City of Glendale

Final Draft Report

Wastewater Rate Study

April 2018

Table of Contents

1. Introduction 3
   Background and Objectives 3
2. Historical and Current Conditions 4
   2.1 Historical and Current Financial Condition 4
   2.2 Current Accounts, Water Demands, and Wastewater Discharges 6
3. Future Revenue Requirements 7
   3.1 Projected Customer Growth and Wastewater Discharges 8
   3.2 Budgeted/Projected Operating Expenses 8
4. Cost of Service Analysis 15
   4.1 Objectives of a Cost of Service Analysis 15
   4.2 Overview of the Cost of Service Analysis 15
   4.3 Summary of the Cost of Service Analysis 17
5. Current Wastewater Rates and Fees 18
   5.1 Current Wastewater Rates 18
   5.2 Current Wastewater Facility Charges (Connection Fees) 19
6. Proposed Wastewater Rates 19
   6.1 Development of Cost-Based Rates 20
   6.2 Development of Proposed Wastewater Rates 21
   6.3 Comparison of Monthly Bills 23
   6.4 Summary of Proposed Wastewater Rates 25

List of Tables

1	Historical Operating Revenues and Expenses	5
2	Current Accounts and Wastewater Discharges	6
3	Projected Operation and Maintenance Expenses	9
4	Projected Capital Improvement Program	11
5	Projected Revenue Requirements Using Proposed Rates	14
6	Estimated Cost of Service Revenue Analysis	16
7	Estimated Unit Cost of Service Analysis by Customer Class	16
8	Unit Cost of Service Comparison by Customer Class	17
9	Current Wastewater Rates	18
10	Proposed Wastewater Rates	22
11	Comparison of Typical Single Family Bills	23

List of Appendices

Appendix A - Miscellaneous Supporting Information

1. Introduction

Background and Objectives

This study of wastewater (sewer) utility financial conditions was conducted for the City of Glendale (City) to provide a financial evaluation of current and future financial performance of the City's wastewater system. The study goals are to assess utility revenue requirements, cost of service, and develop cost-based and equitable rates to enhance user class equity, and to maintain the utility on a financially sound and stable basis. The study was conducted using historical and projected data on operating revenues, operating expenses, the City's identified capital improvement program, and projected Los Angeles treatment and disposal costs.

The City provides commonly sought services, including water and sewer services, to approximately 34,900 City service connections, and sewer services to approximately 2,300 customers that reside in the Crescenta Valley Water District (CVWD) service area. Wastewater generated in Glendale is collected and conveyed by the City's 360 miles of sewer infrastructure. Wastewater treatment is performed at either the City of Los Angeles's Hyperion Treatment Plant or at the Los Angeles-Glendale Water Reclamation Plant (LAGWRP). Ownership of the 40 year-old LAGWRP facility is shared equally, with the City of Los Angeles providing operational responsibilities for this 20-million gallon per day (MGD) reclamation plant.

Over the years, the two cities have had various contracts regarding wastewater treatment. Today, costs are distributed based on an Amalgamated Agreement for regional system costs and a local Joint Powers Agreement (JPA) for LAGWRP costs. While there are substantial swings in annual Amalgamated expenses/expenditures, the current annual budget to operate and maintain the City's local system as well as treat and dispose of wastewater to the City of Los Angeles' Amalgamated System is approximately $20.7 Million[1], excluding capital expenditures. Operating costs for treatment and disposal represent approximately 40% of these costs and are established by the City of Los Angeles and outside of the City's control.

The City has established a separate accounting and financial reporting mechanism for large business-type activities as enterprise funds. These individual funds account for the management and delivery of water, electric, and sewer services, and have adopted appropriate fees and charges in exchange for the services provided. The City tracks wastewater-related costs and revenues in a "Sewer Fund" (referred to as Wastewater Fund herein).

The City last adjusted wastewater rates in 1999. With rate studies and associated adjustments typically performed every 5 to 10 years, there is a pent up need for wastewater rate adjustments to reflect almost 20 years of increased inflationary costs. Since 1999, the cumulative impact of annual inflation suggests that costs have increased by 60 to 75% since the City last increased its wastewater rates. Wastewater rates have not been adjusted to reflect the increase in costs.

[1] Includes $5.5 million of depreciation and amortization expense.

The primary factors facing the City's wastewater utility over the next ten years are:

- Sustaining the current level of service to customers;
- Implementing the City's local wastewater system capital improvement program;
- Funding projected wastewater treatment system capital improvements, both at the LA Glendale Water Reclamation Plant and the City's share of regional amalgamated costs;
- Provide additional funding to adjust for historical increases in inflation since 1999 and the full costs of local wastewater services; and
- The need to meet short and long-term financial obligations and support various customer equity and administrative rate structure provisions. [2]

2. Historical and Current Conditions

2.1 Historical and Current Financial Condition

The financial condition of the City's wastewater utility was reviewed and a summary of financial performance is presented in Table 1. The information presented in this table was derived from the City's Comprehensive Annual Financial Reports (CAFRs) and summarized herein. The City's Finance Department performed a summary contrast assessment of the historical and budgeted information used in this rate study.

The financial condition of a utility is assessed by contrasting several financial parameters with the recorded financial performance. Foremost among these parameters are criteria for net operating revenues and an assessment of the utility's fund balance stability. The findings related to each of these elements are provided as follows.

Net operating income is the revenue derived from a utility's operation or user charges minus the necessary operating expenses. This important financial parameter of a utility's performance is generally desired to be at least 20% of total operating revenues to generate adequate capital improvement funding for new and replacement assets/infrastructure. As shown in Table 1, the wastewater utility has fallen short of this parameter in the last four years.

[2] In conducting this financial review and providing these financial projections, HDR is acting in a role other than that of a "Municipal Advisor", as defined by the Securities and Exchange Commission (SEC). The City should consult with its Financial (Municipal) Advisor and Bond Counsel should the need for the issuance, timing and structure of any new debt issue arise.

TABLE 1
HISTORICAL OPERATING REVENUES AND EXPENESES

Sources and Uses of Funds	Historical Financials				
	FY 12-13	FY 13-14	FY 14-15	FY 15-16	FY 16-17
Total Operating Revenues (a)	$16,456,000	$15,661,000	$16,045,000	$14,546,000	$14,067,000
Total Operating Expenses (b)	$14,727,000	$15,773,000	$17,531,000	$15,634,000	$16,652,000
Operating Income (Loss)	$1,729,000	($112,000)	($1,486,000)	($1,088,000)	($2,585,000)
Net Op Rev as % of Total Op Rev	11%	-1%	-9%	-7%	-18%
Additional Fund Considerations					
Total Capital Expenditures (c)	($4,681,000)	($4,096,000)	($11,290,000)	($15,979,000)	($18,118,000)
Add Back Depreciation (d)	$5,462,000	$5,480,000	$5,544,000	$5,781,000	$5,998,000
Capital Expenditures less Depreciation (e)	$781,000	$1,384,000	($5,746,000)	($10,198,000)	($12,120,000)

Source: City of Glendale, Finance Department, Comprehensive Annual Financial Reports, Sewer Fund.

(a) Total operating revenues includes charges for services and miscellaneous revenues.

(b) Total operating expenses include all operating and maintenance expenses including depreciation & amortization.

(c) Total capital expenditure based on acquistion of property line item in CAFR Statement of Cash Flow Table.

(d) Adjustment to add back depreciation and amortization as a non-cash expense.

(e) Capital less depreciation is used to approximate additional sewer rate/fund reserve obligations.

This condition is due to a steady decline in operating revenues, an overall increase in operating expenses, and annual swings in Los Angeles' Amalgamated System costs of providing wastewater treatment and disposal for the City of Glendale. During this period, net operating income has ranged from 11% in FY 12-13 to -18% for FY 16-17[3]. This parameter reflects the fact that the utility currently is not generating sufficient funds to provide for future capital expenditures and increased utility operating expenses.

Fund balance is another important financial consideration. In addition to a utility's operational performance, the impact of various non-operating revenues and capital expenditures can also have a significant impact on the financial condition of a utility, specifically as it impacts fund balance. However, in FY 14-15 through FY 16-17, significant increases in capital expenditures were incurred, further reducing available cash by approximately $28 Million. Given that this condition is projected to continue with additional increases in capital improvement requirements, additional rate adjustments may be necessary to maintain an appropriate and prudent fund balance in future years.

In consideration of these factors, as well as the integration of additional increases in projected operating and capital costs for both the local collection, and treatment related cost increases from the City of Los Angeles, additional revenues from wastewater rates are necessary to meet the requirements of the Wastewater Fund (also referred to as the Sewer Fund). The following sections of this report provide the supporting information for the level and timing of proposed rate adjustments to meet the enterprise funds short-term financial requirements.

2.2 Current Accounts, Water Demands, and Wastewater Discharges

Data from the City's utility billing system provides information on the City's water and wastewater utility customers. As to be expected under the current economic conditions, there has been little change in growth-related account activity over the last several years. In fact, with an increased emphasis on water conservation, the City has experienced an ongoing decline in water usage and wastewater discharges. While this decline in usage is generally not projected to be permanent, it has reduced water usage based wastewater revenues and affected the performance of the City's Wastewater Fund. In line with a conservative approach to financial planning, minimal change in new accounts and wastewater discharges is projected over the next several years.

A summary of the number of electric meters, sewer accounts, and billable water usage or wastewater discharges by customer class is provided in Table 2. As shown, approximately 80% of the wastewater discharge is generated by the City's Residential customer classes. Since wastewater is not metered, the amount of water that is used by single family customers in the winter period is utilized to approximate the amount of wastewater generated by each Single Family Residential (SFR) account. As a note, metered water is measured in 100 cubic feet (hcf), where one hcf is equal to 748 gallons.

The use of winter water is a generally accepted approach for estimating wastewater flows as it factors out the impact of outdoor irrigation use. This approach is noted by the Water Environment Federation in its Manual of Practice Number 27 (WEF MOP No. 27). The Water

[3] FY = fiscal year which runs from July 1st through June 30th.

Environment Federation is a 90 year old not-for-profit association that provides technical education and training for thousands of water quality professionals who treat and manage wastewater systems and return it safely to the environment. During its long tenure, WEF has supported the development of manuals of practice (MOP) and standards to assist its members in protecting public health in their local communities throughout the world.

The billable wastewater usage provided in Table 2 is based on information provided by Glendale Water & Power (GWP) and adjusted to reconcile with FY 15-16 revenues posted for each customer class. Metered wastewater flows for FY 16-17 indicate only a one percent change from FY 15-16's metered wastewater flow data.

TABLE 2

CUSTOMER ACCOUNTS AND DISCHARGES

Customer Classes & Sewer Billing Codes	Citywide Electric Meters (a)	Water Meters	Billable Wastewater Usage (hcf)(b)
Residential			
Single Family (S-SFU & S-SFUF)	26,043	25,274	2,717,333
Multiple Family (S-MFU & S-MFUF)	50,317	7,498	3,990,595
Subtotal	76,360	32,772	6,707,927
Commercial/Industrial			
Commercial Low Strength (S-CLU & S-CLUF)	2,385	2,474	1,124,126
Commercial Medium Strength (S-CMU & S-CMUI	1,170	1,214	695,636
Commercial High Strength (S-CHU & S-CHUF)	37	38	24,967
Subtotal	3,593	3,726	1,844,730
Total	79,953	36,498	8,552,657

Source: Glendale/GWP FY 16-17 Meter Data. Meter data is active accounts. CAFR data is installations.
(a) City electric meter count adjusted to match FY 16-17 revenue report.
(b) Billable wastewater usage is per City Finance Dept based on actual FY 16-17 revenue report. Includes approximately 2,300 CVWD Accounts, billed for Sewer Services.

3. Future Revenue Requirements

The financial projections developed herein were produced to assess revenue and funding requirements, and included projections of operating revenue requirements under the current Los Angeles wastewater service agreements. Future revenue requirements depend primarily on four specific areas:

- Customer growth and wastewater discharges;
- Wastewater operations and maintenance costs;
- Necessary capital improvements, and meeting debt obligations, if applicable; and
- Meeting appropriate levels of target reserve.

This study examines future revenue requirements over the next ten years, with a focus on the development of a four-year rate and revenue assessment. As such, financial performance and wastewater rate projections for the next four years are reflected herein, with additional supporting information provided in Appendix A.

It should also be noted that while the City's local operating and capital costs are more easily controlled and projected, the annual costs for wastewater treatment and disposal from the Amalgamated System can vary greatly from projected values. The City should recognize the need for frequent reassessment of wastewater rates to meet short and long-term financial performance goals of the Wastewater Fund.

3.1 Projected Customer Growth and Wastewater Discharges

Customer growth affects the revenue requirement of the City's utility in two ways. First, it increases the customer base that is paying for monthly service, and second, it increases the level of those costs that vary with the quantity of wastewater discharged such as power/chemicals and pumping expenses. In financial planning, applying low to moderate growth factors provides a conservative assessment of future utility revenue requirements and usage based revenues. Based on the City's 93% build-out condition and current economic factors, a minimal level of additional growth is projected in the next several years. Accordingly, a one half percent annual increase is factored in this rate evaluation to incorporate general increases associated with redevelopment activities and other potential increase in billable interior water usage.

In addition to the inclusion of new account growth, it is also important to project changes in water usage/wastewater discharges that may affect the utility's financial performance. This is particularly true for wastewater rate structures that incorporate a quantity charge based on customer water usage. Both the City's water and wastewater utilities have rate structures that are based on metered water and designed to promote customer awareness of water usage to preserve the City's water resources. Some of these conservation supportive measures as well as general public awareness may also affect indoor water usage, which could reduce wastewater discharges in the City.

Given these factors, it is important to note that future Wastewater Fund revenues and revenue requirements will depend on the level of wastewater discharges and water usage that is used to bill wastewater charges. Since actual growth and additional conservation cannot be derived as precise values, annualized growth levels, demands, and discharges used herein are to be considered as estimates to be used for projection purposes. All of these factors should be evaluated and integrated in the City's ongoing rate and budget review process to evaluate the financial performance of the City's Wastewater Fund. As discussed with staff, given the need to reconcile customer class water usage data with financial postings, the City should perform a focused review on these data annually to assess the implications on the Wastewater Fund's future rate and revenue requirements.

3.2 Budgeted/Projected Operating Expenses

Costs associated with the management, administration, and operations of the City's wastewater utility are accounted for in two primary Divisions. These are:

- Sanitary Sewers (Org 581) - is responsible for management and administration of the overall wastewater system including the operation and maintenance (O&M) portion of the

contractual services costs for wastewater treatment and disposal by the City of Los Angeles at LAGWRP, and through the Amalgamated Agreement. Accordingly, the vast majority of wastewater system depreciation and amortization costs are also accounted for in Org 581.

- Wastewater Maintenance (Org 583) - is responsible for the local operation and maintenance of the wastewater collection and pumping system.

The estimated and projected wastewater utility costs for these Divisions for the four year planning period are provided in Table 3 and are based on the budgeted and projected operating costs provided by Glendale and the City of Los Angeles. Note that the Contractual Services costs associated with wastewater treatment through the Amalgamated System (ASSSC) and at LAGWRP annually represent approximately 40% of the City's wastewater O&M costs. These substantial expenses are imposed on Glendale by the City of Los Angeles as a direct cost and are therefore essentially out of the City's control. Los Angeles' budgeted and projected ASSSC and LAGWRP costs allocated to Glendale were provided by the City of Los Angeles.

A second notable cost element that is shown in Table 3 is depreciation. Depreciation is a non-cash expense that is recorded to represent the annual wear and tear of system assets. Funding depreciation provides an avenue to repair and replace aging infrastructure at the end of its useful life, or increase fund balance to finance future replacement needs. Under the City's current method of estimating and recording depreciation, the FY 17-18 budget reflects this cost element at approximately $6.1 Million per year, which is approximately 35% of the wastewater utility's O&M costs. Given the magnitude of this cost component, the City has chosen to defer the full recovery of this cost through sewer rates at this time, and begin to minimally phase this cost element into the rate plan in the latter years of the four-year planning horizon.

3.3 Projected Capital Improvement Program

Wastewater utility systems are by nature capital intensive operations. To evaluate system capacity, regulatory compliance, and long range reliability, Glendale and the City of Los Angeles have completed several system evaluations, studies, and designs over the years. These facility master planning documents provide much of the basis for the capital improvement program (CIP) for both local and amalgamated collection, pumping, and treatment system improvements.

The City's current wastewater system CIP is separated into two basic categories:

- Glendale Local Wastewater Collection/Pumping System Improvements, and
- City of Los Angeles Amalgamated and LAGWRP Wastewater Capital Improvements.

TABLE 3
PROJECTED OPERATION AND MAINTENANCE COSTS

Description	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
			Projected		
Sanitary Sewers - Org 581					
Salaries & Benefits	$1,233,700	$1,467,000	$1,516,400	$1,567,600	$1,620,700
Maintenance & Operation (a)	$3,493,400	$4,829,300	$4,884,200	$4,940,800	$5,835,400
Total Org 581 O&M Costs	$4,727,100	$6,296,300	$6,400,600	$6,508,400	$7,456,100
Wastewater Maintenance - Org 583					
Salaries & Benefits	$1,873,300	$2,179,400	$2,251,600	$2,326,400	$2,403,900
Maintenance & Operation (b)	$670,200	$690,300	$711,000	$732,300	$754,300
Misc, Capital Outlay (b)	$30,500	$31,400	$32,300	$33,300	$34,300
Total Org 583 O&M Costs	$2,574,000	$2,901,100	$2,994,900	$3,092,000	$3,192,500
Sub Total Sewer Fund Expenses	**$7,301,100**	**$9,197,400**	**$9,395,500**	**$9,600,400**	**$10,648,600**
Contractual Services - ASSSC (c)	$5,278,100	$4,673,300	$4,756,100	$4,855,800	$5,134,300
Contractual Services - LAGWRP (c)	$2,611,300	$2,689,700	$2,770,400	$2,853,500	$2,939,100
Total Contractual Svs O&M Costs	$7,889,400	$7,363,000	$7,526,500	$7,709,300	$8,073,400
Depreciation & Amortization (d)	$0	$0	$0	$300,000	$600,000
Total Add'l Program Costs	$0	$0	$0	$300,000	$600,000
Total Sewer Fund Operating Expenses	**$15,190,500**	**$16,560,400**	**$16,922,000**	**$17,609,700**	**$19,322,000**

Notes: All budgeted/projected costs are rounded.
Source: Glendale Public Works/Finance budget, and City of Los Angeles provided budgeted projections.
(a) Excludes both Contractual Services costs from City of Los Angeles (see note c)), and depreciation expense (see note (d)). Current and Projected cost allocation/GWP charges per City Finance Dept. and budget.
(b) Excludes depreciation (see note d). Full capital replacement costs are budgeted in Capital Outlay, as shown in Table 4.
(c) LA Contractual Svs Costs per LA Budgets & adjusted for Chevy Chase Project. FY 20-21 and beyond, inflated at 5%/Year. Glendale budget for contractual services was $9.09 M. LA budget for contractual services used herein is $7.89 M.
(d) Depreciation is scheduled to begin partial funding during year three of the four year rate plan.

Consistent with other utility system planning, capital projects are spread over multiple years to minimize ratepayer impact as much as possible. The wastewater rate and revenue plan derived herein is designed to assess the current and projected financial performance of the City's Wastewater Fund, and set forth a methodical plan to improve this performance in the coming years. Additional studies should be anticipated to assess changes in conditions and the financial performance of the Wastewater Fund. A comprehensive listing of the specific projects included in the City's 5-year capital improvement program is provided in Table 4. The City's 10-year CIP is provided in Appendix A.

3.4 Projected Revenue Requirements Using Proposed Rates

An annualized revenue plan has been prepared to assess the financial implications of the Wastewater Fund programs and costs. This plan integrates utility system operating and capital costs, debt financing considerations, and depreciation funding with projected growth and wastewater discharge criteria.

Given the current financial status of the Wastewater Fund and the necessary capital improvements projects, additional revenues are needed to meet obligations of the Wastewater Fund. Accordingly, a projected revenue plan and proposed wastewater rate increases has been developed to improve the fund's financial standing. Several cash flow evaluations and alternatives were prepared with City staff to balance financial performance with ratepayer impact. These alternatives included a discussion of the use of new debt financing strategies, changes and timing of local CIP spending, alternative levels of depreciation funding, consideration for the inclusion of other full cost recovery items, rate increase levels/phases, and rate structure elements such as fixed bi-monthly service charges and water usage based increases.

TABLE 4
PROJECTED CAPITAL IMPROVEMENT PROGRAM

Description	Projected				
	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22
Glendale Local City CIP Expenditures (525-501)					
Pipeline Rehabilitation – Ongoing	$150,000	$125,000	$50,000	$50,000	$50,000
Verdugo Rd Sanitary Sewer Upgrade	$0	$0	$400,000	$1,000,000	$600,000
Sanitary Sewer Cleaning and Lining	$150,000	$120,000	$0	$0	$0
Emergency Wastewater Repair Program	$0	$0	$0	$0	$170,000
Miscellaneous Capital Expenditures	$200,000	$144,000	$152,000	$159,000	$167,000
Subtotal Local Capital	$500,000	$389,000	$602,000	$1,209,000	$987,000
City of Los Angeles Capital Charges (525 -501) (a)					
LAGWRP CIP Summary (City's 1/2)	$2,339,400	$12,804,100	$8,864,400	$1,788,900	$697,700
Amalgamated Capital Charges	$4,213,300	$2,464,800	$3,877,100	$459,200	$1,532,160
Subtotal City of Los Angeles Capital Charges	$6,552,700	$15,268,900	$12,741,500	$2,248,100	$2,229,860
Total Capital Expenditures	$7,052,700	$15,657,900	$13,343,500	$3,457,100	$3,216,900

Notes: Local CIP provided by Glendale Public Works / Engineering Department.
(a) LAG and Amalgamated CIP provided by LA. CIP for FY 22-23 and beyond is estimated to approximate the typical year average spending. Amalgamated CIP estimates begin in FY 21-22.

Based on the results of these alternative plans and discussions with City staff, the City requested a rate and revenue plan be prepared that would:

- Consider full and partial recovery of all wastewater costs;
- Significantly improve financial stability in year one, but incorporate more modest increases in years two through four; and
- Allow the Wastewater Fund to fall short of recommended reserve targets, but not fully deplete unrestricted fund balance in any year of the planning period.

The resulting rate and revenue plan to meet these criteria is provided in Table 5. As shown, to meet the projected wastewater operating expenses, begin to fully fund all program costs, and fund identified capital improvements, a notable change in overall revenue requirements is required. While the magnitude of the increase may appear large, it is important to recognize that the actual increase in cost for a typical customer is relatively modest. A discussion of the impact of these changes as well as the correlation between the projected revenue requirements and the City's wastewater rates is provided in a later section of this study.

A few cautionary notes are warranted regarding the use and development of this financial plan. Since the magnitude of anticipated increases may vary based on unforeseen changes in costs, water demand/sewage discharges, and/or reserve requirements, additional review of cost components and revenue requirements should be made annually during the budget development and review process. Accordingly, the level of the required annual rate increases may differ from the rate and revenue projections derived herein based on those annual findings.

To manage future uncertainties, it is recommended the City establish policies to minimize future risk, and develop and maintain a series of reserves to buffer the impact of unforeseen expenses, declines in billable water use, emergencies, or other financial circumstance. A "Rate Stabilization Fund" is one such fund that may be developed to supplement other dedicated reserve funds to manage the City's financial risk of uncertainty. It would be prudent for the City to consider inclusion of new fund reserve criteria to help manage the City's Wastewater Fund. Applicable sewer fund reserve criteria are reflected in Table 5, and shown below.

- Operating and Rate Stabilization Reserve – 50% of total operating expenses, less depreciation
- Capital Reserve – One year's typical total capital improvement obligations ($8 Million/year)

A discussion of the wastewater cost of service analysis and the City's current and proposed rates and rate structure is provided in Sections 4, 5, and 6.

TABLE 5
PROJECTED REVENUE REQUIREMENTS USING PROPOSED RATES

	Projected				
Description	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**
OPERATING REVENUES					
Flat Rate Revenues (a)	$2,217,700	$3,811,300	$4,098,500	$4,271,400	$4,421,500
Water Usage Based Revenues (a)	11,650,600	19,951,200	21,378,600	22,201,800	22,901,200
Miscellaneous Revenues	200,000	204,000	208,100	212,300	216,500
TOTAL OPERATING REVENUES	14,068,300	23,966,500	25,685,200	26,685,500	27,539,200
OPERATING EXPENSES					
Sanitary Sewers - Org 581	4,727,100	6,296,300	6,400,600	6,508,400	7,456,100
Wastewater Maintenance - Org 583	2,574,000	2,901,100	2,994,900	3,092,000	3,192,500
Los Angeles Contractual Svs (ASSSCs & LAG) (b)	7,889,400	7,363,000	7,526,500	7,709,300	8,073,400
Depreciation & Amortization	0	0	0	300,000	600,000
TOTAL OPERATING EXPENSES	15,190,500	16,560,400	16,922,000	17,609,700	19,322,000
NET OPERATING INCOME	(1,122,200)	7,406,100	8,763,200	9,075,800	8,217,200
Net Op Income Versus Op Revenues	-8%	31%	34%	34%	30%
NON-OPERATING REVENUES (EXPENSES)					
Interest & Inv. Revenue, (Interest rate of 1.49%)(a)	311,000	193,800	73,700	6,600	90,400
TOTAL NONOPERATING REVENUES	311,000	193,800	73,700	6,600	90,400
NET INCOME (LOSS)	(811,200)	7,599,900	8,836,900	9,082,400	8,307,600
OTHER SOURCES AND USES OF CASH					
Local Capital Project Expenditures	(500,000)	(389,000)	(602,000)	(1,209,000)	(987,000)
LA Contractual Service - LAG Capital Costs (b)	(2,339,400)	(12,804,100)	(8,864,400)	(1,788,900)	(697,700)
LA Contractual Service - Amalgamated Capital (b)	(4,213,300)	(2,464,800)	(3,877,100)	(459,200)	(1,532,160)
TOTAL SOURCES AND USES	(7,052,700)	(15,657,900)	(13,343,500)	(3,457,100)	(3,216,860)
TOTAL INCREASE (DECREASE) IN CASH	($7,863,900)	($8,058,000)	($4,506,600)	$5,625,300	$5,090,740
Beginning Unrestricted Cash Balance (c)	$20,871,000	$13,007,100	$4,949,100	$442,500	$6,067,800
Projected Unrestricted Cash Balance (See Notes) (d)	**$13,007,100**	**$4,949,100**	**$442,500**	**$6,067,800**	**$11,158,540**
Target Reserve Fund (See Notes) (e)	$15,600,000	$16,450,000	$16,800,000	$17,170,000	$18,060,000
Projected/Proposed Rates (f)					
Monthly Flat Fee per Electrical Account	$2.30	$3.93	$4.21	$4.36	$4.49
Single Family Winter Water Charge ($/Hcf)	$1.23	$2.10	$2.25	$2.33	$2.40
Multi Family Charge ($/Hcf)	$1.31	$2.24	$2.40	$2.49	$2.56
Commercial - Low Strength Charge ($/Hcf)	$1.39	$2.38	$2.54	$2.64	$2.72
Commercial - Med Strength Charge ($/Hcf)	$2.02	$3.45	$3.70	$3.83	$3.95
Commercial - High Strength Charge ($/Hcf)	$3.85	$6.58	$7.04	$7.30	$7.52

(a) Revenues/water sales adjusted to reconcile with FY 16-17 actuals, and used as the basis for future projections with growth/rate changes. Interest earnings are calculated.
(b) Amalgamated and LAG costs provided by the City of Los Angeles. Amalgamated O&M costs adjusted for Chevy Chase diversion project.
(c) Beginning unrestricted cash balance for FY 17-18 provided by City.
(d) Future CAFRs Ending Cash & Equivalents will be greater than projected values as depreciation/amortization expenses are included as cash expenditures herein.
(e) Target Reserve Fund based on 50% of Total Operating Expenses less Depreciation, plus 1 year's typical CIP ($8 M in FY 17-18, inflated 2.1%/year thereafter).
(f) All rate increases assumed to be effective July 1 of each fiscal year.

4. Cost of Service Analysis

The revenue requirement analysis, as developed in the previous section, focused on the total sources and application of funds required to adequately fund the City's Wastewater Fund. 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 proportionate allocation of the total revenue requirement between the various customer classes of service (e.g., residential and commercial) as outlined in the Water Environment Federation Manual of Practice No. 218 (WEF MOP #27). The previously developed revenue requirement and customer characteristics are utilized as the bases for the development of the cost of service analysis.

4.1 Objectives of a Cost of Service Analysis

There are two primary objectives in conducting a 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 primary rationale for conducting a cost of service analysis is to develop proposed rates such that it properly reflects the costs incurred by the City and the customers' proportional use of the system. For example, the City's Wastewater Fund typically incurs costs related to flow (wastewater volumes) 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 a manner similar to how they are incurred.

4.2 Overview of the Cost of Service Analysis

In summary, the cost of service analysis began by functionalizing the revenue requirement for the City's wastewater system. The functionalized revenue requirement was then classified into their various cost components such as sewage flow/strength and customer related costs. The individual classification totals were then allocated to the various customer classes of service (i.e. single family residential, multi-family residential, and commercial classes) based on the appropriate flow/strength and account allocation factors. The allocation factors are based on each customer class's proportional share of the flow, strength, and customer related costs. For example, if residential customers contribute 35% of the total estimated sewer flow, then the residential customer class is allocated 35% of the costs classified as being volume related. The allocated expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Table 6 provides a summary of the allocated costs to each customer class of service based on generally accepted methodologies as provided in the WEF MOP No. 27 and the City's specific sewer system flow/strength data, customer billing/unit data, and Los Angeles' customer classification information.

Table 6 provides the total allocated costs to each customer class of service. While sewer utility costs are typically 60-80% fixed, most utilities in California, including Glendale, only collect a small portion of these fixed costs through a fixed service charge. As such, only the current level of fixed costs are segregated to account for the fixed monthly service charge revenue that is collected through customer

charge per electric meter (Table 6 - billed units). The remaining amount of costs allocated to each customer class of service should be collected through the volume or usage charge of the rate structure to recover the costs associated with the volume of sewage flow, the amount of biochemical oxygen demand (BOD, which is the amount of dissolved oxygen needed to break down organic material present in the wastewater), and the total suspended solids (TSS).

TABLE 6
ESTIMATED COST OF SERVICE REVENUE ANALYSIS

Parameter	Number of Customers	Number of Billed Units	Flow	BOD	TSS	Total
Usage by Customer Class			**(mgd)**	**(lbs/day)**	**(lbs/day)**	
Single Family (S-SFU & S-SFUF)	25,274	26,043	6.48	8,641	7,021	-----
Multiple Family (S-MFU & S-MFUF)	7,498	50,317	8.56	13,210	10,711	-----
Commercial Low Strength (S-CLU & S-CLUF)	2,474	2,385	2.28	3,418	2,943	-----
Commercial Medium Strength (S-CMU & S-CMUF	1,214	1,170	1.42	3,843	4,079	-----
Commercial High Strength (S-CHU & S-CHUF)	38	37	0.05	358	358	-----
		($/account)	**($/mg)**	**($/lb)**	**($/lb)**	
Unit Cost of Service (FY 16/17 Unit Rates)			$2,231	$0.67	$0.72	-----
Annual Revenue Requirement by Customer Class						
Single Family (S-SFU & S-SFUF)	25,274	NA	$5,273,964	$2,119,395	$1,845,101	$9,238,460
Multiple Family (S-MFU & S-MFUF)	7,498	NA	$6,973,006	$3,240,011	$2,814,822	$13,027,838
Commercial Low Strength (S-CLU & S-CLUF)	2,474	NA	$1,854,370	$838,347	$773,513	$3,466,230
Commercial Medium Strength (S-CMU & S-CMUF	1,214	NA	$1,154,627	$942,496	$1,072,014	$3,169,137
Commercial High Strength (S-CHU & S-CHUF)	38	NA	$43,689	$87,785	$94,060	$225,534

Notes: Based on FY 16-17 actuals and customer data.
Where: Flow is the estimated wastewater volume, BOD is Biochemical Oxygen Demand, and TSS is Total Suspended Solids.

Based on the allocated costs, and the collection of customer costs through the monthly service charge, the remaining allocated costs are collected through the usage charge. The usage charge revenues, divided by the wastewater usage, result in cost-based rates.. The summary result of this cost allocation calculation is shown in Table 7. As shown in the final column of this table, to recover the full costs of service for FY 16-17, the volume or usage charge unit rates would need to range from $2.71 to $8.63 per HCF of billable wastewater usage and strength levels depending on the customer class of service.

TABLE 7
ESTIMATED UNIT COST OF SERVICE ANALYSIS BY CUSTOMER CLASS

Customer Class	A Estimated Electric Meters	B Current Monthly Rate ($/Meter)	C Fixed Charge Revenue Requirements	D Usage Charge Revenue Requirements	E Billable Wastewater (HCF)	F Estimated Unit Cost ($/HCF)
Single Family (S-SFU & S-SFUF)	26,043	$2.30	$718,794	$8,519,666	3,140,071	$2.71
Multiple Family (S-MFU & S-MFUF)	50,317	$2.30	$1,388,743	$11,639,095	4,151,665	$2.80
Commercial Low Strength (S-CLU & S-CLUF)	2,385	$2.30	$65,830	$3,400,400	1,104,076	$3.08
Commercial Medium Strength (S-CMU & S-CMUF)	1,170	$2.30	$32,303	$3,136,834	687,454	$4.56
Commercial High Strength (S-CHU & S-CHUF)	37	$2.30	$1,029	$224,506	26,012	$8.63
Totals	79,953	-----	$2,206,699	$26,920,501	9,109,278	-----

Notes: Revenue requirements are based on FY 16-17 actuals.
Where C=A*B*12, Where C+D= Total Revenue Requirements/Class (Table 6)

As previously discussed in the development of the revenue requirement analysis, the proposed rate adjustments will not fully fund all of the Wastewater Fund's operating and capital costs. However, the cost of service analysis assumes that sufficient funding of the revenue requirements are to be adopted. Given that rates will not be set at a level to fully fund operating and capital needs in the short-term, the unit costs/rates for the volume charges shown in Table 7 will not be implemented. Rather, the cost of service compared the estimated unit costs to the current rates to determine if the ratios between customer classes (proportionality) were maintained and to assure that no customer class current rates exceed the cost of service costs. Table 8 provides a summary of the unit cost ratios for the current rates and the estimated unit costs of service.

TABLE 8
UNIT COST OF SERVICE COMPARISON BY CUSTOMER CLASS

Customer Class	Estimated Unit Cost ($/HCF) (a)	Estimated Cost Ratio	Current Unit Cost ($/HCF) (b)	Current Cost Ratio
Single Family (S-SFU & S-SFUF)	$2.71	1.00	$1.23	1.00
Multiple Family (S-MFU & S-MFUF)	$2.80	1.03	$1.31	1.07
Commercial Low Strength (S-CLU & S-CLUF)	$3.08	1.14	$1.39	1.13
Commercial Medium Strength (S-CMU & S-CMUF)	$4.56	1.68	$2.02	1.64
Commercial High Strength (S-CHU & S-CHUF)	$8.63	3.18	$3.85	3.13

(a) Estimated Unit Cost, represents the level of rate needed to meet actual costs.
(b) Current Unit Costs, are the current wastewater usage rates.

As shown, the cost of service estimated cost ratio is comparable to the ratio of current costs or customer rates. While some minor differences exist, the overall allocation of costs between customers appears to be reasonable and the current rate structure adequately reflects the proportional allocation of costs. In reaching this conclusion, one of the variables impacting the cost allocations is the trend of declining per capita water consumption for residential customers, along with the past several years of drought conditions. These conditions certainly have an impact upon consumptive use and cost allocations and do not reflect future winter water consumption patterns which are used to establish the basis for allocating costs for sewer related services over the next four year period. This is also a single point in time, reaching conclusions based on one data point that may or may not reflect customer impacts on the system can result in rates that do not reflect actual customer impacts on the sewer system.

A second notable finding demonstrated in Table 8 is that the estimated unit costs of service are greater than the unit rates being charged for all customer class. This finding confirms that no customer class is paying in excess of its cost of service.

4.3 Summary of the Cost of Service Analysis

The cost of service analysis was developed based on the industry standard methodologies as provided in the WEF MOP No. 27. Based on the results of the cost of service analysis, the changing usage patterns and current drought, the remainder of this study focuses on the City's overall rate adjustment needs to stabilize the Wastewater Fund financials. As the City continues to monitor rates and cost of

service results through future studies, cost of service adjustments and rate structure refinements may be necessary to reflect future customer consumption and wastewater discharge patterns.

For this study, and for projecting revenues and expenses, the consumption for each class of service was assumed to remain near current levels due to the probability of the drought continuing and the minimal growth projections provided by the City. Given the conditions and findings noted in the development of the cost of service analysis, 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.

5. Current Wastewater Rates and Fees

Historically, the City's wastewater rates have been relatively low. In fact, Glendale has not increased its wastewater rates since 1999, resulting in the current rates being 25 to 70% lower than wastewater rates in surrounding communities. Since that time, the only change in rates has been the annual change to the Single Family Residential (SFR) rate to adjust to actual winter water usage values, which by design did not generate additional revenues for the Wastewater Fund.

5.1 Current Wastewater Rates

The City's current wastewater rate structure is based on a uniform fixed rate for all utility accounts, with variable revenues based on wastewater-billable water consumption under unique rates for five different user classifications. The Single Family Residential (SFR) customer class has an additional rate structure element, whereby actual water usage during the January - March billing cycles is used to represent each account's wastewater discharges for the following year. To remain revenue neutral, the average rate or charge per 100 cubic feet (Hcf) of water used is adjusted annually based on the total water usage for this customer class.

While this account-level rate is considered by most agencies to be more equitable than an all fixed charge structure, the City's current provision to remain revenue neutral minimizes the increased revenues that should be realized from new SFR accounts. The City's current wastewater rates and rate structure are shown in Table 9. The basis for the original rate adoption was in 1999. As such, with an average annual inflation of 2.5 to 3.0%, the City has not passed on the 60 to 75% increase in costs associated with inflation over the last 19 years.

TABLE 9

CURRENT WASTEWATER RATES

User Class	Charge
All Customers	**Service Charge (a)** $2.30
Customer Specific	**Usage Charge (b)**
Residential	
Single Family Dwelling (c)	$1.23
Multi-family Dwelling	$1.31
Non-Residential	
Low Strength	$1.39
Medium Strength	$2.02
High Strength	$3.85

(a) Service Charge is applied per electric meter/month.
(b) Usage charge is per Hcf of billable water usage.
(c) Single Family usage charge based on annual winter water assessment.
Unit rate is adjusted annually to remain revenue neutral.

As shown in Table 9, the City's current wastewater rates consist of a $2.30 fixed monthly service charge for each utility account electric meter, and a quantity charge varying from $1.23 to $3.85 per 100 cubic feet (Hcf) of consumption. Non-residential user classes are based on low, medium and high wastewater strength discharge categories, where strength is defined by the combined concentration of BOD and TSS. To simplify the assignment of new and existing wastewater accounts to the appropriate user class, the City retains a list of business categories as defined by the North American Industry Classification System (NAICS) for each customer class.

5.2 Current Wastewater Facility Charges (Connection Fees)

The City of Los Angeles levies a Wastewater Facility Charge (currently named Amalgamated Sewer System Facility Charges (ASSFCs)), to recover the costs of new development's impact on the Amalgamated wastewater system. Glendale collects this fee from new development to compensate Los Angeles for growth's impact on the regional system. As such, the current revenues received from new development are pass-through revenues needed to fund a portion of Glendale's share of Amalgamated system capital expenditures. Based on the magnitude of the ASSFCs, no additional facility charges are collected for local system developer-related improvements at this time.

6. Proposed Wastewater Rates

Proposed wastewater rates have been developed to meet the revenue requirement, cost of service, and rate design requirements of the City's wastewater utility. As indicated in Section 2, revenues for the last two fiscal years generated from wastewater rates are approximately $14 Million per year.

With the increase in Amalgamated System costs, the phasing in of annual depreciation expense, and the allocation of costs between the wastewater utility and other funds, approximately $22 to 30 Million will be needed annually to meet the Wastewater Fund's obligations. Development of the proposed charges, derivation of typical monthly bills, and a comparison of wastewater charges in other communities is provided in the following sections.

6.1 Development of Cost-Based Rates

Developing cost-based and equitable rates is of paramount importance in developing proposed wastewater rates. While always a key consideration in developing rates, meeting the legal requirements, and documenting the steps taken to meet the requirements, has been in the forefront with the recent legal challenges in the State of California on utility rates. Given this, the development of the City's proposed wastewater rates have been developed to meet the legal requirements of California Constitution article XIII D, section 6 (Article XIII D). A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally allocated between the various customer classes of service.

It is important to note that there is no single methodology for equitably assigning costs to the various customer groups. The Water Environment Federation Manual of Practice #27 provides various methodologies which may be used to establish cost-based rates. Unfortunately, Article XII D is not prescriptive and does not provide a specific methodology for establishing rates. Given that, the City's proposed wastewater rates are developed based on generally accepted rate setting methodologies to meet the requirements of Article XIII D. The primary elements of the rate study findings include:

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

Based on these findings, it is concluded that the City's wastewater rates provided herein, meet the legal requirements of Article XIII D.

6.2 Development of Proposed Wastewater Rates

As discussed in Section 3, wastewater rates are proposed to support the financial health of the City's wastewater utility system over the coming four years. There is a wide range of pricing strategies that could be followed to generate the funds needed to meet the City's financial obligations. Foremost among the rate and pricing strategies deemed important for the City's proposed rate structure is:

- Fixed Rates: Charge a fixed amount for all residential customers, regardless of estimated wastewater discharge levels. This pricing strategy is commonplace, is easy to administer, but fails to recognize variations in demand on the wastewater system by larger users. As is the case for all wastewater utilities, 60 to 80 percent of the costs to operate and manage the City's system is essentially fixed (i.e., does not vary with flow). It is for this reason that many utilities utilize this rate structure method for SFR wastewater rates. While fixed revenue benefits a utility's financial stability, it does have some negative aspects; this rate element typically inhibits low volume customers' ability to reduce their utility bill and may minimize water conservation efforts.
- Pay for What You Use: Structure wastewater service billing according to actual wastewater generation. This "pay for what you use" principle is what was adopted by the City with the 1999 Wastewater Rate Study when the account-level "winter-water" rate structure for the Single Family customer class was included in the wastewater rate structure. Accordingly, the pay for what you use structure is familiar, and closely links wastewater billings with actual flows into the system.
- Adherence to Cost of Service Requirements. A cornerstone rate restructuring consideration is the need to recover the costs associated with providing service to its customers in a fair and equitable (proportional) manner. These "fair and equitable" guidelines have been an element of wastewater charges for over 40 years through the original provisions of the Federal Clean Water Act, and administered by the State Water Resources Control Board.

  The primary requirements of these cost of service provisions is the need for non-domestic dischargers to pay for any additional strength that is treated at the local publicly owned treatment works. The City's current non-residential low, medium, and high strength customer classes were developed specifically to meet these costs of service requirements. Moreover, a cost of service test was performed herein in accordance with the Water Environment Federation Manual of Practice No. 27 to evaluate the current ratios of costs and revenues among these classes. The findings of this assessment confirm that the City's current rate structure adheres to these costs of service requirements.

Under the direction of City staff, a variety of rate structuring alternatives were evaluated for revenue sufficiency, equity, administrative requirements, and conformance with City policies. As a result of this review and analysis, it is recommended the current wastewater rate structure be continued, with a few revisions. The resulting proposed rate structure is as follows:

- Retain the basic “pay for what you use” rate structure. This includes utilizing account-level metered water usage taken during the January through March period (“winter-water”), when outdoor irrigation is at a minimum as the basis for monthly wastewater discharge for each Single Family customer. As such, these metered values will provide the account-level quantity of wastewater for each SFR customer.

  The recommended change to the existing SFR structure is based on a general need for administrative simplicity and the fact that additional rate increases are being proposed for all customer classes. Given these two conditions, it is recommended that the current process of annually reconciling SFR winter water usage with revenue requirements be eliminated and the account-level winter water usage be billed based on the usage rate (in $/Hcf) in affect at that time. Each single family dwelling will continue to have a uniform wastewater bill for one year based on their unique wintertime water usage, but a new usage rate will not be calculated based on overall SFR usage, but on the adopted unit rate per customer class. Changes in future rates will be based on the adopted rates and rate increases.

- Retain the current ratio of usage based charges among the City’s five customer classes. The cost of service evaluation performed herein identified the system costs and tested their recovery by customer class to confirm the equity in the City’s wastewater rate structure. Accordingly, it is proposed the City maintain the balance of cost recovery implicit in the current usage rates by customer class as they adhere to the cost of service findings.

- Accompanying the decision to retain the current rate structure and recover a significant portion of wastewater costs based on water usage, is a continuation of the current level of risk and financial vulnerability the Wastewater Fund incurs from reduced water usage. Based on recent fund performance, estimated impact on the City’s small usage customers, and discussions with City staff, it was determined that the City should continue its current mix of fixed and variable revenues at this time. Given the general need and benefits associated with additional fixed revenues, it is recommended the City consider increasing fixed rates at a greater level than variable usage rates in future wastewater rate studies to promote additional financial stability for the Wastewater Fund. Given the disparity of revenues and expenses, the cost of service analysis confirmed that the revenues received from each of the five customer classes is less than the cost of service allocated to that class.

Consistent with the revenue requirements shown in Table 5, and the need to eliminate the revenue neutrality provision for the Single Family customer class, new fixed and variable usage-based charges are derived. The resulting proposed charges for the four -year rate period are shown in Table 10.

The rates outlined herein are intended to improve the financial position of the City’s Wastewater Fund and eliminate the administrative issues associated with the annual reconciliation requirements of the current Single Family revenue-neutral rate structure. As noted previously, with additional City of Los Angeles rate increases, unpredictable Amalgamated system capital expenditures and uncertainties in projected accounts and sewer-based water usage, additional scrutiny of future costs and revenues should be performed as an element of budgeting over the next several years. The proposed rate structure continues with the general "pay-for-what-you-use" philosophy. Annual

increases in wastewater rates are proposed to be implemented on July 1, the beginning of each new fiscal year, with the first increase scheduled for July 1, 2017.

TABLE 10
PROPOSED WASTEWATER RATES

Description of Rates	Projected			
	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Proposed/Projected Rates				
Monthly Flat Fee per Electrical Account	$3.93	$4.21	$4.36	$4.49
Single Family Winter Water Charge ($/Hcf)	$2.10	$2.25	$2.33	$2.40
Multi Family Charge ($/Hcf)	$2.24	$2.40	$2.49	$2.56
Commercial - Low Strength Charge ($/Hcf)	$2.38	$2.54	$2.64	$2.72
Commercial - Med Strength Charge ($/Hcf)	$3.45	$3.70	$3.83	$3.95
Commercial - High Strength Charge ($/Hcf)	$6.58	$7.04	$7.30	$7.52

Notes: All rate changes are scheduled to be effective July 1 each year.

6.3 Comparison of Monthly Bills

Typical customer bills are often developed to evaluate the impact of a wastewater rate schedule on a utility's customers. Since there is no change in the basis of cost recovery among the City's wastewater system customer classes, the change in customer bills is essentially limited to the proposed percent increase in the variable usage rates. To demonstrate this impact on the City's single family customers, a comparison of typical bills under Glendale's current and alternative rates has been derived and contrasted with other local Amalgamated System communities. The resulting comparison of monthly single-family bills is provided in Table 11.

TABLE 11

COMPARISION OF TYPICAL SINGLE FAMILY BILLS

Agency	Typical Bill Per Month
Glendale - Current	$12.14
Glendale - FY 18-19 Projected	$20.76
Santa Monica [a]	$18.97
Burbank [b]	$24.67
San Fernando [b]	$32.70
CVWD [c]	$34.11
Los Angeles [d]	$38.40
Beverly Hills [b]	$43.69
Six City Average	$32.09

Notes: Data from local agency surveys (as of 2/5/18).
Bill is based on an estimated usage of 8 Hcf/Month
(a) Charge is equal to HCF of water used X 0.51 X $4.65
(b) Sewer rates are fixed (no usage element).
(c) Charge is $45.95 bimonthly fixed plus $1.86/1000 Gallons
(d) Charge is $4.80 per HCF per month.

There are a number of significant observations that can be derived from a review of the community survey results. First, it's important to note that three of the six agencies surveyed charge their single family customers a flat monthly charge, and is therefore independent of the amount of water used or wastewater discharged. While this flat charge approach is very common, it does deviate from the City's existing pay for what you use ratemaking approach. As such, a flat rate approach tends to adversely impact small residential customers and reduce the bills for large users.

Secondly, the City's current charge is lower than the surveyed agencies for the average Glendale customer. In fact, the current charge is the lowest amount charged by the six agencies. For the projected change for FY 18-19, it is important to note that even with this increase, Glendale will still be near the bottom of the survey group. Moreover, since the surveyed rates are based on current rates in place, it can be assumed that most, if not all, agencies will have an additional rate increases prior to July 1, 2018. Given Glendale's predominantly usage-based rate structure, each City customer has the ability to reduce their actual bill through purposeful interior water conservation.

In addition to the above, it should be noted that this rate survey does not provide the full picture of the utility's position. For example, some of the agencies may have additional increases that are in process or being proposed, may have varying wastewater service program cost, quality, and reliability issues or objectives, and there is often a wide range of variance in local level of service, capital reinvestment, and preventive maintenance considerations. Given the current condition of the City's utility, the City's wastewater rates appear appropriate to meet the Wastewater Fund's revenue requirements and desired level of service.

6.4 Summary of Proposed Wastewater Rates

The rates outlined herein are intended to fund the identified local and amalgamated wastewater system capital improvements, provide the necessary funds for ongoing system management and operation, and begin to return the fund to a desired level of financial performance. The proposed rates are consistent with the SWRCB and EPA criteria and WEF cost of service principles, and continue to offer a rate structure that is consistent with the "pay-for-what-you-use" philosophy.

With current revenues of approximately $14 Million and total annual operating and capital costs of approximately $30 Million, an increase in wastewater revenues is essential for long-term financial stability. The proposed four-year rate plan is expected to close the disparity in revenues and costs for the Wastewater Fund and improve fund stability in the coming years. As discussed with staff, while the fund balance in the Wastewater Fund is projected to fall well below target reserve levels, the ability to pursue potential reductions in itemized capital projects at the LAGWRP should enable the City to maintain a positive cash flow and meet the desired level of fund reserves over a longer term planning horizon.

In addition to the rate-related adjustments provided herein, the City should plan for the methodical review of system costs, wastewater discharges, and utility rates. Much of this work can be incorporated as an element of the annual budget process as additional information is being developed and evaluated. Over the next few years, an important element of this review is the need to confirm the level of projected Amalgamated System operation and maintenance costs and capital improvements program expenditures in the Amalgamated system as well as at the LAGWRP, and closely monitor billable water usage that is used to generate wastewater revenues. The findings of this cost and revenue review may require an adjustment to the rate plan derived herein.

TECHNICAL APPENDICES

Appendix A

Miscellaneous Supporting Information

APPENDIX A
PROJECTED CAPITAL IMPROVEMENT PROGRAM - ESTIMATED 10 YEAR PLAN

	Projected									
Description	**FY 2017-18**	**FY 2018-19**	**FY 2019-20**	**FY 2020-21**	**FY 2021-22**	**FY 2022-23**	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**	**FY 2026-27**
Glendale Local City CIP Expenditures (525-501)										
Pipeline Rehabilitation – Ongoing	$150,000	$125,000	$50,000	$50,000	$50,000	$1,008,000	$1,038,000	$1,070,000	$1,104,000	$1,139,000
Lexington Drive Sanitary Sewer Upgrade	$0	$0	$0	$0	$0	$1,500,000	$0	$0	$0	$0
Tyburn RR Sanitary Sewer Crossing	$0	$0	$0	$0	$0	$500,000	$1,500,000	$0	$0	$0
Verdugo Rd Sanitary Sewer Upgrade	$0	$0	$400,000	$1,000,000	$600,000	$0	$0	$0	$0	$0
Sanitary Sewer Cleaning and Lining	$150,000	$120,000	$0	$0	$0	$150,000	$160,000	$170,000	$180,000	$190,000
Emergency Wastewater Repair Program	$0	$0	$0	$0	$170,000	$182,000	$191,000	$201,000	$211,000	$221,000
Miscellaneous Capital Expenditures	$200,000	$144,000	$152,000	$159,000	$167,000	$176,000	$184,000	$194,000	$203,000	$213,000
Subtotal Local Capital	$500,000	$389,000	$602,000	$1,209,000	$987,000	$3,516,000	$3,073,000	$1,635,000	$1,698,000	$1,763,000
City of Los Angeles Capital Charges (525 -501)										
LAGWRP CIP Summary (City's 1/2)	$2,339,400	$12,804,100	$8,864,400	$1,788,900	$697,700	$1,782,600	$2,000,000	$2,000,000	$2,000,000	$2,000,000
Amalgamated Capital Charges	$4,213,300	$2,464,800	$3,877,100	$459,200	$1,532,160	$1,608,800	$1,689,200	$1,773,700	$1,862,400	$1,955,500
Subtotal City of Los Angeles Capital Charges	$6,552,700	$15,268,900	$12,741,500	$2,248,100	$2,229,860	$3,391,400	$3,689,200	$3,773,700	$3,862,400	$3,955,500
Total Capital Expenditures	$7,052,700	$15,657,900	$13,343,500	$3,457,100	$3,216,900	$6,907,400	$6,762,200	$5,408,700	$5,560,400	$5,718,500

Notes: Local CIP provided by Glendale Public Works / Engineering Department.
LAG CIP for FY 22-23 and beyond is estimated to approximate the typical year average spending.
Amalgamated CIP estimates begin in FY 21-22.

APPENDIX A - DETAILED OPERATING COST PROJECTION

	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22
SANITARY SEWERS					
Salaries & Benefits					
Salaries	$1,034,919	$1,065,940	$1,097,880	$1,130,820	$1,164,740
Overtime	$7,000	$7,210	$7,430	$7,650	$7,880
Benefits	$238,880	$246,050	$253,430	$261,030	$268,860
PERS Retirement	$270,750	$475,170	$494,840	$515,360	$536,940
PERS cost sharing	($40,652)	($41,870)	($43,130)	($44,420)	($45,750)
Salary charges in (out)	($277,156)	($285,470)	($294,030)	($302,850)	($311,940)
Salaries & Benefits Total (Rounded)	$1,233,700	$1,467,000	$1,516,400	$1,567,600	$1,620,700
Maintenance & Operation					
Utilities	$17,850	$18,390	$18,940	$19,510	$20,100
Contractual services (a)	$682,911	$703,400	$724,500	$746,250	$768,710
Cost allocation charge (b)	$1,716,730	$2,999,371	$2,999,371	$2,999,371	$3,835,654
Repairs to equipment	$52,000	$53,560	$55,170	$56,830	$58,530
Fleet / equip rental charge	$226,889	$233,700	$240,710	$247,930	$255,370
ISD service charge	$57,303	$59,020	$60,790	$62,610	$64,490
GWP municipal billing	$438,058	$451,200	$464,740	$478,680	$493,040
Postage	$1,000	$1,030	$1,060	$1,090	$1,120
Travel	$3,000	$3,090	$3,180	$3,280	$3,380
Training	$8,000	$8,240	$8,490	$8,740	$9,000
Computer software	$2,000	$2,060	$2,120	$2,180	$2,250
Liability Insurance	$28,023	$28,860	$29,730	$30,620	$31,540
Regulatory	$125,000	$128,750	$132,610	$136,590	$140,690
Membership & dues	$800	$820	$840	$870	$900
Furniture & equipment	$3,000	$3,090	$3,180	$3,280	$3,380
Office supplies	$3,750	$3,860	$3,980	$4,100	$4,220
Small tools	$500	$520	$540	$560	$580
General supplies	$90,000	$92,700	$95,480	$98,340	$101,290
Depreciation (a)	$0	$0	$0	$0	$0
Amortization expense (a)	$0	$0	$0	$0	$0
Uncollectible accounts	$40,000	$41,200	$42,440	$43,710	$45,020
Business meetings	$450	$460	$470	$480	$490
Miscellaneous	$2,750	$2,830	$2,910	$3,000	$3,090
Charges-other depts	($6,648)	($6,850)	($7,060)	($7,270)	($7,490)
Maintenance & Operation Total (Rounded)	$3,493,400	$4,829,300	$4,884,200	$4,940,800	$5,835,400

(a) Contractual Services costs from Los Angeles and Depreciation/Amortization expenses are shown separately on page 2.
(b) City of Glendale, Public Safety Cost Reimbursement Study, dated 4/12/17.

APPENDIX A - DETAILED OPERATING COST PROJECTION

	FY 17/18	FY 18/19	FY 19/20	FY 20/21	FY 21/22
WASTEWATER MAINTENANCE					
Salaries & Benefits					
Salaries	$1,245,175	$1,282,530	$1,321,010	$1,360,640	$1,401,460
Overtime	$25,000	$25,750	$26,520	$27,320	$28,140
Hourly wages	$25,000	$25,750	$26,520	$27,320	$28,140
Benefits	$311,917	$321,270	$330,910	$340,840	$351,070
PERS Retirement	$313,375	$572,680	$596,660	$621,830	$648,200
PERS cost sharing	($47,176)	($48,590)	($50,050)	($51,550)	($53,100)
Salaries & Benefits Total (Rounded)	$1,873,300	$2,179,400	$2,251,600	$2,326,400	$2,403,900
Maintenance & Operation					
Repairs-bldgs & grounds	$500	$520	$540	$560	$580
Equipment usage	$0	$0	$0	$0	$0
Contractual services	$260,000	$267,800	$275,815	$284,055	$292,580
Cost allocation charge	$76,397	$78,690	$81,050	$83,480	$85,980
Repairs to equipment	$35,000	$36,050	$37,130	$38,240	$39,390
ISD service charge	$99,316	$102,300	$105,370	$108,530	$111,790
GWP municipal billing	$23,056	$23,750	$24,460	$25,190	$25,950
Postage	$2,200	$2,270	$2,340	$2,410	$2,480
Laundry & towel service	$6,000	$6,180	$6,370	$6,560	$6,760
Training	$10,000	$10,300	$10,610	$10,930	$11,260
Computer software	$15,000	$15,450	$15,910	$16,390	$16,880
Liability Insurance	$34,966	$36,010	$37,090	$38,200	$39,350
Membership & dues	$2,250	$2,320	$2,390	$2,460	$2,530
Furniture & equipment	$6,500	$6,700	$6,900	$7,110	$7,320
Office supplies	$2,500	$2,580	$2,660	$2,740	$2,820
Small tools	$500	$520	$540	$560	$580
General supplies	$95,000	$97,850	$100,790	$103,810	$106,920
Depreciation	$0	$0	$0	$0	$0
Business meetings	500	$520	$540	$560	$580
Miscellaneous	500	$520	$540	$560	$580
Regulatory	$0	$0	$0	$0	$0
Maintenance & Operation Total (Rounded)	$670,200	$690,300	$711,000	$732,300	$754,300
Misc. Capital Outlay Total (Rounded)	$30,500	$31,400	$32,300	$33,300	$34,300
Contractual Services - ASSSCs(c)	$5,278,100	$4,673,300	$4,756,100	$4,855,800	$5,134,300
Contractual Services - LAGWRP(c)	$2,611,300	$2,689,700	$2,770,400	$2,853,500	$2,939,100
Contractual Services - LA Total	$7,889,400	$7,363,000	$7,526,500	$7,709,300	$8,073,400
Depreciation	$0	$0	$0	$150,000	$300,000
Amortization expense	$0	$0	$0	$150,000	$300,000
Depreciation & Amortization Total	$0	$0	$0	$300,000	$600,000
Total All Costs (Report Table 3)	**$15,190,500**	**$16,560,400**	**$16,922,000**	**$17,609,700**	**$19,322,000**

(c) City of Los Angeles Contractual Services costs for Amalgamated System Sewerage System Charges per City of Los Angeles Transmittal of Billing Projections for FY 2016-17 through FY 2020-21 and reduced for Chevy Chase Project. FY 20-21 & beyond inflated 5%/Yr. Los Angeles-Glendale Water Reclamation Plant costs per City of Los Angeles Budget 17-18 Book on City of Los Angeles Financial Mangement Division's Server and Nov 2017 Cutlist.