential	Commercial	Institutional	Industrial/ Demand
Volume Costs - $/CCF	$1.14	$1.14	$1.14	$1.14	$1.14
Strength Costs - $/CCF	$0.00	$0.00	$0.00	$0.00	$0.00
Revenue/Direct - $/CCF	$0.00	$0.00	$0.00	$0.00	$0.00
Total $/CCF	$1.14	$1.14	$1.14	$1.14	$1.14
Customer Costs - $/Customer/Month	$1.28	$1.28	$1.28	$1.28	$1.28
Total Average Cost - $/Cust/Month	$12.81	$10.71	$123.89	$89.33	$1,155.29
Alloc RevReq/Consumption	$1.27	$1.30	$0.00	$1.16	$1.15
Rev Req/Consumption	$1.21	$1.22	$0.00	$1.03	$1.02
Basic Data:					
Annual Flow - 100 CF	3,240,899	2,605,262	589,175	10,157	36,305
Number of Customers	26,812	26,340	458	11	3

City of Pleasanton
Sewer Cost of Service Study
Residential Rates

	Present Rates	**FY 2016**	**FY 2017**	**FY 2018**	**FY 2019**	**FY 2020**
	July 1, 2015	October 1, 2015	July 1, 2016	July 1, 2017	July 1, 2018	July 1, 2019
Rate Adj [1]	*0.0%*	*3.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Effective Months		**9**	**12**	**12**	**12**	**12**
CPI Adj. [2]	*2.5%*	*0.0%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Single Family (Bi-Monthly)	**$/Acct.**					
Single Family Residential	$24.46	$25.19	$25.82	$26.47	$27.13	$27.81
2nd Unit	12.80	13.09	13.42	13.76	14.10	14.45
Senior Discount	19.57	21.41	21.95	22.50	23.06	23.64
Low Income Discount	17.12	17.63	18.07	18.53	18.99	19.47
2nd Unit Senior Discount	10.24	11.13	11.41	11.70	11.99	12.28
2nd Unit Low Inc. Discount	8.96	9.16	9.39	9.63	9.87	10.12
Single Family Res - Ruby Hill	4.32	12.60	25.82	26.47	27.13	27.81
Senior Discount - Ruby Hill	3.46	10.71	21.95	22.50	23.06	23.64
Low Income Discount - Ruby Hill	3.02	8.82	18.07	18.53	18.99	19.47
Condominium (Bi-Monthly)	**$/Acct.**					
Condominium	$16.79	$17.17	$17.60	$18.04	$18.49	$18.95
Senior Disount	13.43	14.59	14.96	15.33	15.72	16.11
Low Income Discount	11.75	12.02	12.32	12.63	12.94	13.27
Multi-Family (Bi-Monthly)	**$/Acct.**					
Base Charge	$12.80	$13.18	$13.51	$13.85	$14.20	$14.56
Senior Disount	10.24	11.20	11.48	11.77	12.07	12.38
Low Income Discount	8.96	9.23	9.46	9.70	9.94	10.19

City of Pleasanton
Sewer Cost of Service Study

Commercial Rates	***Present Rates*** *July 1, 2015*	**FY 2016** *October 1, 2015*	**FY 2017** July 1, 2016	**FY 2018** July 1, 2017	**FY 2019** July 1, 2018	**FY 2020** July 1, 2019
Rate Adj [1]	*0.0%*	*3.0%*	*0.0%*	*0.0%*	*0.0%*	*0.0%*
Effective Months	**12**	**9**	**12**	**12**	**12**	**12**
CPI Adj. [2]	*2.5%*	*0.0%*	*2.5%*	*2.5%*	*2.5%*	*2.5%*
Commercial						
Fixed Charge (Bi-Mo)	**$/Acct.**					
Minimum Bill	$12.80	$13.18	$13.51	$13.85	$14.20	$14.56
Consumption Charge	**$/CCF**					
Up to 5 CCF	$0.000	$0.000	$0.000	$0.000	$0.000	$0.000
> 5 CCF						
Auto Steam Cleaning	$1.375	$1.416	$1.451	$1.487	$1.524	$1.562
Bakery	1.365	1.406	1.441	1.477	1.514	1.552
Commercial Laundry	1.375	1.416	1.451	1.487	1.524	1.562
Grocery w/ Garbage Disposal	1.320	1.360	1.394	1.429	1.465	1.502
Mortuary	1.600	1.648	1.689	1.731	1.774	1.818
Resaurants - Fast Food	1.285	1.324	1.357	1.391	1.426	1.462
Resaurants - Full Service	1.285	1.324	1.357	1.391	1.426	1.462
All Other	1.161	1.196	1.226	1.257	1.288	1.320
Institutional						
Consumption Charge	**$/CCF**					
Schools - No Irrigation Use	$1.116	$1.141	$1.170	$1.199	$1.229	$1.260
Schools - Irrigation Use	0.733	0.750	0.769	0.788	0.808	0.828
All Others	1.161	1.187	1.217	1.247	1.278	1.310
Industrial						
Fixed Charge	$2.77	$2.85	$2.92	$2.99	$3.06	$3.14
Annual Loadings ($/MG)	124.98	128.73	131.95	135.25	138.63	142.10
Peak Monthly Loadings ($/MGD)	80,822.84	83,247.53	85,328.72	87,461.94	89,648.49	91,889.70



[1] - Includes DSRSD regional treatment charge of $52.09