

# CITY OF PINOLE



## Wastewater Rate Study

MAY 2018



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## Section 1 - Introduction

### 1.1. Introduction

The City of Pinole (“City”) Wastewater Division operates, maintains and services the sewer collection system for the City, as well as the wastewater treatment plant that serves approximately 20,000 residents of Pinole and 25,000 residents of the City of Hercules (“Hercules”). The City and its residents receive water and water related data from East Bay Municipal Utility District (EBMUD). EBMUD operates and monitors the water system along with meter reading for the wastewater customers of the City. The EBMUD wastewater system serves approximately 685,000 people in an 88-square-mile area of Alameda and Contra Costa counties along the Bay’s east shore, extending from Richmond on the north, southward to Oakland.

Although most of Pinole’s residents receive wastewater service from the City, there is a small portion of the City that receives wastewater service from West County Sanitary District. Those residents and the costs associated with their wastewater service are not considered as part of this rate analysis.

The city provides service to portions of Hercules under a Joint Powers agreement. Hercules pays for those services directly as a wholesale purchaser on behalf of its retail customers. The City invoices Hercules for the services provided at the wastewater treatment plant based on their proportion of actual flow. The total flow split varies based on retail customer demands and the effects of inflow and infiltration. The costs incurred by the City for managing the collection system is accounted for separately and such costs are not passed on to Hercules.

Willdan Financial Services (“Willdan”) was retained by the City to conduct a Wastewater Rate Study for the City’s wastewater utility (“Utility”). This report details the results of the Wastewater Rate Study analysis for the forecast period, Fiscal Year (FY) 2018-19 to FY 2022-23, the results of which are presented in this Wastewater Rate Study Report.

The results of the Wastewater Rate Study presented herein include a financial plan and rate structure designed to provide revenues sufficient to fund the ongoing operating and capital costs necessary to



operate the City's Utility, while meeting the financial requirements and goals set forth by the City for the Utility enterprise fund.

## 1.2. Goals and Objectives

The goal of the Wastewater Rate Study is to develop cost based rates that will allow the City to meet its ongoing costs (operations & maintenance and capital) as well as maintain industry standard financially prudent cash reserves for the Utility. More specifically the Wastewater Rate Study was undertaken to:

- Conduct the analysis in accordance with industry standards consistent with Water Environment Federation ("WEF") and American Water Works Association (AWWA) guidelines;
- Develop financial plans and rates consistent with industry standards and best practices while recognizing the needs specific to the City;
- Design rates that will meet the City's revenue requirements based on City specific wastewater Utility costs and reserve requirements; and
- Develop rates that comply with Proposition 218 requirements.

## 1.3. Overview of the Wastewater Rate Study Process

The Wastewater Rate Study process consists of two primary study components. First, make a determination of the adequacy of system revenues to meet system expenses during the study forecast period. The result of this component, known as the Revenue Sufficiency Analysis, is an assessment of the ability of the existing sewer rate revenue stream to meet the projected financial requirements of the system during the forecast period and, to the extent required, the identification of the magnitude and timing of any required rate adjustments.

Second, develop specific rates and charges that provide sufficient revenue, as identified in the Revenue Sufficiency Analysis, to recover costs in a manner consistent with common rate-making practices. This component is known as the Rate Design Analysis.

## 1.4. Organization of this Report

This Wastewater Rate Study presents an overview of the rate-making concepts utilized in the development of the analysis contained herein. The analysis is followed by a discussion of the data, assumptions and results associated with each component of the analysis. Finally, appendices with detailed



schedules are presented for further investigation into the data, assumptions and calculations that drive the results presented in the Wastewater Rate Study. The report is organized as follows:

- Section 1 - Introduction
- Section 2 – Overview of Utility Rate-Making Principles, Processes and Issues
- Section 3 – Wastewater Rate Study Development and Results
- Section 4 – Conclusions and Recommendations



### **1.5. Reliance on Data**

During the course of this project the City (and/or its representatives) provided Willdan with a variety of technical information, including cost and revenue data. Additionally, Willdan received customer data such as: customer meter sizes, metered water usage (flow) and customer class from EBMUD. Willdan did not independently assess or test for the accuracy of such data – historical or projected, but relied on this data in the formulation of its findings and subsequent recommendations, as well as in the preparation of this report. As is often the case, there will be differences between actual and projected data, and these differences may be significant. Therefore, Willdan does not take responsibility for the accuracy of data or projections provided by or prepared on behalf of the City or EBMUD, nor does Willdan have responsibility for updating this report for events occurring after the date of this report.

### **1.6. Acknowledgements**

Willdan wishes to extend our appreciation to the City and its staff for their cooperation during the progress of this study. In particular, Willdan would like to thank Ms. Tamara Miller, Development Service Director/City Engineer for her guidance and assistance throughout this project.



## Section 2 - Overview of Utility Rate-Making Principles, Processes and Issues

### 2.1. Introduction

This Wastewater Rate Study utilized generally accepted rate-making principles established by the Water Environment Federation (WEF) in its “Financing and Charges for Wastewater Systems, Manual of Practice No. 27 (2004)” and the American Water Works Association (AWWA). Such principles are applied in the development of rates and charges that are projected to: 1) generate sufficient revenue to meet the financial requirements of the wastewater Utility, and 2) address the need to recover costs from users in a manner proportionate to the cost of providing service on a parcel basis, and equitable relative to the service provided. A discussion of some of the key principles of rate-making, and how the processes employed herein are guided by those principles, is presented below.

### 2.2. Discussion of General Rate-Making Principles

While the individual rates for the Utility vary based on a variety of factors, the development of rates should, for the most part, be consistent with generally accepted principles set forth in utility rate-making practice and literature, and in compliance with State law. State law requires that property-related fees and charges (including water and wastewater utility rates) must be based upon the proportionate cost of providing the services. The principles by which rate practitioners are guided is that rates designed for any utility should strike a reasonable balance between several key factors. In general, rates should:

- Generate a stable rate revenue stream which, when combined with other sources of funds, is sufficient to meet the financial requirements and goals of the utility;
- Be equitable – that is, they should generate revenues from customer classes that are reasonably in proportion to the cost to provide service to that customer class;
- Be easy to understand by customers; and
- Be easy to administer by the utility.

Striking the appropriate balance between the principles of rate-making is the result of a detailed process of evaluation of revenue requirements and cost of service, and how those translate into the rate design alternatives that meet legal requirements and the specific objectives of the utility under the circumstances in which the utility operates.



## 2.3. The Revenue Sufficiency Process

In order to develop rates and charges that will generate sufficient revenue to meet the fiscal requirements of the Utility, a determination of the annual rate revenue required must be completed. The first step in the process is the Revenue Sufficiency Analysis. The Revenue Sufficiency Analysis compares the forecasted revenues of the utility under its existing rates to its forecasted operations and maintenance, capital, and reserve costs to determine the adequacy of the existing rates to recover the Utility's costs.

The process employed in the Revenue Sufficiency Analysis involves a comprehensive review of operating, maintenance and capital budgets for the Utility, and results in the identification of revenue requirements of the system. Such revenue requirements include operating expenses, capital expenses (minor and major), debt service (including a provision for debt service coverage), transfers, and the maintenance of both restricted and unrestricted reserves at appropriate levels. The revenue requirements are then compared to the total sources of funds available during each year of the forecast period to determine the adequacy of projected revenues to meet projected revenue requirements. To the extent that the existing revenue stream is not sufficient to meet the annual revenue requirements of the system, rate adjustments are required.

### 2.3.1 Determination of the Revenue Requirements

The City, as is typical for a public utility, operates its Utility on a "cash basis". Under this type of approach, revenues and expenses are recognized at the time cash is received or paid out. Revenue requirements are determined for a specified period (in the case of the City an annual fiscal year), by summing the total anticipated expenditures to be paid out during the fiscal year. Where cash flows and balances are insufficient, the revenue requirements analysis recommends the needed additional cash flows to meet all funding goals. The primary categories of expenditures are as follows:

- Operations and Maintenance (O&M) expenses, such as salaries and benefits of utility personnel, treatment costs;
- Debt service including applicable coverage requirements; and
- Other expenditures such as transfers to operating reserves and capital cost.





## 2.4. The Rate Design Process

With the rate revenue requirement determined in the Revenue Sufficiency Analysis, the development of specific rates and charges can commence. The process involves identifying the manner in which the revenues will be recovered, and the billing units to be used to recover the required revenues.

In the State of California, rates must adhere to and conform to the California Constitution article XIII D, section 6 commonly referred to as Proposition 218 (Prop 218). More specifically, Prop 218 requires that property related fees and charges, such as sewer rates, must not exceed the reasonable cost of providing the service associated with the fee or charge, and shall not exceed the proportional cost of the service attributable to the parcel that is subject to the fee or charge.

In addition to following State law, another key principle for a comprehensive Wastewater Rate Study is found in economic theory, which suggests the price of a commodity must roughly equal its cost or value if equity among customers is to be maintained – i.e., cost-based. In terms of economic theory, the principle is that the price of a commodity (wastewater service) should be proportionately equal to its cost (the City's cost of providing the service). Because the City provides collection of wastewater flows and treatment, the rates assessed to customers should reflect the flows attributable to customers rather than both the strength and volume of flows contributed by each customer. Under the Cities current development status it is hard to assign strength factors due to commercial customers possibly having mixed use facilities which may only share one meter. Rates based on meter size and flow for the commercial customers is a far better measure for establishing rates giving the current circumstances.

This Wastewater Rate Study allocates the costs of providing service to users on an equitable, flow-based methodology and in compliance with Proposition 218 requirements.

## Section 3 - Wastewater Rate Study Development and Results

### 3.1. Revenue Sufficiency Analysis

#### 3.1.1 General Methodology

The general methodology utilized in the Revenue Sufficiency Analysis was discussed previously in Section 2.3. In summary, the level of revenues generated by rates must be sufficient to recover the revenue requirements, or projected expenditures of the Utility. To the extent that the projected revenue stream based upon current wastewater rates is not sufficient to meet the annual revenue requirements of the



system, rate adjustments are calculated to provide the revenue necessary to meet those expenditure needs, as well as satisfying the financial goals and objectives of the Utility. From a financial perspective, the City's wastewater system must "stand on its own" by meeting its financial obligations without assistance from other City funds. The financial plan was developed for the five-fiscal year period fiscal year (FY) 2018-19 through FY 2022-23

### **3.1.2 Data Items**

Key data items reviewed, discussed and incorporated into the Revenue Sufficiency Analysis include:

- Financial management goals of the City;
- FY 2017-18 fund balances;
- FY 2017-18 budget;
- Debt service schedules for existing loans; and
- Capital Improvement Program (CIP).

General assumptions utilized in the analysis include the following:

- System growth factor;
- Proposed new debt;
- Cost escalation factors; and
- Wastewater Treatment Plant renovation project, which includes increased operating costs, new debt and R & R.

A discussion of the use of each of the above data items and general assumptions is presented below.



### 3.1.3 FY 2017-18 Fund Balance

To better understand what funds the City will have on hand to start the forecast period, a review of fund balances from the FY 2017-18 period was discussed and reviewed with City staff. Assumptions were made to estimate the actual unrestricted cash balances available at the end of FY 2017-18, and therefore at the beginning of FY 2018-19. To determine the available cash balance at the end of FY 2017-18, a review of the City’s current assets and current liabilities as identified in the City’s FY 2016-17 Comprehensive Annual Financial Report (CAFR) was undertaken. A summary of the projected fund balances is presented in Table 3-1 below.

<b>RESERVE BALANCES</b>		<b>Projected For Fiscal Year Ending June 30:</b>								
		<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>				
<b>Unrestricted Reserves:</b>										
Beginning Fund Balance	\$	5,579,861	\$	6,690,214	\$	7,287,845	\$	6,879,487	\$	7,524,139
Transfer to Capital		1,885,000		985,000		960,000		960,000		960,000
Less Capital Expenditures		(885,000)		(472,500)		(1,387,000)		(350,000)		(350,000)
Remaining Operating Balance		110,353		85,131		18,642		34,652		79,930
<b>Ending Fund Balance</b>	<b>\$</b>	<b>6,690,214</b>	<b>\$</b>	<b>7,287,845</b>	<b>\$</b>	<b>6,879,487</b>	<b>\$</b>	<b>7,524,139</b>	<b>\$</b>	<b>8,214,069</b>

### 3.1.4 FY 2017-18 Budget

Staff provided Willdan with the FY 2018-19 preliminary budget, and associated line-item detail, as the basis for the projection of financial needs for FY 2018-19 (the “Base Year”). The FY 2017-2018 budget was also used as the basis for the projection of future budgetary line-items for the remainder of the forecast period. Cost escalation factors were reviewed by staff (see section 3.1.6.2) and were used to project line-item costs beyond the FY 2018-19 budget. Those factors were applied based on line-item cost classifications.

In order to maintain a certain level of liquidity, the study has developed a target of maintaining unrestricted working fund balance reserves in an amount greater than or equal to approximately 6 months of operating expenses for each year of the study period. Based on the projections developed in the analysis, under the current rates and rate structure, the City would be operating at a deficit and would not meet the fund balance targets.

A summary of the FY 2017-18 budget, and subsequent projected budgetary expenses and revenue deficit for the Base Year is presented below in **Table 3-2**.



<b>TABLE 3-2 FINANCIAL OVERVIEW - CURRENT RATES</b>	
<b>Description</b>	<b>Total</b>
<b>Revenues:</b>	
User Rate Revenues	\$ 4,877,608
Revenues Received From Hercules	1,719,678
<b>Total Revenues</b>	<b>\$ 6,597,286</b>
<b>System Expenditures:</b>	
O&M Costs - Treatment	\$ 3,649,662
O&M Costs - Collections	\$ 775,220
Debt Service (P&I)	517,097
Capital Transfer	1,200,000
R&R - Treatment	290,000
R&R - Collections	395,000
<b>Total Non-Operating</b>	<b>\$ 6,826,979</b>
<b>System Revenue Excess (Deficiency):</b>	
\$ Amount	\$ (229,693)
Percentage	-3.48%
<b>Debt Service Coverage</b>	<b>4.20</b>

### 3.1.5 Existing Debt Service

It is common practice for utility systems to utilize debt/loans to fund certain capital projects. The City currently has one outstanding Utility loan, the Wastewater Revenue Refunding Bond Series 2016. The annual payment requirements are relatively constant and will continue through FY 2036-37.

### 3.1.6 Capital Improvements Plan (CIP)

The City provided Willdan with a forecast of capital requirements for the five-year study period. The capital projects identified by the City are required to maintain service to customers by making investments in the collection system to repair or replace aging system components as they wear out over time. The City provided cost estimates for capital projects which were subsequently used in the analysis for rate-making purposes.



A summary table of the adjusted CIP for the FY 2018-19 – FY 2022-23 study period is presented below in

**Table 3-3.**

Description	Projected for Fiscal Year Ending June 30:					Total
	2019	2020	2021	2022	2023	
<b>Assumed Percentage of CIP Funded</b>	100%	100%	100%	100%	100%	
<b>Capital Projects:</b>						
Evaluation of Land Outfall - Engineering Only	\$ 75,000	\$ 0	\$ 0	\$ 0	\$ 0	\$ 75,000
Hazel Street Sewer Pump Station Rehabilitation	50,000	122,500	1,037,000	0	0	1,209,500
I&I Monitoring Program (Collection System Rehab	60,000	350,000	350,000	350,000	350,000	1,460,000
I&I Rehabilitation Program; Basin 3.1	350,000	0	0	0	0	350,000
I&I Rehabilitation Program; Basin 5.2 and 6.5	350,000	0	0	0	0	350,000
Replacement Storage Building and Improvements	0	0	0	0	0	0
Upgrades to Wastewater Treatment Plant	13,982,245	0	0	0	0	13,982,245
<b>TOTAL</b>	<b>\$14,867,245</b>	<b>\$ 472,500</b>	<b>\$ 1,387,000</b>	<b>\$ 350,000</b>	<b>\$ 350,000</b>	<b>\$17,426,745</b>
<b>FISCAL YEAR TOTAL</b>	<b>\$14,867,245</b>	<b>\$ 472,500</b>	<b>\$ 1,387,000</b>	<b>\$ 350,000</b>	<b>\$ 350,000</b>	<b>\$17,426,745</b>

**3.1.7 General Assumptions**

In order to develop the financial and rate projections, certain assumptions were made with regard to elements of the revenue sufficiency analysis. A summary of those assumptions is presented below.

**3.1.6.1. System Growth**

The City of Pinole is primarily built out, with development being limited to smaller infill projects. As such, the City does not foresee any significant impact to the wastewater facilities due to new growth. However, Hercules continues to develop and grow. Since Hercules is a wholesale customer of the City, its growth will have an impact on the system facilities, and on the share of wastewater treatment plant costs for which they will be responsible. Based on current operations, it is assumed that Hercules will represent an annual average of approximately 47% of wastewater treatment operation & maintenance costs. In the future, assuming that growth in Hercules continues, the proportionate share may change, and the share of treatment costs may need to be updated for future rate analyses.

**3.1.7.1. O&M Escalation Factors**

The O&M expenses are primarily those ongoing costs for labor, materials, supplies, services, etc., required to manage and operate the utility system on a day-to-day basis while maintaining a dependable level of service. The estimated O&M requirements are generally a function of a budgetary process and are directly related to the level of service provided to customers of the utility system. The projected Base Year revenue requirements, as well as the requirements for the remaining years of the study period are estimated by utilizing the budget as a basis and making annual escalation adjustments for each line-item



in accordance with historical cost escalation trends, as well as assumed future activities and events that may impact the system. Such projections include increasing applicable O&M expenses by inflationary and/or customer growth factors depending upon the nature of the expense, utilizing actual debt service requirements as provided in the applicable debt service schedules, using capital outlay estimates as provided by the City, and tying non-operating transfers to revenues or O&M expenses as applicable.

**3.1.7.2. Rate Revenue Increases Required**

The financial analysis of the Utility indicates that the increase in operating costs and payments associated with anticipated new debt is projected to outpace revenues at current rates. Revenue increases are therefore required in order to maintain the financial integrity of the Utility.

**3.1.7.3. Revenue Sufficiency Analysis Conclusions**

Based on the revenue requirements identified in the analysis, it is projected that:

- Revenue from existing rates are insufficient to meet the revenue requirements for FY 2018-19 through FY 2022-23;
- Rate adjustments are needed to keep pace with increasing O&M and capital costs; and
- The proposed rate adjustments developed in the study are based on the projected revenue requirements summarized in Table 3-4, and are anticipated to maintain the financial integrity of the Utility based upon the assumptions applied in the analysis.

Description	Projected For Fiscal Year Ending June 30:				
	2019	2020	2021	2022	2023
<b>Net Revenue Requirement For Projection Period:</b>					
O&M Expenses - Treatment	\$ 3,649,662	\$ 3,810,903	\$ 3,981,001	\$ 4,160,496	\$ 4,349,968
O&M Expenses - Collections	775,220	797,948	821,820	846,886	873,214
Non-Operating Expenses	2,402,097	2,476,495	2,586,324	2,617,880	2,619,998
<b>Total Expenditures</b>	<b>\$ 6,826,979</b>	<b>\$ 7,085,346</b>	<b>\$ 7,389,145</b>	<b>\$ 7,625,262</b>	<b>\$ 7,843,180</b>
Less Other Revenues	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
Revenues Received From Hercules	1,719,678	1,795,653	1,875,801	1,960,377	2,049,654
<b>Total Revenues</b>	<b>\$ 1,719,678</b>	<b>\$ 1,795,653</b>	<b>\$ 1,875,801</b>	<b>\$ 1,960,377</b>	<b>\$ 2,049,654</b>
<b>Net Requirement</b>	<b>\$ 5,107,301</b>	<b>\$ 5,289,693</b>	<b>\$ 5,513,344</b>	<b>\$ 5,664,885</b>	<b>\$ 5,793,526</b>



## 3.2. Rate Design Analysis

### 3.2.1 General Methodology

Based on the revenue requirements determined in the Revenue Sufficiency Analysis, the development of specific rates and charges was completed as described below.

The rate design goals of the City were reviewed to identify areas the City wanted to address during the study period. In addition, an assessment of the existing rate structure was completed to identify areas which have worked well for the City, and meet the general objectives of utility rate-making. Based on these considerations, the rate design process seeks to achieve the previously addressed industry standard objectives and be conducted consistent with the provisions of Proposition 218.

### 3.2.2 Review of Existing Rate Structure

The existing wastewater rates consist of 1) residential rates for single family multiple family customers, and 2) non-residential volumetric rates per 100 cubic feet based upon the amount of monthly metered water usage (i.e. billable wastewater flow). Residential properties are assessed a flat rate per month while commercial properties pay a rate based on their land-use class as assigned by the County tax, roll multiplied times the water usage amounts (CCF). The land use class rates for commercial customers vary based on criteria determined by WEF by using standard factors for relative strength loading for each classes. For residential customers, the Single-Family class represents standard, detached homes each served by their own connection to the system, while the Multiple Family class represents customers whereby more than one dwelling unit is served by a single connection (e.g. apartments, condominiums, duplexes, triplexes, etc.). The existing rates for wastewater service are summarized in Table 3-5.



**TABLE 3-5  
EXISTING RATES**

Description	Existing Rates	
		Wastewater
<b>Monthly Charge Per Dwelling Unit:</b>		
Single Family	\$	62.55
Multiple Family <sup>(1)</sup>	\$	52.26
<b>Volumetric Per 100 CF:</b>		
Auto Steam Cleaning	\$	21.00
Bars Without Dining Facilities	\$	7.41
Commercial Laundries	\$	9.53
Restaurants	\$	19.69
Gas & Oil Dealers/Svc Stations	\$	8.48
Hospitals/Health Services	\$	5.82
Hotels With Food	\$	13.89
Hotels Without Food Service	\$	6.28
Office	\$	6.88
Retail/Department Store	\$	5.79
General Commercial (All Other)	\$	7.51
Schools	\$	4.15
General Institutional (All Other)	\$	6.22

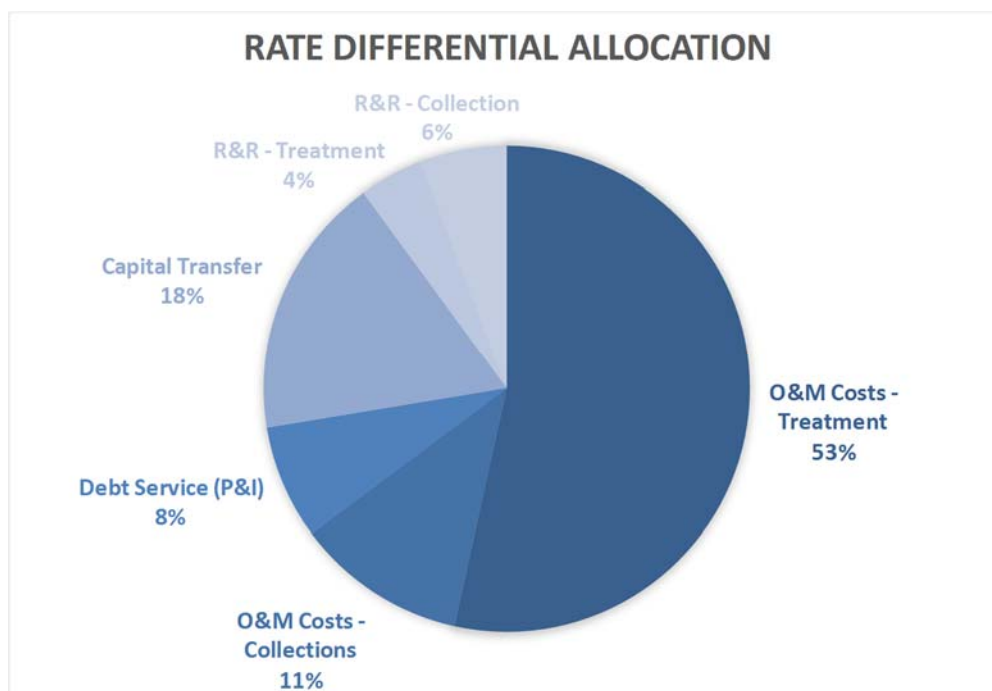
<sup>(1)</sup> Including Accessory Dwelling Units





### 3.2.3 Revised Rates

The City has identified several challenges with the existing wastewater rate structure. As such, based on discussions with City staff, Willdan is proposing to revise the current rate structure so as to better meet the equity and administrative efficiency objectives of the Utility. In accordance with such objectives, it is proposed that the City change to a structure that will charge customers based on the water meter size and the billable wastewater flow. Working with City, it was determined to keep a flat rate structure for residential customers, but to calculate the flat rate based on the revised structure. It is common in the utility industry to establish a rate structure that includes an incremented service availability charge (monthly base charge) such that customers placing a greater potential demand requirement on the system (those with larger connections) will pay proportionately more for the service availability component. The rate study analysis developed herein incorporates this change in the proposed new rate structure. The proposed rates will result in a \$2.85 increase for the monthly bills for the Single-Family customers. The graph below shows an approximate breakdown of how the increase is allocated among the various expenditure components.



It is important to note that the cost allocation proportions provided in the chart are representative of the Base Year projections. Such proportions will vary from year-to-year based on changes in operating expenses, addition of new debt service and required capital expenditures.



### 3.2.4 Methodology

The methodology for incrementing the new rate structure is based upon standardized demand criteria established by the American Water Works Association (AWWA) and the Water Environmental Federation (WEF) based upon the size of the water meter. Since the amount of wastewater flow is a direct function of the size of the water meter, it is appropriate to use the water meter size as a basis for the potential wastewater impact. The AWWA/WEF meter-size and equivalent flow criteria are commonly used to establish a standard unit of measure for customers referred to as an Equivalent Residential Unit (ERU). Based upon the established standards, an ERU is equal to one single-family residential connection with a 5/8 - inch water meter. The applicable ERU factors for larger connections are based upon the incremental increase in potential demand as compared to that of a standard water meter size. The factors are determined by hydraulic flow capabilities as defined by AWWA and WEF, and commonly utilized by the utility industry. A summary of the standard AWWA meter-size equivalency factors is provided in **Table 3-6**.

TABLE 3-6 METER EQUIVALENCY FACTORS	
Meter Size	AWWA Factors <sup>(1)</sup>
5/8"	1.00
3/4"	1.50
1.0"	2.50
1.5"	5.00
2.0"	8.00
3.0"	16.00
4.0"	25.00
6.0"	50.00
8.0"	80.00

(1) Meter-size equivalency factors established by the AWWA and identified in AWWA Standards C700, M1 and M22, as well as WEF Manual of Practice No. 27.



## **Volumetric Rates –**

As previously addressed, the existing rate structure applies different volumetric rates based on land-use classification. The proposed rate structure utilizes a uniform volumetric rate per 100 CF of billable wastewater flow (i.e. metered water flows to which wastewater volumetric rates are applied). This type of rate structure is equitable, administratively efficient, common for wastewater systems, consistent with industry standards and meets the Proposition 218 requirements.

### **3.2.4 Proposed Rates**

In conjunction with the proposed structural modifications previously discussed, the proposed wastewater rates are composed of two rate components consisting of a monthly base charge and a volumetric rate. The monthly base charge is based on the size of the water meter and the volumetric rates are charged per 100 CF of billable wastewater flow as determined by the metered water usage. In addition, the residential customers will continue to be billed at a flat monthly rate. As previously addressed, this type of rate structure meets the City's objectives and provides a reasonable allocation of the cost among the various customer classes pursuant to the demand and usage characteristics determined for each customer class.

The proposed rates for the Base Year represent an increase of approximately 4.5% from the existing rates for residential customers. Commercial customers percentage changes vary across the board due to the new proposed rate structure (meter based) and moving away from land-use rates. The proposed rates for FY 2018/19 are provided in **Table 3-7**.



**TABLE 3-7  
PROPOSED RATES**

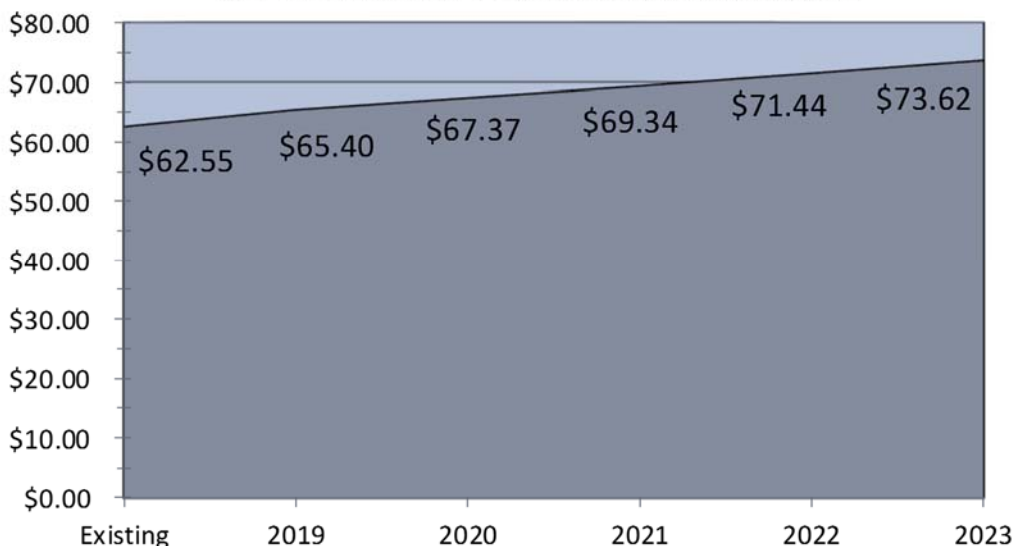
Description	FY 2019
<b>Flat Fee (Per Month):</b>	
Single Family	\$ 65.40
Multiple Family <sup>(1)</sup>	\$ 55.59
<b>Monthly Charge Per Dwelling Unit:</b>	
5/8"	\$ 15.00
3/4"	\$ 22.50
1.0"	\$ 37.50
1.5"	\$ 75.00
2.0"	\$ 120.00
3.0"	\$ 240.00
4.0"	\$ 375.00
6.0"	\$ 750.00
8.0"	\$ 1,200.00
10.0"	\$ 1,875.00
<b>Volumetric Per 100 CF:</b>	\$ 6.30

<sup>(1)</sup> Includes Assessor Dwelling Units

In addition to the proposed rates for the Base Year, the financial analysis of the Utility anticipates that the increase in operating costs and new debt will outpace rate revenues through the subsequent years of the study period. Based upon the analysis assumption developed herein, additional rate adjustments 3.0% per year are required to meet the financial needs of the Utility. The graph below reflects the Single Family monthly bill path for the projected five years. This graph also provides an indication of the relative trend for all customer class.



### PROJECTED 5-YEAR RATE PATH 800 CUBIC FEET (≈6,000 GAL) PER MONTH



In order to design rates to recover expenses on a cost basis, it is necessary to allocate system costs to the various rate structure components proposed herein. The wastewater utility costs are commonly classified into three categories for generally accepted rate-making purposes. These cost categories include 1) availability costs (i.e. fixed or capacity related costs); 2) customer costs; and 3) variable or flow related costs. A general basis for the assignment of the net revenue requirements is as follows:

**1. Availability Costs (Monthly Base Charge)** - Those costs incurred to establish a state of readiness to serve, and maintain the wastewater system capable of meeting the total combined demands of the customers. Such costs are generally fixed in nature and typically include portions of the operating expenses (especially labor costs), certain capital expenditures, and other costs that do not vary materially with the quantity of flow or cannot be designated specifically as variable costs. These costs may also be related to contractual obligations, such as debt service payments, that must be fulfilled whether or not the system operates.

**2. Customer Costs (Customer Charge)** – Those costs that are directly related to providing administrative and customer service functions. Applicable costs may include such items as customer accounting, gathering water flow data from EBMUD, developing assessment charges with Willdan for each customer account, and working with the County Assessor to place customers on the County Tax Roll and

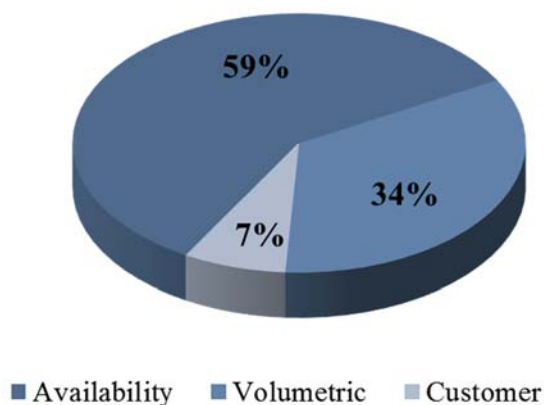


collecting revenue as portion of the labor expenses. Generally, these costs are incurred on a customer/event basis and have no direct relation with the amount of capacity made available to a customer or the level of service provided.

**3. Variable Costs (Volumetric Rates)** – Those costs that vary substantially or directly with the amount of service provided. Common variable costs include such flow or service-related items as chemicals, electricity, maintenance and certain other portions of the budgeted operating expenses.

The category criteria described above are generally applied to the individual cost items in the budgeted revenue requirements in order to allocate the costs to each rate component. These allocations are then utilized to further develop the user rates and charges. The allocation of the net revenue requirements to the various rate components is summarized in **Figure 1**.

**FIGURE 1  
ALLOCATION OF REVENUE REQUIREMENTS  
WASTEWATER SYSTEM**



It should be noted that strict allocations pursuant to the above criteria or rate components often result in an unreasonably high minimum monthly charge since many of the utility costs are inherently fixed in nature. Therefore, in designing the proposed wastewater rates, certain considerations are made with regard to rate-making allocations in order to more uniformly provide reasonable and acceptable levels for each rate component. While providing for such considerations may result in rate components that vary from the strict cost of service application, the objectives of cost recovery and equity are maintained, as rates for various customer classes are based on each classes' proportionate share of costs, and not more



than their proportionate share. The other rate-making considerations are detailed in the rate calculation sections later in the Report.

In addition, although the cost analysis has identified a separate allocation for customer related costs, in order to maintain consistency with the existing rate structure, the user rates and charges developed herein will not include a separate customer billing charge. As such, for rate design purposes, these costs will be recovered as necessary from the two remaining rate components.

### 3.2.5 Revenue Comparison

The user rate and charge revenues are estimated by applying the existing and proposed rates to the projected customers and flows. The revenues under existing rates for the Projection Period are estimated for wastewater and further segmented by rate component and customer class. The resulting revenues are then compared to the projected revenue requirements (i.e. O&M expenses, debt service, capital outlay, transfers, etc.) in each fiscal year in order to determine if the revenues are sufficient to satisfy the expenditure needs of the system. The projected wastewater revenue compared to revenue from existing rates are summarized within the table below.

Description	Existing Rates	Projected For Fiscal Year Ending June 30:				
		2019	2020	2021	2022	2023
<b>Revenues:</b>						
User Rate Revenues	\$ 4,877,608	\$ 5,217,654	\$ 5,374,824	\$ 5,531,986	\$ 5,699,537	\$ 5,873,456
Revenues Received From Hercules	1,719,678	1,719,678	1,795,653	1,875,801	1,960,377	2,049,654
<b>Total Revenues</b>	<b>\$ 6,597,286</b>	<b>\$ 6,937,332</b>	<b>\$ 7,170,477</b>	<b>\$ 7,407,787</b>	<b>\$ 7,659,914</b>	<b>\$ 7,923,110</b>
<b>System Expenditures:</b>						
O&M - Treatment	\$ 3,649,662	\$ 3,649,662	\$ 3,810,903	\$ 3,981,001	\$ 4,160,496	\$ 4,349,968
O&M - Collection	775,220	775,220	797,948	821,820	846,886	873,214
Debt Service (P&I)	517,097	517,097	1,491,495	1,626,324	1,657,880	1,659,998
Capital Transfer	1,200,000	1,200,000	300,000	275,000	275,000	275,000
R&R - Treatment	290,000	290,000	290,000	290,000	290,000	290,000
R&R - Collections	395,000	395,000	395,000	395,000	395,000	395,000
<b>Total Operating &amp; Non-Operating</b>	<b>\$ 6,826,979</b>	<b>\$ 6,826,979</b>	<b>\$ 7,085,346</b>	<b>\$ 7,389,145</b>	<b>\$ 7,625,262</b>	<b>\$ 7,843,180</b>
<b>System Revenue Excess (Deficiency):</b>						
\$ Amount	\$ (229,693)	\$ 110,353	\$ 85,131	\$ 18,642	\$ 34,652	\$ 79,930
Percentage	-3.48%	1.59%	1.19%	0.25%	0.45%	1.01%
<b>Debt Service Coverage</b>	<b>4.20</b>	<b>4.86</b>	<b>1.72</b>	<b>1.60</b>	<b>1.60</b>	<b>1.63</b>



### **3.2.6 Summary of Projected Debt Service Coverage and Operating Results**

#### **DEBT SERVICE & COVERAGE**

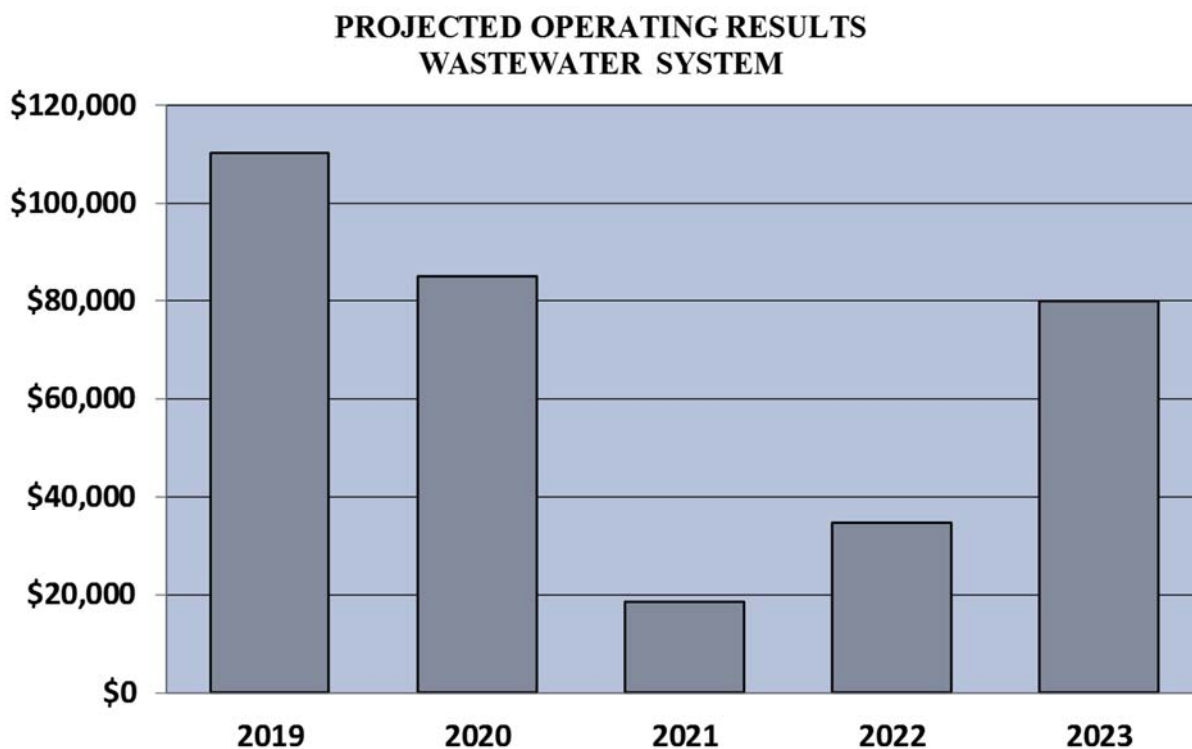
The projected operating statement also includes a calculation of annual debt service coverage. Debt service coverage is generally viewed as an indicator of the financial strength of the utility, and a minimum level of coverage is required for any debt issued for the utility. The debt service coverage ratio for a given year is calculated by dividing the annual net revenue by the annual debt service requirement for outstanding and anticipated new debt. For the debt service coverage calculation developed herein, net revenue consists of the total operating revenues (user rate revenues plus other revenues) less O&M expenses. It is important to note that, while the debt service coverage calculations developed herein are based on the relative flow-of-fund requirements defined in most common revenue bond ordinances, the results are provided for informative purposes only, and not intended as a legally supportable calculation for representation to bondholders.





### SUMMARY OF PROJECTED OPERATING RESULTS

The results demonstrate that the proposed new rates, along with the other system revenues and estimated future rate adjustments, are anticipated to be sufficient to satisfy the projected revenue requirements and capital needs of the utility system. A graphical illustration of the projected Operating and Net Revenue results is provided below.

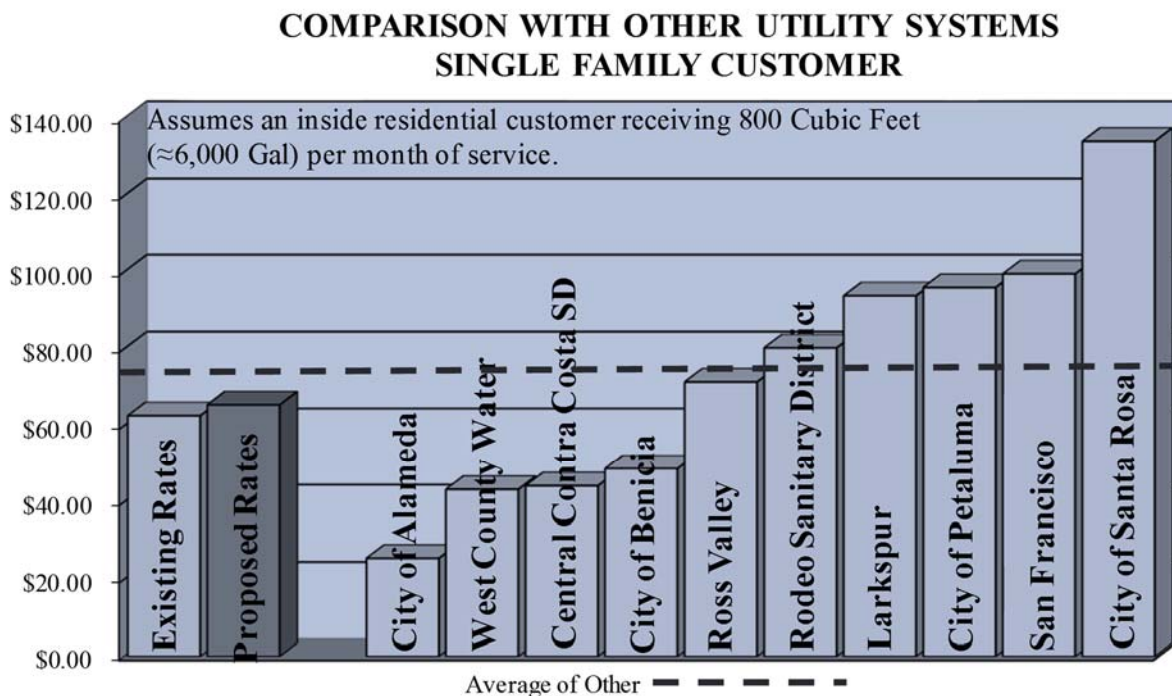


#### 3.2.7 Comparison with Neighboring Utilities

In order to provide the City with additional insight regarding the proposed rate levels, the analysis includes a comparison of both the existing and proposed user rates relative to the user rates charged by other wastewater utility systems located in the same general region. A summary analysis is provided comparing the cost of monthly wastewater service for a typical residential customer (assumed to have a 5/8-inch water meter), calculated under the existing and proposed rates of the City, with those of neighboring utilities. The rates utilized for the other utilities shown were in effect as of April 2018 and are exclusive of local taxes, outside surcharges, franchise fees or other rate adjustments. A summary comparison with



neighboring utilities for a Single-Family customer using 800 CF (approximately 6,000 gallons) of service per month is illustrated in the table below.



## Section 4 - Conclusions and Recommendations

### 4.1. Conclusions

- Projected operating revenues and operating expenses for the forecast period were developed by, and/or in consultation with, City staff, and are based upon reasonable assumptions;
- The projected capital project expenses have been developed by City staff to address sewer system renewal and replacement needs;
- Based on Conclusions 1 and 2 above, Willdan is of the opinion that the financial projections presented herein demonstrate the Utility’s ability to meet its obligations with regard to:
  - Operating expenses;
  - Non-operating expenses (including debt service);
  - Capital project expenses; and
  - Key financial policies, including maintenance of at least 6 months of operating fund reserve balances.



- The proposed rates presented herein are in conformance with industry standard rate-making practices, Proposition 218 and/or the City’s rate policies with respect to:
  - The equitable recovery of costs through its wastewater rates;
  - Setting rates based upon the proportionate cost of providing wastewater treatment and collection services; and
  - Generating sufficient revenue to fully recover system expenditure and reserve requirements.

#### **4.2. Recommendations**

- It is recommended that the City implement the proposed rates presented in this Report for FY 2018-19 through FY 2022-23.
- It is recommended that the City update the Revenue Sufficiency Analysis portion of this study each year to ensure projected revenue is sufficient to fund projected expenses going forward as assumptions made during this analysis may change and have a material impact upon the analysis.

